

National Library of Canada

Acquisitions and Bibliographic Services Branch

395 Wellington Street Ottawa, Ontano K1A 0N4 Bibliothèque nationale du Canada

Direction des acquisitions et des services bibliographiques

395, rue Wellington Ottawa (Ontario) K1A 0N4

Your his - Votre reference

### NOTICE

The quality of this microform is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us an inferior photocopy.

Reproduction in full or in part of this microform is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30, and subsequent amendments. La qualité de cette microforme dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

**AVIS** 

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de qualité inférieure.

La reproduction, même partielle, de cette microforme csi soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30, et ses amendements subséquents.



# TOURISM AND SUSTAINABLE DEVELOPMENT IN GRENADA, W.I.: TOWARDS A MODE OF ANALYSIS

George Vincent

Department of Geography McGili University

July 1995

A thesis submitted to the Faculty of Graduate Studies in partial fulfillment of the requirements for the degree of Doctor of Philosophy

© G Vincent 1995



National Library of Canada

Acquisitions and Bibliographic Services Branch Bibliothèque nationale du Canada

Direction des acquisitions et des services bibliographiques

395 Wellington Street Ottawa, Ontano K1A 0N4 395, rue Wellington Ottawa (Ontario) K1A 0N4

Your file - Votre reference

Our Ne - Notre référence

The author has granted an irrevocable non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of his/her thesis by any means and in any form or format, making this thesis available to interested persons.

L'auteur a accordé une licence irrévocable et non exclusive à la Bibliothèque permettant nationale Canada du de reproduire, prêter, distribuer ou vendre des copies de sa thèse de quelque manière et sous quelque forme que ce soit pour mettre des exemplaires de cette thèse la à disposition des personnes intéressées.

The author retains ownership of the copyright in his/her thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without his/her permission. L'auteur conserve la propriété du droit d'auteur qui protège sa thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

ISBN 0-612-12505-X



#### ABSTRACT

Grenada's tourism industry faces a number of pressing issues. Intensifying competition, and significant shifts in consumer preferences are forcing the industry to look critically at its past performance and to pinpoint its future development options. At the same time, there is a growing realization that industrial growth must occur within acceptable limits with regard to impacts on local culture and the natural and human-made environment, which represent the resource base upon which the future of tourism in Grenada depends. In simple terms, the major challenge facing Grenada, and tourism destinations everywhere, is how to fine-tune tourism product development and marketing strategies to meet the changing needs of the market place while at the same time creating a sustainable industry - one which will maximize economic benefits while reducing socio-environment costs.

This thesis focuses on presenting a theoretical and methodological framework that can be used to better understand the ability of different forms of tourism development to meet this key objective of sustainable development. I begin with a presentation of past attempts to grapple with the links that exist between tourism and the development process. It is shown that the theoretical approaches which dominated the tourism literature in the late 1970s and 1980s are unable to cope with the rapid changes occurring in the industry. In particular, these theories struggle to acknowledge and explain the growth of alternative forms of tourism. I then turn to new theoretical approaches epitomized by the work of Aulianna Poon. I argue that these new political economy approaches offer the best (though still far from perfect) way to understand the rise of alternative tourism and the complex interaction of global and local forces that characterize most forms of tourism development. In its empirical analysis of Grenada's tourism industry, the thesis focuses on market demand, economic impacts and environmental issues. The results reveal that visitors to Grenada can be divided into three separate and distinct market segments: (i) rest and relaxation; (ii) active-water based; and (iii) new-age, soft-adventure types. While the vast majority of visitors come to Grenada for an active water-oriented vacation, the fastest growing segment is the soft-adventurers. The economic impact study shows that only about 29 cents in every dollar spent by the "average" tourists became direct local income in 1992. However, it is clear that tourist using medium-sized or small hotel accommodation consistently generate higher direct levels of income than those using other accommodation types.

This thesis introduces a mixture of innovative and more traditional techniques to analyze the sustainability of different forms of tourism development. The integrated approach also incorporates a Discrete Choice Experiment (market analysis) and then uses Arc/Info GIS to study water demand and pollution issues associated with different forms of tourism development in the Grand Anse beach area. Consistent with the results of the market segmentation analysis, the results of the discrete choice experiment further highlight the importance of the beach-front accommodation located within a semi-isolated setting. The results of the water impact assessment suggest that tourists demand twice as much domestic water per person/day as the local residents.

In conclusion, I discuss the applicability of my theoretical approach and examine the implications of the findings for Grenada's tourism development. It is clear that most tourism theory cannot adequately explain the shifts toward 'non-traditional' forms of tourism development. Since the empirical results indicate that this type of tourism development is best suited to Grenada's needs, it is important to seek alternative theoretical explanations. The empirical analysis reveals that traditional mass tourism development is likely to be the most environmentally damaging and economically

Abstract

disadvantageous tourism option to pursue on the island. The results show that low density, high quality accommodation is both in demand by tourists and is also associated with greater economic linkages and potentially less environmental damage. I conclude with a series of recommendations regarding the island's future tourism development efforts.

#### RESUME

L'industrie du tourisme de la Grenade fait face à de nombreux problèmes. La compétition grandissante jumelée à d'importants changements de goût chez les consommateurs obligent l'industrie à se questionner sur son passé et à évaluer ses options de développements futurs. Parallèlement, un certain consensus se dégage voulant que la croissance de l'industrie se fasse à l'intérieur des limites acceptables quant à l'impact sur la culture locale et l'environnement naturel et humain, qui représentent la ressource de base sur laquelle dépend l'avenir du tourisme à la Grenada. En somme, le plus grand défi de la Grenade et des destinations touristiques, en général, consiste à l'ajustement du développement de produits touristiques et des stratégies de *marketing* afin de répondre aux besoins changeants du marché tout en maintenant une industrie durable: où l'on maximise les bénéfices économiques tout en réduisant les coûts socio-environnementaux.

Cette thèse se concentre sur la présentation d'un cadre théorique et méthodologique qui peut être utilisé afin de mieux comprendre la capacité des différentes formes de développement touristiques, pour rencontrer l'objectif clé du développement durable. Je débute avec une présentation des autres tentatives d'explication des liens existants entre le tourisme et le processus de développement. On y démontre que les approches théoriques, qui ont dominé la recherche en tourisme vers la fin des années 70 et 80, sont incapables de faire face aux changements rapides dans l'industrie. Plus particulièrement, ces théories s'efforcent à reconnaître et à expliquer la croissance de formes de tourisme alternatives. Je me tourne donc vers de nouvelles approches théoriques incarnées par le travail de Aulianne Poon. J'argumente que ces nouvelles approches d'économie politique offrent la meilleure solution (bien que loin d'être parfaite) à la compréhension du tourisme alternatif et de l'interaction complexe des facteurs globaux et locaux qui caractérisent la plupart des formes de développement touristique. Dans son analyse empirique de l'industrie touristique de la Grenade, la thèse se concentre sur la demande du marché et les impacts économiques et environnementaux. Selon les résultats, les touristes qui visitent la Grenade appartiennent aux trois catégories suivantes du marché: (i) ceux qui cherchent le repos et la détente; (ii) ceux qui cherchent des activités nautiques; et (iii) ceux du *new age* et peu aventureux. Bien que la plupart des touristes à la Grenade cherche des vacances basées sur des activités nautiques, la catégorie la plus croissante est celle des voyageurs peu aventureux. L'étude sur l'impact économique révèle qu'en 1992, sur chaque dollar dépensé par le touriste "moyen", seule 29 centimes ont rapportés du revenu directe au pays. Pourtant, il est évident que les frais de logement dans les petits et moyens hôtels produisent régulièrement plus de revenu que d'autres hôtelleries.

Cette thèse présente un mélange de techniques conventionnelles et innovatrices afin d'analyser la viabilité à long terme de différentes formes de développement touristique. L'approche intégrée s'appuie aussi sur une expérience d'un Choix Discret (analyse du marché) pour ensuite évaluer la demande de l'eau et les problèmes écologiques afférentes aux diverses formes du développement touristique dans les quartiers de la plage Grand Anse, à l'aide du logiciel ARC/INFO GIS. Conformément aux résultats de l'analyse du marché par secteur, les résultats de l'expérience du Choix Discret mettent en valeur l'importance des hôtels au bord de la mer dans des quartiers quasi-isolés. Les résultats de l'examen de la demande de l'eau suggèrent que les touristes utilisent deux fois plus d'eau par personne/par jour que les résidents du pays.

En conclusion, je présente une discussion de la validité de mon approche théorique et j'évalue les conséquences des données pour l'avenir du développement touristique de la Grenade. Il est évident que la plupart des théories à propos du tourisme n'explique pas suffisamment le passage vers des méthodes non traditionnels dans le développement du tourisme. Il est important de rechercher des explications théoriques alternatives puisque les résultats empiriques indiquent que ce genre de tourisme conforme le mieux aux besoins de la Grenade. L'analyse empirique révèle que le tourisme conventionnel à grande échelle serait probablement l'option la plus dommageable à l'environnement et la moins avantageuse économiquement sur cette île. Les résultats démontrent que l'hôtellerie de haute qualité et de basse densité est en demande par les touristes et est liée aux plus grands gains économiques en plus d'être potentiellement moins dommageable à l'environnement. Je termine avec une série de recommandations en ce qui concerne le développement touristique futur de l'île.

#### ACKNOWLEDGMENTS

I would first like to express my sincere gratitude to the Canadian Commonwealth Scholarship and Fellowship Program for providing the funding for this research project. Financial support from the Small Grants Committee of the Graduate Faculty of McGill University is also gratefully acknowledged.

I would like to thank the members of my advisory committee, Professors Simon Milne, Gordon Ewing, Theo Hills, Emine Sarigollu and Thom Meridith. Simon Milne deserves special mention for his moral, academic and financial support throughout the five long years. Gordon Ewing and Emine Sarigollu also deserve an extra mention for their advice on statistical and other technical matters. Thanks are also due to Professors Jordan Louviere and Don Anderson for their assistance with the design of the Discrete Choice Experiment.

I would like to express my sincere gratitude to all the people who assisted in the distribution of the many questionnaires. In this regard a special thanks must be extended to the staff of the Department of Statistics of the Ministry of Finance in Grenada and the Staff of the Grenada Board of Tourism in Toronto. Many thanks also to the many managers, travel agents, government officials and tourists who took the time to answer to my many requests. Thanks are also due to Vincent Cooper for his assistance with the impact assessment and Margaret Toussaint for her help in putting together the final document.

A final thank you is reserved for my wife Althea and children Genea, Algerson and Getonia for their continued love, understanding and encouragement. They are the ones who suffered most during this project.

## ABBREVIATIONS USED IN THIS THESIS

| ac      | acre  |
|---------|---|
| AT      | Alternative Tourism   |
| BDD     | British Development Division                                  |
| BOD     | Biological Oxygen Demand                                      |
| BVI     | British Virgin Islands  |
| BWIA    | National Airline of Trinidad and Totago                       |
| CARICOM | Caribbean Community   |
| CBI     | Caribbean Basin Initiative                                    |
| CDB     | Caribbean Development Bank                                    |
| CHA     | Caribbean Hotel Association                                   |
| CHARMS  | Caribbean Hotel Association Reservation and Management System |
| CIDA    | Canadian International Development Agency                     |
| cm      | centimeter  |
| CRS     | Computer Reservation System                                   |
| CTAP    | Canadian Training and Awards Programme                        |
| СТО     | Caribbean Tourism Organization                                |
| DC      | Developed Country   |
| DCE     | Discrete Choice Experiment                                    |
| E.C.\$  | Eastern Caribbean Dollar                                      |
| EAI     | Enterprise for the Americas Initiative                        |
| EC      | European Union  |
| ECLAC   | Economic Conference of Latin America and the Caribbean        |
| EEC     | European Economic Union                                       |
| EIA     | Environmental Impact Assessment                               |
| EIU     | Economist Intelligence Unit                                   |
| FC      | Feacal Coliform   |
| FAO     | Food and Agriculture Organization (U.N)                       |
| ft      | foot  |
| GBT     | Grenada Board of Tourism                                      |
| GDP     | Gross Domestic Product  |
| GHA     | Grenada Hotel Association                                     |
| GIS     | Geographic Information System                                 |
| GNP     | Gross National Product  |
| GOG     | Government of Grenada   |
| gpd     | gallons per day   |
| GRENLEC | Grenada Electricity Services                                  |
| GRENTEL | Grenada Telecommunication Company                             |
| ha      | hectare   |
| IDC     | Industrial Development Corporation                            |
| ПА      | Independence of Irrelevant Alternative                        |
| in      | inch  |



| IT     | Independent Travel                                 |
|--------|--|
| kg     | kilogram   |
| km     | kilometer  |
| LDC    | Lesser Developed Countries                         |
| LIAT   | Leeward Islands Air Transport                      |
| m      | meter  |
| mi     | mile   |
| ML     | Millions of Liters                                 |
| mm     | millimeter   |
| MNL    | Multi-Nomial Logit                                 |
| NAWASA | National Water and Sewage Authority                |
| NRMU   | Natural Resource Management Unit                   |
| OAS    | Organization of American States                    |
| OECS   | Organization of Eastern Caribbean States           |
| PLC    | Profit Life Cycle                                  |
| PSIP   | Public Sector Investment Programme                 |
| REG    | Regional Employment Generation Coefficient         |
| RGRG   | Regional Government Revenue Generation Coefficient |
| RIG    | Regional Income Generation Coefficient             |
| TACE   | Tourist Area Cycle of Evolution                    |
| UN     | United Nations                                     |
| UNDP   | United Nations Development Programme               |
| UNEP   | United Nations Environmental Programme             |
| US\$   | American Dollar (US $1.00 = EC$ $2.70$ )           |
| USA    | United States of America                           |
| USAID  | United States Agency for International Development |
| USVI   | United States Virgin Islands                       |
| WCED   | World Conference on Environment and Development    |
| WTO    | World Tourism Organization                         |
| WTTC   | World Travel and Tourism Conference                |

# CONVERSION CO-EFFICIENTS BETWEEN IMPERIAL MEASURES AND WEIGHTS AND THE METRIC SYSTEM

# IMPERIAL METRIC SYSTEM

| LENGTH | 1 inch            | 2,540 centimeters      |
|--------|-------------------|------------------------|
|        | 0.379370 inch     | 1 centimeter           |
|        | 1 yard            | 0.91440 meter          |
|        | 1.094 yards       | 1 meter                |
|        | 1 mile            | 1.609 kilometers       |
|        | 0.6214 mile       | 1 kilometer            |
|        | 1 fathom (6 feet) | 1.829 meters           |
| AREA   | 1 square foot     | 0.093 square meter     |
|        | 10.6 square feet  | 1 square meter         |
|        | 1 acre            | 0.405 hectare          |
|        | 2.471 acres       | 1 hectare              |
|        | 1 square mile     | 2.95 square kilometers |
|        | 0.386 square mile | 1 square kilometer     |
| VOLUME | 1 pint            | 0.568 liter            |
|        | 1.76 pints        | 1 liter                |
|        | 1 gallon          | 4.546 liters           |
|        | 0.220 gallon      | 1 liter                |
|        | 1 cubic foot      | 0.028 cubic meters     |
|        | 35.31 cubic feet  | 1 cubic meter          |



# TABLE OF CONTENTS

|         |                     | ABSTRACTiiRESUMEvACKNOWLEDGEMENTviiiABBREVIATIONSxiCONVERSION COEFFICIENTSxiTABLE OF CONTENTSxiiLIST OF TABLESxviLIST OF FIGURESxix |
|---------|---------------------|---|
| CHAPTER | I                   | INTRODUCTION AND BACKGROUND 1   |
|         | 1.0                 | Introduction  |
|         | 1.1                 | Aims and Objectives 7   |
|         | 1.2                 | Methodology   |
|         | 1.3                 | Thesis Structure  |
| CHAPTER | Π                   | TOURISM AND DEVELOPMENT: A LITERATURE<br>REVIEW   |
|         | 20                  | Introduction 15   |
|         | 21                  | Tourism Impacts   |
|         | <b>~</b> . <b>.</b> | 2 1 1 Fronomic Impacts 16   |
|         |                     | 2.1.1 Leonomic Impacts  |
|         |                     | 2.1.2 Socio-Cultural Impacts  |
|         |                     | 21.1.5 Euronomicial Impacts   |
|         | 22                  | Key Theoretical Approaches  |
|         |                     | 2.2.1 Dependency Approaches 28  |
|         |                     | 2.2.2 Diffusionist Approaches 34  |
|         |                     | 2.2.3 Tourism Area Cycle of Evolution 36  |
|         | 2.3                 | Alternatives to Mass Tourism  |
|         |                     |   |
| CHAPTER | ш                   | TOWARDS AN ALTERNATIVE THEORETICAL AND<br>METHODOLOGICAL APPROACH   |
|         | 3.0                 | Introduction 46   |
|         | 3.1                 | Changing Consumer Demand 47   |
|         | 3.2                 | Industry Structure and Globalization 53   |
|         |                     |   |

|         | 3.3<br>3.4<br>3.5                             | The Influence of Other Theoretical Approaches   |
|---------|---|---|
| CHAPTER | rv  | GRENADA: THE CASE STUDY   |
|         | 4.0<br>4.1<br>4.2<br>4.3<br>4.4<br>4.5<br>4.6 | Introduction and Background82The National Economy83Sectoral Performance87Macro-Economic Strategy91The Tourism Industry93The Tourism Strategy99The Resource Base: An Overview103   |
| CHAPTER | v   | MARKET ANALYSIS 111   |
|         | 5.0<br>5.1<br>5.2<br>5.3<br>5.4               | Introduction111Tourist: Who's Who112Market Segmentation119The Discrete Choice Experiment (DCE)135The Experiment's Design & Results141   |
| CHAPTER | VI  | ECONOMIC IMPACT ANALYSIS 154  |
|         | 6.0<br>6.1<br>6.2<br>6.3<br>6.4<br>6.5        | Introduction       154         Government Estimates       155         Methodology and Approach       160         Visitor Expenditure Patterns       164         Industry Survey       173         Tourist Multiplier Co-efficient       180         6.5.1       Regional Income Multiplier         Co-efficients       180         6.5.2       Regional Employment Multiplier         Co-Efficients       190         6.5.3       Government Revenue Generation |

#### CHAPTER VII THE ENVIRONMENTAL DIMENSION: WATER .... 199

| 7.0 | Introducti | on                             |
|-----|------------|--------------------------------|
| 7.1 | Backgrout  | nd and Justification 199       |
| 7.2 | Research   | Methodology                    |
|     | 7.2.1      | Buffer Width Approach 205      |
| 7.3 | Results an | ad Discussion                  |
|     | 7.3.1      | Land Use Patterns 210          |
|     | 7.3.2      | Population Distribution        |
|     | 7.3.3      | Water Consumption Patterns 214 |
|     | 7.3.4      | Estimate of Pollution          |

# CHAPTER VIII SUMMARY AND CONCLUSIONS 228 8.0 Introduction 228 8.1 Tourism and Grenada: Synthesis of Key Findings 228 8.2 Theoretical Implications 237 8.3 Recommendations and Research Agenda 242

| REFERENCES | 254 | 4 |
|------------|-----|---|
|------------|-----|---|

#### APPENDICES

#### ONE

| la | 1992: Motivational and Expenditure Survey Instrument |
|----|--|
| 1Ь | 1988: Motivational and Expenditure Survey Instrument |

1c 1992: Economic Impact Survey Questionnaire

#### TWO

|       | <ul> <li>2a Discrete Choice Experiment Questionnaire Survey - Block A</li> <li>2b Discrete Choice Experiment Questionnaire Survey - Block B</li> <li>2c Discrete Choice Experiment Questionnaire Survey - Block C</li> <li>2d Discrete Choice Experiment Questionnaire Survey - Block D</li> </ul> |
|-------|--|
| THREE | REGIONAL INCOME GENERATION MODEL   |
| FOUR  | 1988: DAILY EXPENDITURE ESTIMATES<br>BY COUNTRY OF RESIDENCE   |

|          | AND ACCOMMODATION TYPE 300  |
|----------|---|
| FIVE     | 1992: DAILY EXPENDITURE ESTIMATES<br>BY COUNTRY OF RESIDENCE<br>AND ACCOMMODATION TYPE  |
| SIX      | 1988: TOTAL VISITOR EXPENDITURE ESTIMATES<br>BY COUNTRY OF RESIDENCE<br>AND ACCOMMODATION TYPE                                |
| SEVEN    | 1992: TOTAL VISITOR EXPENDITURE ESTIMATES<br>BY COUNTRY OF RESIDENCE<br>AND ACCOMMODATION TYPE                                |
| EIGHT    | TOTAL INCOME GENERATION BY COUNTRY<br>OF RESIDENCE AND ACCOMMODATION TYPE   |
| NINE     | 1992: GOVERNMENT REVENUE<br>COLLECTION ESTIMATES  |
| TEN      | MODELS FOR BUFFER WIDTH DETERMINATION 324   |
| ELEVEN   | LIST OF COVERAGES CREATED FOR<br>BUFFER WIDTH ANALYSIS  |
| TWELVE   | COVERAGES AND PROCEDURES FOR<br>BUFFER WIDTH ANALYSIS   |
| THIRTEEN | SAMPLE CALCULATIONS FOR DAILY RUN-OFF,<br>POLLUTION LOADING AND POLLUTION<br>CONCENTRATION WITHIN THE<br>GRAND ANSE WATERSHED |

# LIST OF TABLES

| Table 2.1  | The Socio-Cultural Impacts of Tourism                         |
|------------|---|
| Table 2.2  | The Environmental Cost and Benefits of Tourism                |
| Table 3.1  | Characteristics of the "Thoughtful Consumer"                  |
| Table 3.2  | Changing Population Structure (U.K. and U.S.A.) 51            |
| Table 4.1  | Grenada's Direction of Trade in % - 1990                      |
| Table 4.2  | Grenada's Gross Domestic Product by Sector                    |
|            | at Factor Cost - 1984-1991                                    |
| Table 4.3  | Visitor Arrival by Category (1983-1993)                       |
| Table 4.4  | Breakdown of Accommodation Sector (1984-1994)96               |
| Table 4.5  | Stay Over Visitor Arrivals                                    |
|            | by Country of Residence (1986-1993)98                         |
| Table 5.1  | Survey Samples: Size and Distribution                         |
| Table 5.2  | Visitor Travel Patterns (1988 & 1992) 114                     |
| Table 5.3  | Some Socio-Demographic Indicators (1988 & 1992) 115           |
| Table 5.4  | Visitor Information Sources                                   |
| Table 5.5  | Alternative Destination Considered - 1992                     |
| Table 5.6  | Vacationers Satisfaction Index - 1992                         |
| Table 5.7  | Vacationers Mean Length of Stay (1988 & 1992) 119             |
| Table 5.8  | Frequencies and Means   |
|            | of Distinguishing Variables - 1988 Survey                     |
| Table 5.9  | Places visited by Cluster - 1988 Survey                       |
| Table 5.10 | Activity Index by Cluster - 1988 Survey 125                   |
| Table 5.11 | Visitor Satisfaction Index by Cluster - 1988 Survey 125       |
| Table 5.12 | Mean Daily Expenditure (US \$) by Cluster - 1992 Survey . 128 |
| Table 5.13 | Distinguishing Variables by Cluster - 1992 Survey 129         |
| Table 5.14 | Vacationers Satisfaction Index by Cluster - 1992 Survey 130   |
|            |   |



| Table 5.15  | Cluster Description - 1988 Survey                              |
|-------------|--|
| Table 5.16  | Cluster Description - 1992 Survey                              |
| Table 5.17  | List of Important Variables Used in DCE 142                    |
| Table 5.18  | Results of Discrete Choice Experiment: Utility Estimates . 143 |
| Table 5.19  | Probability and Utility Estimates                              |
|             | (Using D9 from Appendix 2d) 149                                |
| Table 5.20  | Probability and Utility Estimates                              |
|             | (Randomly Designed Destinations)                               |
| Table 5.21  | Choice Probability Measurements                                |
| Table 6.1   | GBT's Daily Expenditure Estimates                              |
| Table 6.2   | Total Expenditure by Accommodation                             |
|             | Type (U.S\$'000) - 1988 159                                    |
| Table 6.3   | Total Expenditure by Accommodation                             |
|             | Type (U.S\$'000) - 1992 159                                    |
| Table 6.4   | Comparative Daily Expenditure Estimates (1988 & 1992) . 165    |
| Table 6.5   | Daily Expenditure by Accommodation - 1988                      |
| Table 6.6   | Daily Expenditure by Accommodation - 1992 168                  |
| Table 6.61  | Questionnaire Interviews Completed                             |
|             | by Business Types - 1992 174                                   |
| Table 6.7   | Regional Income, Employment                                    |
|             | and Government Revenue Co-efficients - 1992 177                |
| Table 6.8   | Regional Income Generation Co-efficient                        |
|             | by Accommodation Types - 1992 181                              |
| Table 6.9   | Daily Regional Income Generation by                            |
|             | Accommodation Type - 1992                                      |
| Table 6.10  | Total Income Contribution                                      |
|             | by Accommodation Type (US\$ '000) - 1992 185                   |
| Table 6.11a | Regional Income (Multiplier) Co-efficient                      |
|             | by Segment (Cluster 1) - 1992                                  |
| Table 6.11b | Regional Income (Multiplier) Co-efficient                      |
|             |  |

|             | by Segment (Cluster 2) - 1992 186                             |
|-------------|---|
| Table 6.11c | Regional Income (Multiplier) Co-efficient                     |
|             | by Segment (Cluster 3) - 1992 187                             |
| Table 6.12a | Daily Regional Income Generation                              |
|             | by Segment (Cluster 1) 188                                    |
| Table 6.12b | Daily Regional Income Generation                              |
|             | by Segment (Cluster 2) 188                                    |
| Table 6.12c | Daily Regional Income Generation                              |
|             | by Segment (Segment 3)  |
| Table 6.13a | Regional Employment (Multiplier) Co-efficient                 |
|             | by Accommodation Type - 1992 (Per U.S\$10,000 Spent) . 191    |
| Table 6.13b | Direct Full-Time Employment Estimates                         |
|             | by Accommodation Type - 1992                                  |
| Table 6.14a | Regional Government Revenue Co-efficient by                   |
|             | Accommodation Type 195  |
| Table 6.14b | Daily Government Revenue Estimates per Visitor                |
|             | by Accommodation Type 195                                     |
| Table 6.15  | Total Government Revenue Collected                            |
| •           | by Accommodation Type (US\$'000) - 1992 197                   |
| Table 7.1   | Total Buildings Within the Study Area                         |
| Table 7.2   | Buildings Within The High Risk Zone                           |
| Table 7.3   | Building By Accommodation Category 212                        |
| Table 7.4   | Population Distribution Within the Grand Anse Watershed . 213 |
| Table 7.5   | Population Distribution Within Catchments 213                 |
| Table 7.6   | Population Distribution by Sector                             |
|             | Within the High Risk Zone 215                                 |
| Table 7.7   | Water Use By Sector Within The Grand Anse Watershed . 215     |
| Table 7.8   | Average Daily Per Capita Water Consumption By Visitors        |
|             | At Different Accommodation Types (Imp. Gallons) 217           |
|             |   |

•

# LIST OF FIGURES

|             | Follows Page   |
|-------------|--|
| Figure 2.1  | Tourism Destination Development Models                     |
| Figure 2.2  | Tourist Types and their Characteristics                    |
| Figure 2.3  | Tourism Styles of Small Caribbean Islands                  |
| Figure 3.1  | Earnings of Major U.S. Carriers (1989 - 1993)55            |
| Figure 3.2  | The Changing Structure of International Tourism            |
| Figure 4.1  | Grenada, W: Location Map                                   |
| Figure 4.2  | Grenada, W.I.: Roads and Towns                             |
| Figure 4.3  | Grenada: Tourism Zone and Attractions                      |
| Figure 7.1  | Grenada: General Description of Grand Anse Watershed 200   |
| Figure 7.2  | Grenada: Land Use Within the Grand Anse Watershed 200      |
| Figure 7.3  | Physical Features of the Grand Anse Watershed (Soils) 207  |
| Figure 7.4  | High Risk Pollution Zones Within Grand Anse Catchments 207 |
| Figure 7.5  | Building Class Relative to High Risk Pollution Zones -     |
|             | Grand Anse Watershed                                       |
| Figure 7.6  | Building Class Within High Risk Pollution Zones -          |
|             | Grand Anse Watershed                                       |
| Figure 7.7  | GIS - Overlay Procedure                                    |
| Figure 7.8A | Seasonal Variation in Observed Seawater                    |
|             | Pollution (1991-1992) 222                                  |
| Figure 7.8B | Monthly Rainfall Variation At The Point                    |
|             | Salines International Airport (1991-1992) 222              |
| Figure 7.9  | Grand Anse Watershed Sewer Alignment                       |

# CHAPTER 1 INTRODUCTION AND BACKGROUND

#### **1.0 INTRODUCTION**

The 1980's will be remembered as a decade of change and restructuring in the global economy. Developed (DC) and developing or lessor developed (LDC) countries alike have been forced to adjust to intensifying international competition, the rapid evolution of new technologies and changing patterns of consumer demand. The efforts of DCs to contain inflation by increasing interest rates ushered in a period of economic contraction. At the same time, attempts by both national governments and international agencies to implement tighter monetary policies made it increasingly difficult for LDCs to service their growing levels of indebtedness.

These pressures have been felt particularly strongly by the small open economies of the Caribbean. Such nations are extremely vulnerable to fluctuations in agricultural commodity prices and to shifts in world energy prices. Over the past decade, many of these microstates have employed a variety of economic development strategies aimed at diversifying their economic structures in order to reduce their dependence on a narrow range of primary exports. Unfortunately, attempts to introduce more traditional exportled or import substitution based manufacturing growth strategies have generally failed because of problems associated with small size (limited domestic market, limited finance) and isolation. As a result, increasing numbers of islands have turned to tourism as a possible source of foreign exchange and employment.

Several exogenous factors have fostered optimism in the ability of tourism to act as an engine of economic growth. The continued growth of international travel over the last three decades is a major factor. The number of international travelers increased from 60 million in 1960 to 411 million in 1990, and is expected to reach 600 million by the year 2000 (Bodlender, 1990: 247; Gouirand, 1993: 22). The WTO (1990: 3) estimates that the \$2.4 trillion contribution of travel and tourism to the world economy in 1989 was equivalent to 12% of global GNP; over 5% of global sales of all goods and services; and 15% of global service sector sales. The tourism industry is, therefore, considered to be the world's largest with one in fifteen people working in the industry worldwide (Tourism Canada, 1990; WTTC, 1991; WTO, 1990). Tourism also helps to support the development of basic infrastructure, it stimulates complementary industries through indirect multiplier effects, and promotes foreign investment (WTTC, 1991: 23; Price and Blair, 1989: 67).

The Caribbean tourism industry was quick to respond to the rapid growth characterizing the previous decade - investing heavily in upgrading, developing and promoting their products. Some islands (e.g. Antigua, St. Lucia, Trinidad and Tobago) built industries virtually from scratch while destinations that were already major players - Barbados, Bahamas, Jamaica and Bermuda, greatly expanded their offerings (Wilkinson, 1994). Regardless of the development approach taken, the strong growth in demand supplied an ever increasing number of customers and created the impression that almost any new product could find a market.

For the period 1983-1990, tourism earnings throughout the Caribbean grew by an average of 10% per annum (Caribbean Tourism Organization, 1992.). The fastest growth was recorded by relative new comers to the market (Antigua, Dominica, the Dominican Republic, the British Virgin Islands, Martinique, St. Lucia, St. Kitts and St. Vincent and the Grenadines) or by established destinations recovering from a past decline such as Cuba and Grenada (Harker, 1990). Similarly, Grenada's tourist industry experienced significant growth and expansion between 1984 - 1994, when real growth also averaged more than 10%. Tourism has now replaced agriculture as Grenada's main foreign exchange earner. The pro-tourism policy initiatives of international and bilateral aid agencies have also added to the popularity of tourism. For example, the European Economic Community has placed increasing emphasis on developing tourism in the Caribbean and Pacific in order to reduce the negative consequences of the ending of guaranteed export quotas. Similarly, the Caribbean Basin Economic Recovery Expansion Act better known as the Caribbean Basin Initiative (CBI), enacted by the U.S.A. in 1984, was aimed at reducing economic and political strife by stimulating Caribbean economies through, to a large degree, the growth of tourism (Planisck, 1989).

The revised Caribbean Basin Economic Recovery Expansion Act of 1990 (C.B.I) has since removed the current 1995 expiration date and has placed an even greater emphasis on tourism. Likewise, after much debate and opposition, Title 11 of the Customs and Trade Act of 1990 and Section 232 of the C.B.I. Bill, 1990 was enacted. This allowed an increase on duty-free allowance from CBI-eligible countries to \$600 from \$400, while that for alcoholic beverage moved from 1 to 2 liters per visitor. In the same spirit, the Enterprise for the Americas Initiative (EAI) initiated by President Bush further served to encourage the development of trade, particularly through tourism, between the U.S. and the Caribbean Basin countries. (Gayle and Goodrich, 1993).

It is clear that small island states, particularly tropical islands, often have little economic choice but to accept and promote tourism development as a means of achieving economic growth and prosperity (Wilkinson, 1987; Milne, 1992b). However, in spite of the optimism of a variety of governments, policy makers, planners and international agencies, there is continued concern over the industry's ability to live up to, not only its economic potential, but also its role as a vehicle to generate meaningful "sustainable" development.<sup>1</sup>

There are rising worries about the negative environmental and social impacts of 'traditional' approaches to tourism development which focus on resorts and hotels designed to cater for 'mass' tourism. In response to these concerns, several practitioners have begun to describe, and in some cases implement, what might be called "alternative tourism" strategies. Alternative tourism can be broadly defined as tourism that is consistent with natural, social and community values and which allows both hosts and guests to enjoy positive and worthwhile interaction and shared experiences" (Smith and Eadington, 1992:3).

"Ecotourism" has developed into possibly the most common form of 'alternative' tourism proposed throughout the islands. Ironically, the term is still without an agreed definition and is probably the least understood and agreed upon concept presently used throughout the Caribbean. According to Ziffer (1989) adventure, nature and cultural tourism are commonly referred to collectively as 'ecotourism' (Ziffer, 1989). While definitions of ecotourism vary, the following is commonly adopted in the literature:

Tourism that involves traveling to relatively undisturbed or uncontaminated natural areas with the specific object of studying, admiring, and enjoying the scenery and its wild plants and animals, as well as any existing cultural aspects (both past and present) found in these areas (Ceballos-Lascurain, cited in Ziffer, 1989: 5).

<sup>&</sup>lt;sup>1</sup>It is important to note at this point that the term development, as used in this thesis concerns the whole process of change economic: social, political and environmental. William Demas, in referring to the kind of development which Caribbean Islands should strive for (meaningful development), stresses that "economic growth is the necessary (but not sufficient) condition for achieving a broader kind of development" (Demas 1991, 22). Following Demas development is therefore interpreted in this research as a complex process of change that involves not only narrow economic goals but also broader societal and environmental concerns.



Ecotourism also implies an ethic based on conservation of the environment and improving the welfare of local people (Ryel and Grasse, 1991; Western, 1993). Such assumptions are increasingly leading developing nations/regions to adopt forms of ecotourism as part of their broader development plans (Cater, 1993; Schlüter, 1993). Included among them are some Caribbean islands like Dominica, Anguilla, Montserrat, Grenada and the U.S. Virgin Islands (USVI) (Weaver, 1993). At the same time, however, many observers are questioning the assumption that "alternative forms of tourism " like ecotourism, offer a more environmentally sound and sustainable type of development than traditional 'mass' tourism (Butler, 1992; Cater, 1993).

Unfortunately, there is little known about just how 'sustainable'<sup>2</sup> these forms of alternative tourism really are or whether they will attract enough of the 'right kinds' of tourists to fulfil nations' economic goals (Butler, 1992; Wall, 1993). Not much is known about the kinds of linkages that different types of tourism will form with the local economy (Jackson, 1990a) or the type of direct local involvement that will eventuate (Wight, 1993). Even less is known about the environmental impacts of different forms of tourism (Hawkes and Williams, 1993). It is these issues (with the exception of the socio-cultural dimension), set within the context of the Grenada tourist industry, that

<sup>&</sup>lt;sup>2</sup> Throughout this thesis sustainable development is defined as "development that meets the needs of future generations without compromising the ability of future generations to meet their own needs" (WCED, 1987:43). Sustainable tourism development therefore, is seen as "tourism which is developed and maintained in an area (community environment) in such a manner and at such a scale that it remains viable over an indefinite period and does not degrade or alter the environment (human and physical)in which it exists, to such a degree that it prohibits the successful development and well being of other activities and processes. It is an effort to allow region/nation's to maximize the economic benefits of tourism while at the same time maintaining the 'capital stock' of the natural resources on which tourism depends (U.N. Report, 1989).



form the focus of this study.

As Grenada's tourism industry enters the mid-1990s, it faces a number of pressing issues. Reduced consumer spending in major markets, intensifying competition and significant shifts in consumer preferences are forcing the industry to look critically at its past performance and to pinpoint its future development options (Vincent et al 1993). At the same time, there is a growing realization that industry growth must be sustainable in the true sense of the word (environmentally, culturally as well as economically).

The primary goals (established in the 1990 Tourism Sector Plan) for the industry's development between 1991 and 1995 were a 12% real growth rate in the industry and the generation of approximately 3252 new jobs. In order to achieve these objectives, the following goals are considered to be necessary (Duggal, 1990; Government of Grenada, 1990a):

- a 20 % annual average increase in the number of stay-over visitors.
- a 20 % annual average increase in the number of cruise ship visitors up to 1993 and 10 % thereafter.
- a 15 % annual average increase in the number of yacht calls.
- the attainment of E.C. \$250m in gross receipts from both stay-over and cruise ship visitors by 1995.
- a reduction in foreign exchange leakages in the sector.
- an increase in the number of hotel rooms from 514 (1989) to 1354 by 1995, and an increase in the total accommodation capacity from 1085 beds (1989) to 2000 by 1995.

In addition to the clearly defined targets above, the government's policy statement

also focuses on the broader environmental and socio-economic implications of tourism development, noting that

"Controlled expansion of the tourism industry to meet national development needs is encouraged and supported in so far as the expansion occurs within acceptable limits with regard to overall size, impact on infrastructure services, local culture and values and on the natural and man-made environment, which is the resource base on which the future of tourism in Grenada depends" (Address by the Minister of Tourism at the First Tourism Planning Seminar, August 1990)(Government of Grenada, 1990b).

Thus, the major challenge facing Grenada (and tourism destinations everywhere) is how to fine tune product development and marketing strategies to meet the changing needs of the market place (maintaining market share during a period of rapidly evolving market demand and intense industry restructuring) (Vincent et al 1993). At the same time there is a pressing need to create a sustainable industry - one which will maximize economic benefits while reducing socio-environment costs.

#### 1.1 AIMS AND OBJECTIVES

The research will examine whether it is feasible to develop a tourist destination without following the vicious cycle of unsustainable development. The research focuses on whether there is an alternative to the eventual decay of the destination, and whether tourism development can be both economically and ecologically sustainable.

Little research has been done to empirically test the applicability of these ideas. As Wilkinson (1994) states,

"In theory, therefore, there are alternatives to traditional large scale international style tourism developments. There are however, few examples of microstates that have successfully developed such a tourism infrastructure beyond a modest scale."

He continues,

"further research on detailed case studies is warranted to examine whether any microstates currently use such an approach and what adaptations of policy and planning are needed to facilitate its success" (Wilkinson 1994).

With the above in mind, this research seeks to accomplish three main objectives. The first is to contribute to the development of a new theoretical framework which can improve our understanding of the evolution of the tourism industry. The majority of tourism research is concerned with case studies of economic, cultural or social impacts (Smith 1989), is discipline specific (Dann, 1988) and lacks rigorous theoretical grounding (Oppermann, 1993). This thesis draws on several areas of study (tourism geography, industrial geography, applied economics and behavioral psychology) in an attempt to add to current theoretical developments in the study of tourism.

The thesis also stresses the need to develop an integrated approach to the assessment of tourism's sustainability within an island environment. The methodology adopted is interdisciplinary - combining economic analysis and natural resource assessment with the study of consumer choice and behavior. Additionally, the study attempts to examine Grenada's responses to the structural changes and emerging trends characterizing the international travel and tourism industry.

The second objective of the study is to analyze the economic and environmental impacts of Grenada's tourism industry. The impacts on both the economy and environment (with a focus on water) associated with different tourist "types" are then evaluated. This will form the basis for the evaluation of the destination's continued growth and viability, given the demands placed on both infrastructure and environment by the present and targeted visitor segments. It is also hoped that this research will provide a basis and framework for the collection of data useful to planners from various levels of government and provide guidelines for the development of a more sustainable

tourism industry.

Finally, this thesis evaluates the applicability and use of the market research technique known as the discrete choice experiment for measuring the importance of different attributes of the tourism product to the consumer decision making process, the marketability of different product mixes, and the use of this technique for evaluating the sustainability of different tourism products.

The thesis then attempts to use the discrete choice experiment procedure and model, in association with the impact assessments outlined above, to examine the sustainability (economic and environmental) of different forms of tourism development. Some of the forms considered represent traditional "mass" tourism development while others are seen as "alternatives" to mass tourism strategies. In simple terms the approach adopted in this research allows a comparison of the sustainability of different tourism development scenarios. Alternative development scenarios can be compared for their economic robustness, market potential and environmental sustainability.

It is hoped that the interdisciplinary methodology and approach presented in the following chapters will inspire further evaluation and measurement of tourism sustainability in Grenada. In the future it will be necessary to incorporate other relevant parameters, like social and cultural impacts, in attempts to measure the sustainability of the island's tourism industry.

#### **1.2 METHODOLOGY**

The research is divided into three interrelated sections: (1) an analysis of the industry's current structure and characteristics, the market segments attracted, and an examination of how the impacts of future development trajectories ("mass/conventional

vs a more alternative tourism product") will affect the industry's market place sustainability; (2) an assessment of the economic contribution of all sectors and subsectors of the tourism industry, and different tourist types, to the economic development process and (3) an assessment of the impact of different forms of tourism development on the island's water resources.

The research entailed two field survey periods. The first phase, completed during the month of August 1991 was designed to ascertain support for the research from various interested parties in Grenada. During this period, pilot surveys (expenditure and motivation, economic impact and business) were conducted to test the validity and suitability of the intended survey instruments. Ideas and opinions on the future development of the tourism industry were gathered from industry representatives, government officials and planners. Interviews were held with seventeen experts within the industry. This sample represented the major players within the industry and covered most organizations, agencies and individuals with a direct or indirect interest in the future of the tourism industry.

Acceptable attributes and meaningful levels of future development were defined using a Delphi style consensus gathering method. These attributes and levels were then used to design the discrete choice experiment. The Government and the Grenada Board of Tourism showed keen interest and pledged logistical and other non-monetary support in the form of assistance in survey production and distribution.

During the second field research period, four months were spent in Grenada beginning in January 1992. In this phase, the revised questionnaire surveys were administered. The first was designed to collect economic (expenditure) and motivational (activities, level of satisfaction, attitudes, etc.) data from a representative sample of tourists visiting the island (see Appendix 1a). With the assistance of the National

. .

Statistics office and a paid field assistant, approximately 1000 responses were received. The Grenada Board of Tourism allowed me to use another 1000 completed expenditure and motivational questionnaires (see Appendix 1b), administered during 1988. This permitted a comparison between expenditure, motivation and holiday characteristics of 1988 and 1992 visitors to Grenada.

The second questionnaire was designed to generate data on the structure of the industry and its economic contribution to the national economy (see Appendix 1c). Most of the enterprises approached during the field period were very co-operative. However, not many had audited financial statements. This resulted in extensive personal interviews and discussions. This data facilitated the construction of neo-Keynesian multiplier coefficients for different segments of the industry. A total of 75 businesses were interviewed comprising approximately 35 officially registered businesses and another 40 entrepreneurs from the informal sector.

The bulk of the information used for the environmental analysis was drawn from secondary sources, principally the National Water and Sewage Authority (NAWASA), the Physical Planning Unit and the Ministry of the Health and the Environment. The environmental impact assessment methodology, using PC Arc/info, a Geographical Information System (GIS) software package, in association with dBASE IV, has not been frequently employed in the past. Additional interviews were conducted with officials of the Forestry, Fisheries and Land and Water Resources Departments in addition to the National Parks and Beaches Authority.

The discrete choice experiment was designed with the aid of a world leader in the design of fractional factorial designs, Dr Don Anderson. The questionnaires (see Appendix 2a, 2b, 2c, 2d) based on the design were administered to potential island travelers in the Toronto area with assistance from ten travel agents. The scenarios were

developed by combining different levels of each attribute which clearly distinguished different tourism strategies, styles and approaches. The collection of 109 completed questionnaires represents a 30% response rate. This proved to be a very expensive and time consuming exercise and financial resources did not allow for an increase in the sample size. Since the main purpose of this aspect of the study is to examine the potential 'workability' of the experiment, the sample is considered adequate (Hair, 1987).

#### **1.3 THESIS STRUCTURE**

The next chapter reviews published research on tourism development in peripheral regions and island nations. The bulk of the research undertaken so far has been on case studies with an emphasis on tourism impacts, especially social and economic. The chapter begins with a review of the literature on these traditional impact studies. It goes on to look at two common frameworks which have been employed to study tourism's impacts and their relationship to regional development. The application of dependency theory (World system paradigm) and the product life cycle (Diffusionist paradigm) to tourism studies is then analyzed. I show that despite their undoubted merits these theoretical approaches lack a certain degree of explanatory power. The degree to which these approaches have helped us understand tourism's role as a vehicle for economic, social and cultural development is then discussed, followed by an overview of our ability to understand tourism's role as a potential generator of sustainable development.

Chapter 3 seeks to understand the tourism industry from the perspective of a broader theoretical framework. It begins with an overview of the changing structure, form and functioning of the tourism industry. This is followed by an analysis of a small but growing body of tourism theory based on the 'flexible specialization' and 'regulation school' approaches. By viewing the development of tourism from within the new political economy frameworks, the impacts of tourism development can then be placed within the

broader setting of societal and economic change. After assessing the contributions and weaknesses of these new approaches, a revised framework which allows a more holistic and less deterministic examination of tourism related impacts is proposed. It is argued that this approach, can lead to a better understanding of the prospects for attaining sustainable tourism development within island microstates.

Chapter 4 presents the case study. After a brief introduction, the country's background is presented followed by an in-depth analysis of the state of the economy. It is determined that the country is in poor economic health and the prospects for recovery in the near future are limited. It is shown that tourism has been and will continue to be the main sector in terms of foreign exchange earnings, job creation and infrastructure development. The chapter continues with a look at the resources that form the base of the tourism industry in the country.

Chapter 5 presents the results of the market analysis using both revealed (actual choice) and stated preference survey approaches. The former uses the data collected within the expenditure surveys (1988 and 1992) to determine the changes in visitor characteristics, activity patterns and satisfaction levels over the period. Market segments are then identified using cluster analysis. Following a short review of the methodological approach, the results of the stated preference survey in the form of a discrete choice experiment are then presented. This is then followed by an examination of the appropriateness of the experimental approach and the implications of the findings.

•

The chapter continues with an outline of the utility associated with each level of the selected attributes and provides an example of the use of the method in assessing choice probability of different tourism destinations from what is considered a "mass/conventional" to an "alternative tourism" development strategy. The implications for the marketing and promotion of the particular destinations, with different attribute combinations or proposed development scenarios, are then highlighted. The chapter concludes with some ideas on the future use of the approach in estimating the sustainability of proposed destination developments.

Chapter 6 looks at tourism's economic impacts on the island economy, employing a simplified "ad-hoc" multiplier analysis. The contribution to foreign exchange, income and employment generation is then analyzed on the basis of tourists' country of residence and type of accommodation. The chapter further focuses on the impact of different tourist types determined on the basis of the cluster analysis discussed above. The results of both the motivational and expenditure surveys are analyzed, presented and discussed.

Chapter 7 analyzes the environmental impact of tourism development within the Grand Anse watershed with a focus on the production, distribution and use of water within this the most densely populated tourist area on the island. The Arc/Info package, a Geographical Information System (GIS), was used to distinguish the impacts of different types of tourist and associated tourism development. Firstly, the methodology is discussed and the choice of case study outlined. The results are then discussed and the implications for future tourism development are analyzed.

The major findings of the research are summarized in Chapter 8 and the implications for developing a sustainable tourism product are highlighted. In light of these findings, some appropriate policy measures are suggested. The thesis concludes by suggesting some potential areas for future research.

# CHAPTER 2 TOURISM AND DEVELOPMENT: A LITERATURE REVIEW

#### 2.0 INTRODUCTION

This chapter begins with a brief review and critique of 'traditional' tourism studies which have focused on the economic, cultural and environmental impacts of the industry. I evaluate the literature on the impacts of tourism development in island microstates and examine the degree to which this work has provided guidelines for the establishment of 'sustainable' forms of tourism. I contend that most of the research has focused on the beneficial economic impacts of tourist flows to host societies although in recent years increasing attention has also been paid to the negative socio-cultural and environmental impacts of the industry's growth. In particular, I highlight the limited integration that has occurred between the three distinct areas of impact analysis. Little research has measured the 'total impact', or in other words, how economic, societal and environmental costs and benefits are balanced in the tourism development equation. There has been even less attention paid to evaluating the overall 'sustainability' of tourism development.

I also focus on the lack of theoretical underpinning found in many of these impact studies and then move on to analyze two key frameworks that have emerged during the past two decades: dependency and diffusionist approaches. I outline the strengths and weaknesses of these approaches in an attempt to better understand the tourism development process. Despite their undoubted merits, these theoretical approaches lack a certain degree of explanatory power in the context of sustainable tourism development.
Finally, the widely promoted concept of 'alternative' tourism will be examined in light of the claim that it may be a more sustainable form of tourism development. The idea that tourism destinations must follow a cycle of dependency and stagnation will be addressed in light of the above concepts. I then move on to directly address the issue of sustainable tourism development.

### 2.1 TOURISM IMPACTS

This section critically appraises the various components of impact analysis focusing on the literature dealing with economic, socio-cultural and environmental impacts.

#### 2.1.1 Economic Impacts

There is no doubt that tourism has major effects on the economies of destination areas. Most research emphasizes the economic benefits which accrue to destination areas (Zinder, 1969; Archer, 1977; Milne, 1987a; Fletcher, 1989) while sometimes ignoring or refusing to report on the full cost.

A common theme of economic analysis applied to tourism has been the tracing of economic benefits that filter through a local, regional or national economy as a result of tourist expenditure (Archer, 1977; Kottle, 1988; Milne, 1987a, 1990a, 1992; Seward and Spinard, 1982). The process of describing and estimating the extent of these primary and secondary income flows is commonly called a "multiplier analysis" (Archer 1977; Liu and Var, 1982b; Milne, 1987b).

Initially, some impressive claims concerning the multiplier effects of tourism were put forward for both the Pacific (Clement, 1961) and the Caribbean (Zinder, 1969). These contributed to the early optimistic views of tourism's role in economic development. One of the first detailed studies of the Grenada tourism industry, commissioned by the Organization of American States (OAS, 1977), clearly supported the view that "well channelled growth in the tourism sector will support sound development of the overall economy" (OAS, 1977: 34).

It was discovered later that many early multiplier estimates in the Caribbean were grossly exaggerated. Other writers (Levitt & Gulati, 1970; Archer, 1988, 1989; Archer and Fletcher, 1987, 1988; World Tourism Organization, 1986) advanced much lower multipliers. Much of the early confusion in the literature arose from a failure to recognize that different types of multipliers exist, that different methodologies can be used, that scale is important and that different economic contexts will give different results (Pearce, 1989: 206; Archer and Fletcher, 1988).

A major reason for the differences between the final value of tourist multipliers in various countries and regions is the leakage caused by expenditure on imports. Hence, it is important to realize that significant gains can be obtained by minimizing the use of imports to meet the demands imposed by the growth of tourism. Emphasis should be placed on strengthening the linkages of weakly linked sectors and encouraging, where feasible, sectors that exhibit strong linkages with the local economy, are labor intensive and add value to any products sold.

Multiplier approaches do, of course, suffer from a range of common problems. It is, for example assumed that linearity will hold for purchases between enterprises both inside and outside the region, so that the marginal propensity to import does not alter over time (Henderson and Cousins, 1975: 126). Although it has been recognized that increases in the disposable income of households is often accompanied by a greater prosperity to consume imported goods linearity in domestic consumption is also assumed. A further assumption is that the ratios with which income and employment are generated from turnover remain constant (Henderson and Cousins, 1975). Multiplier analysis also assumes that supply is elastic throughout the economy, i.e. that increases in demand for services can be met by purchases from the previous suppliers.

Despite their widespread use during the past two decades, there have been few attempts

to move linkage and leakage studies beyond the traditional bounds of income, employment and government revenue generation at the national or regional scale (Archer, 1993). It is likely that future advances in linkage and leakage studies will occur in two areas: (I) there will be attempts to improve the sophistication of models that measure the macro-scale impacts of tourism; (ii) perhaps more importantly there will be attempts to develop models that can more effectively demonstrate the local or community level economic impacts of tourism and identify more clearly ways in which economic linkages can be maximized while leakages are reduced (Yee, 1993).

A critical issue, in the case of microstates, is whether the economic impact results for one island can be compared to other nations and used in projecting benefits for another state. This is a very common practice in measuring the economic benefits derived from tourism in the Caribbean. For example, multipliers derived from studies carried out in Barbados and Bahamas (OAS, 1977) have been used to estimate expenditure patterns and income generation for Grenada (Grenada Tourism Development Plan, OAS, 1977). This is particularly problematic as the structure and ownership of Grenada's tourism industry, together with the island's clientele, are significantly different from that of the other islands - especially Barbados and the Bahamas.

Perhaps the most important weakness of economic impact studies is, however, the limited attention that has been paid to the direct and indirect negative economic impacts of tourism, including: inflation, increased food and land prices, water shortages and transport delays (Fleming and Toepper, 1990). Other negative economic impacts involve the construction and maintenance costs of tourism related infrastructure such as parks, visitor information centers and government's expenditure on marketing and promotional programs.

The opportunity costs of tourism development have also received scant attention. For example, little is known about the ways in which local involvement in tourism will affect people's involvement in other formal and informal sector economic activities. At the same time little is known about the opportunity costs associated with direct involvement in the tourism industry (Wenzel and Milne, 1990, Grekin and Milne, 1995).

Perhaps the most important gap in the economic impact literature has been the lack of attention paid to the ways in which economic growth and development will affect the sociocultural and physical environment of island micro-states. This is a very real problem in many Caribbean island microstates, as economic growth depends to a large extent on the natural and cultural tourism resource base (Williams and Shaw, 1988; Barbier, 1987; Milne, 1990a).

#### 2.1.2 Socio-cultural Impacts

According to Wolf (1977: 3), socio-cultural impacts are 'people impacts'. In contrast to the more common economic impact studies, much of the social and cultural impact research has focused on the costs of tourism development (Pearce, 1989: 216). Recent research, however, has tended to be more balanced, acknowledging both the positive and negative impacts of tourism development on societies or communities (Weaver, 1994).

During the 1970s, a number of researchers examined the socio-cultural impacts of tourism in microstates both in the Pacific (Farrell, 1970; Finney and Watson, 1977) and the Caribbean (Bryden, 1973; Perez, 1975; Lundberg, 1974). The research was largely concerned with the nature of the contacts between host and guest and with the consequences of these contacts. Most of the studies tended to be descriptive and usually lacked a strong theoretical base or analytical foundation (Dann, 1988). The basic dichotomy of 'host and guest' popularized by the comprehensive anthropological volume of that name (V. Smith, 1977) was generally accepted, though Jafari (1982) has proposed a tripartite cultural division: distinguishing between the broader imported culture associated with the guests and a more specific 'tourist culture' which (pg. 57) "refers to a way of life practised by tourist while traveling".

Many of the social and cultural impacts (costs and benefits) which tourism development

may create are summarized in Table 2.1. Tourism may, for example, lead to occupational changes and the transformation of values. Tourism very often impacts upon value systems, individual behavior, family relationships, moral conduct, creative expressions, traditional ceremonies and community organizations and may, as a consequence, destroy much of an island's way of life.

## TABLE 2.1 THE SOCIO-CULTURAL IMPACTS OF TOURISM POTENTIAL BENEFITS

- 1. Opportunities for social mobility
- 2. Exposure to other cultures
- 3. Revival of traditional art and crafts
- 4. Restoration of sites and monuments
- 5. Increase in community self awareness
- 6. Improvement in social facilities

## BENEFITS OR COSTS

- 1. Altering settlement patterns
- 2. Changing economic structure /occupational structure
- 3. Changing demographic structure
- 4. Changing social structure-roles of sexes, class based structure
- 5. Demonstration effects changes in consumption

SOCIO-CULTURAL COSTS

- 1. Overcrowding of infrastructures
- 2. Negative demonstration effects
- 3. Employment inequalities may cause friction
- 4. Potential increase in undesirable activities
- 5. Erosion of indigenous language and social norms/values
- 6. Commercialization and debasing of art forms

Source: Milne(1990c)

Two differing schools of thought and bodies of evidence are put forward by researchers on the impacts of tourism development on host societies (Smith, 1977). Tourism is held by some



observers to have a corrupting influence, brought about by the cheapening of artistic values or the commercialization of local traditions and customs (Watson and Kopachoevsky, 1990). Other writers suggest that tourists can have a strengthening and stimulating effect, either by reawakening interest in a society's own culture or by simply supporting the cultural festivals or museums by their presence and/or entrance fees (Nettleford, 1990). While each of these impacts is clearly evident within the diverse and distinct South Pacific and Caribbean cultures, it is however, difficult to determine whether tourism is the sole cause of these trends. Very little detailed research has been undertaken on these issues in island microstates (Mings, 1985, 1988).

While few studies suggest ways of measuring the socio-cultural impacts of tourism, one of the better known frameworks was developed by Doxey (1976). He suggested that the existence of reciprocating impacts between outsiders and residents may be converted into varying degrees of resident irritation. The "irritation index" follows a simple temporal framework from a level of euphoria which accompanies initial tourist arrival through to antagonism as tourists come to over-run the traditional society. The level of irritation arising from the contact between hosts and tourists will be determined by the mutual compatibility of each, with the assumption being that even with seemingly compatible groups, sheer numbers may generate tensions. Clearly the type of tourist attracted to the island will play a major role in determining the level of socio-cultural impacts (Plog, 1973). Mass tourism, for example, as promoted on the islands of Barbados and Antigua may lead to much greater irritation to the host population than "alternative or eco-tourism" promoted in Dominica and Montserrat (Weaver, 1993; McElroy and Albuquerque, 1989a).

Another framework to measure irritation and saturation was developed by Hills and Lundgren (1977). In a somewhat similar fashion to Doxey, an irritation index is proposed. However it is based on the ratio of tourists to local population and available land space. Hills and Lundgren (1977: 264) note, however, that it may be discovered that "even when locals are outnumbered 10 to 1 during peak months there is little dissatisfaction, because tourism may be

the mainstay of the economy as in the case of Barbados and the Bahamas". There has been very little use of the irritation index in recent research although the Caribbean Tourism Organization in their annual statistical report included, for the first time, tourist penetration ratios (after Doxey) and tourist density ratios (after Hills and Lundgren) for every island destination in the region (C.T.O, 1989).

The socio-cultural impact studies that have been conducted to date are open to a range of criticisms. Attitudinal surveys have been the common method of addressing a range of sociocultural impacts. While such surveys can yield useful information on the types of impact, it must be remembered that what is being recorded is the respondent's perception of those impacts and these may or may not accord with reality. Secondly, apart from a few marketing surveys in which potential tourists are able to identify their reasons for travel to the islands, there is little fundamental research into the subconscious world of motivation (Dann, Nash and Pearce, 1988).

Most importantly, we again witness a lack of attention being paid to economic and environmental issues. For example, relatively little work has been conducted on the way in which local participation in the economic structure of tourism can affect attitudes toward tourists. MacNaught (1982) argues that the ability of local people to participate in the industry as owners as well as employees is an important factor determining hostility to tourists. Thus, a foreign controlled industry may lead to greater levels of social disruption. Similarly, little work has been conducted on the ways in which new income opportunities affect the role of women in societal settings where they have been traditionally excluded from formal sector economic activities (Collier, 1989).

Although it is well known that many of the indigenous peoples in small island states lead lives that are intimately intertwined with the environment, there have been virtually no attempts to study how environmental degradation resulting from tourism development may affect societal or cultural norms. Thus, we are left with an incomplete picture of the socio-cultural impacts of tourism development and a reduced ability to plan for the industry's successful development.

#### 2.1.3 Environmental Impacts

The literature on the environmental impacts of tourism has suffered from similar conceptual and methodological difficulties to those discussed above. Mathieson and Wall (1982: 94) summarize these difficulties as follows:

- \* Research on the impacts of tourism is topically uneven.
- \* Most studies refer to the effects of tourism in particular environmental components (beach, vegetation, coral reefs etc.) rather than broader systems.
- \* Much of the research has been limited to "after the fact" analysis.

As the economic potential of tourism has become more widely recognized, the preservation of the physical environment has come to be viewed as an investment. In other words, there are compelling economic as well as social reasons for planning and development authorities to concern themselves with environmental issues (Cohen, 1978; Dahl, 1980; Peace, 1980, 1986, 1989). Assessment of the environmental impacts of tourism is particularly important because island microstates are often characterized as being extremely fragile (McEachern and Towle, 1974). Most studies so far have focused on the impacts that result from tourism's use of marine and coastal resources. This is not unreasonable since the type of tourism promoted by most of these islands is winter beach tourism (Jackson, 1986; Potter, 1993). A summary of some of the various environmental costs and benefits that can result from tourist development is presented as Table 2.2 attached.

On the positive side, tourism can be credited with extending environmental appreciation-providing an incentive for conservation and the economic means through which to establish national parks and nature reserves (Travis, 1982a; Pearce 1986; Lindberg, 1991.). There is also a growing reliance on tourism to finance the many conservation and preservation efforts undertaken in microstates (Van't Hof, 1989; Geoghegan, 1992; Dixon and Sherman,

1993; Butler, Hvenegaard & Krystofiak, 1992).

## TABLE 2.2 THE ENVIRONMENTAL COST AND BENEFITS OF TOURISM

#### POTENTIAL BENEFITS

- 1. Environmental protection legislation
- 2. Awareness of the importance of conservation
- 3. Extension of environmental appreciation/pride

#### POTENTIAL COSTS/PROBLEMS

- 1. Pollution of air, water and land
- 2. Crowding and congestion
- 3. Damage to natural resources, resource depletion
- 4. Loss of land for other uses
- 5. Loss of flora and fauna
- 6. Architectural/aesthetic pollution
- 7. General impact on ecosystems e.g. reefs Source: Milne 1992.

There is evidence that tourism has been an important stimulus to conservation both in the Caribbean and the Pacific (Jackson, 1990; Holder, 1988; Nettleford, 1990). A number of conservation projects implemented within the Caribbean region area have proven to be financially self supporting mainly because of tourist visitation. Particularly impressive are the financial returns obtained from the Nelson's Dock Yard National Park, Antigua (Ferrance and Russel, 1992), the Bonaire Marine Park, and Virgin Islands National Park (Dixon, Scura and Van't Hof, 1993).

Tourism has been responsible for the introduction of administrative and planning controls which have been adopted in order to maintain the quality of the environment and to ensure the provision of satisfying experiences for both tourists and locals (Ishmael, 1991). Thus, on some occasions, tourism has led to the conservation of natural resources which have important educational or ecological values. This is evident through the development of a number of projects like the national parks projects of Dominica, British Virgin Islands (BVI) and the U.S. Virgin Islands (USVI).

Nevertheless, there is little evidence to indicate the widespread existence of a symbiotic relationship between tourism and the physical environment (Pearce, 1981; Matheison and Wall, 1982; Jackson, 1984). The activities of tourists can combine to produce major impacts on islands' near shore and inland ecology (McEachern and Towle, 1974). Archer (1985), for example, describes the three most serious environmental problems caused by tourism in Barbados as being coral change, beach sand loss and the contamination of coastal waters.

The major factors determining the degree of tourism impact on the physical environment are, according to Cohen (1978: 215): the intensity of tourist-site use; the resilience of the ecosystem; the time perspective of the developers; and the transformational character of the development. While the literature describing environmental impacts is relatively large, what is lacking is an agreed methodology to evaluate and measure these impacts once they are identified, and to predict potential impacts of proposed development projects.

It is argued by some that the protection of environmental quality should be treated as an "internality"- as a cost of doing business (Barbier, 1987; Daly, 1986; Pizzey, 1989). Great efforts are being made to develop econometric models to try to internalize the environmental cost of resource consumptive projects. However, these sophisticated models make so many assumptions that they do not often reflect reality. This has been the experience of the nations of the Organization of Eastern Caribbean States (OECS) which, through their Natural Resources Management Unit (NRMU), developed an econometric computer based model in an attempt to integrate ecological, social and economic considerations into the region's development planning frameworks. Six years later, despite the technical assistance provided by the consulting group Environmental and Social Systems Analyst Ltd. and the University of British Columbia, an easy to use and functional model is still not in operation. Many attempts have been made to relate environmental impacts to visitor numbers and/or activity. Indeed, a concept much favored in attempts to provide a framework for environmentally sound development is that of carrying capacity (Romeril, 1989; 205). The concept of a threshold level of tourist activity beyond which overcrowding, congestion and negative environmental effects will occur has obvious attractions (Jackson, 1986; Manning and Dougherty, 1994). However, while the theory may be easy to conceptualize, the practical reality leaves much to be desired. A carrying capacity value is exceedingly difficult to quantify, not least because no single typology of tourism nor of environment exists. There are, however, examples of the successful implementation of such practices in the coral reefs of the Virgin Islands (Wilkinson, 1989: 205). It must also be stressed that strong government support and rather sophisticated infrastructure is often necessary to implement certain carrying capacity approaches.

Research in tourism-related environmental impact assessment (EIA) is still relatively immature (Green, Hunter & Moore, 1990). The subject area is characterized by a complex set of interactions and impacts. Mainly because of this complexity and the relative immaturity of the discipline, the research literature is fragmentary, with little evidence of a coherent focus having developed (OECS-NRMU, 1991). Traditional EIA has tended to place emphasis on the exact monitoring of the environment and studies have involved large inputs of data. This approach presents several problems for tourism impact studies mainly because of the costs and time scale involved. No indication is given of the relative importance of each of the environmental impacts under consideration and the non-comparability of the data produced often means that it is difficult for policy makers to adopt a balance-sheet approach which will allow positive impacts to be traded off against negative. Because of these factors, there are very few examples of thorough EIA's being attempted in the relatively poor microstates.

Again, there have been few attempts by those studying the environmental impacts of tourism to relate their findings to broader economic and societal concerns. Given the importance of the physical environment to tourism development in most small islands, it is easy to see why

there must be some attempts to redress the lack of a more holistic approach to understanding the impacts and development of tourism.

#### 2.1.4 Summary

As tourism grows it will inevitably leave a range of economic, environmental and social impacts in its wake. Until recently, however, attention has concentrated on the more obvious economic impacts with comparatively little consideration being given to environmental and sociocultural consequences. Very few writers have actually attempted to place their impact studies within the broader context of overall national development (Britton, 1982, 1987) and still fewer have attempted to address issues of sustainable development. These contributions have also been of relatively limited use in helping us to understand the broader processes that can influence tourism's impacts. They are largely descriptive accounts, which do not emphasize how the type and scale of tourism characterizing a destination is directly linked to broader processes occurring both within and beyond the island or region. In simple terms, these studies largely fail to consider the historical, political and behavioral processes which determine the way in which tourism develops and how the industry interacts with regions and communities (Britton, 1982; Lea, 1988; Pearce, 1989). It is only within this broader context that the impacts of tourism can be fully understood, especially in the case of island microstates, with their dependent open economies and limited development options (Wilkinson, 1989). I now go on to look at some of the most common frameworks adopted by those seeking to link tourism to broader themes of destination development.

## 2.2 KEY THEORETICAL APPROACHES

Many of the theories and models that attempt to explain the process of tourism development are based on the premise that mass tourism is the 'crowning height' of tourism's

evolution as an industry; with companies maximizing profits through economies of scale and tourists fulfilling their wanderlust cheaply and efficiently. Many of these frameworks imply that the high environmental costs associated with the inevitable rise of mass tourism provide the industry, and the regions that rely on it, with little prospect of sustainable economic development. Two broad theoretical frameworks have influenced tourism researchers' attempts to understand the tourism development process in the 1970s and 1980s: dependency approaches (Britton, 1982; Hills and Lungren, 1977; Hoivik and Heiberg, 1980; Husbands, 1981), and diffusionist approaches including the TACE (Butler, 1980; Christaller, 1964; Gormsen, 1981; Miossec, 1976; Plog, 1973; Schlenke and Stewig, 1983; Thurot, 1973).

#### 2.2.1 Dependency Approaches

The need to consider how the broader structure of the tourism industry affects its specific regional/local development potential has been recognized for some time. In order to explore this theme, several writers have explicitly (Britton, 1982; 1983) `r implicitly (Perez, 1975; Turner and Ash, 1975; Hills and Lundgren, 1977) employed a political economy approach: applying dependency theory to the study of tourism impacts.

Although there are many different strands of dependency theory (Chilcote, 1974), all share the view that the underdevelopment of some nations/regions is the result of their systematic exploitation by developed nations/regions (Dos Santos, 1970; Frank, 1972). This process of 'underdevelopment' occurs through the introduction of an export economy, initially of agricultural and mineral products, which restricts the development of a self-sufficient internal economy. Foreign investors, with the collaboration of corrupt local government and bourgeoisie, dictate the direction of production to serve their interests, to the neglect of local needs. Profits are drained out of the 'peripheral' state, whose inhabitants are left in a state of backwardness.

This school of thought promotes the view that microstate tourism development, along with other foreign services, demonstrates elements of the plantation economy (Britton, 1982, 1983; Connell, 1988; Hall, 1994a), in which the islands are nothing more than another locus of production and trade, controlled by the local merchants, to serve the interest of the metropole (Girvan, 1973:17). Therefore dependency theorists tend to regard the tourism industry as yet another exploitative export industry.

[W]e are dealing with a form of economic exploitation little different from that of previous decades. If past generations created oil producing, mining, or rubber growing enclaves, ours has produced tourist resorts which are, in many cases, just as irrelevant to the long-term development of the countries concerned (Turner and Ash, 1975: 249).

Such a situation is seen to arise when governments of developing nations turn to multinational companies to provide necessary capital to finance large scale international style hotels and provide trained personnel. Similarly, companies which are foreign owned and based, such as tour operators, travel agents and airlines, "control and benefit from tourist expenditures" through their direct dealings with tourists (Britton, 1983: 5). The leading positions within the industry are therefore taken up by foreigners and the destination is marketed by companies in the developed countries. The spatial concentration of tourism development, combined with the typical standardization of the tourism product in mass tourism, results in the establishment of enclave resorts (Britton, 1982; Jenkins, 1982). This leads to a great deal of tourist expenditure never even reaching the tourism destination, a loss of local control over the overall pace and direction of development, the dominance of tourist enclaves and hence local resentment (Chib, 1980; Britton 1983; see Milne, 1995).

This view assumes that government policy will be directed towards attracting metropolitan investment, regardless of whether or not it benefits the population at large. Britton (1982) contends that:

'[D]ependency' involves the subordination of national economic autonomy to meet the interests of foreign pressure groups and privileged local classes rather than those development priorities arising from a broader political consensus (Britton, 1982: 334).

.....

Local government is seen to provide a sympathetic environment for foreign investment through lax licensing procedures, market driven labour and marketing regulations and infrastructural development funded by tax or aid dollars.

Dependency theorists have also addressed the social and cultural impacts of tourism. Erisman (1983) contends that "cultural dependency" occurs when the attitudes, beliefs and values of the society in peripheral destination regions become conditioned by those of tourists from metropolitan regions. The hosts are expected to adapt their way of life to the needs of tourists (Nash, 1989). It is further argued that tourism is an excellent means of concealing the exploitation of labour at the periphery' by merchants at the 'core'. It is seen as yet another example of the commoditization of one part of the human experience for the pleasure and entertainment of wealthy consumers from the 'core' countries (Watson and Kopachevsky, 1990).

While some aspects of this approach, such as crack-downs on crime and clean up campaigns can be positive, efforts aimed at protecting travellers' sensibilities may eventually intrude on well established and accepted local ways of life (Perez, 1975). Wood (1984) describes how national governments actively market particular parts of cultural heritage for tourists while suppressing those that it deems unappealing.

This theoretical approach can be credited with exposing many of the political and structural factors leading to tourism's often less than ideal economic benefits and as such represents an advance on previous studies which saw tourism as the unequivocal answer to the problems of underdevelopment (Bond and Ladman, 1980). It also goes some way toward accounting for the sometimes hostile attitudes of residents that arise in tourist destinations

(Bastin, 1984).

Nevertheless, the dependency approach can be criticized on a number of grounds. The theory is often accused of being "obsessed by the global level, and the world system" (Corbridge, 1986a: 43), therefore ignoring the possibility that what occurs within an underdeveloped nation/region may be just as important as those influences that originate outside its boundaries (Chilcote, 1974; Storper, 1990; Lipietz, 1993). In other words, at no point is it allowed that both development and underdevelopment in the Third World may be partly the responsibility of the Third World's own structures and agencies (Corbridge, 1986b: 20).

While Britton (1982) is clearly correct in his assertion that metropolitan-based enterprises (travel agents, tour operators, airlines, etc.) influence the success of peripheral tourist destinations and syphon some economic benefits from them, it can be argued that this view tends to overstate their influence. It fails to acknowledge the possibility that local governments, industries and individuals can exert some degree of control over their own destinies (Poon, 1988; Ioannides, 1992). Thus, "locally-affected people are not shaped passively by outside forces but react as well, at times even changing the conditions of the larger system" (Preister, 1989: 20; Grekin 1994).

Preister views the development outcome as a "negotiated process" between local groups or individuals and structural forces. As Din (1990) also notes, not all accommodation chains are in the hands of developed countries but some of the larger and most important ones in Southeast Asia and the Caribbean are owned and managed by local companies.

While Bastin (1984) acknowledges that a state of dependency has emerged in some regions, notably the Caribbean, he contends that such cases may serve as lessons for other regions so that "similar pitfalls [may be] avoided" (ibid., 79) through informed government

policy and planning. According to Bastin, the applicability of the dependency model depends on the scale and consequent type, of tourist development, which are themselves products of local tourism policy.

An example of the imposition and enforcement of local policy that addresses the over dependence on foreign investment and limit negative impacts comes from Bermuda. According to Teye (1994), Bermuda has few large hotels built directly on the beach and none higher than six storeys. A moratorium on the building of more hotel rooms is imposed while a limit on weekly cruise ship arrivals is strictly enforced. This includes no ship arrivals on Sundays and an exorbitant head tax on all cruise ship passengers. In addition, there is a strong community concern about both the overdevelopment of tourism and the resulting destruction of the environment. These are key issues that have an impact first on the island's image and more importantly its continued growth and long term prosperity (Conlin, 1994). For small island states, the model sets in as the numbers of tourists increases and local developers, unable to finance additional hotel room capacity, turn to external funding sources, thereby decreasing local control over the industry.

The embrace of mass tourism necessitates further dependence on external agents and operators to market the destination. Bastin advises that governments consider "the correct mix of accommodation" to increase numbers while avoiding mass tourism.

Nor is the involvement of metropolitan based tour operators necessarily an inappropriate policy for governments of developing regions. The destination may gain from a variety of relationships with metropolitan firms, ranging from direct foreign ownership, through to joint ventures and cooperative agreements.

The alternative types of contractual arrangement are associated with different costs and benefits to the developing country, and may be more or less appropriate to the needs of countries with

different degrees of 'development' of the local tourism industry, different social and political contexts and different policy objectives (Sinclair et al, 1992: 47).

The dependency view also fails to acknowledge the possibility that government policy may in fact be explicitly aimed at benefitting local people. For example, the Anguilla government according to Wilkinson (1994) made a conscious effort and has so far developed and implemented a successful policy and associated plan:

to enable the people of Anguilla to benefit from the development and promotion of tourism, by optimizing tourism's contribution to the national economy with particular emphasis on:

- a. The quality of life and the development of the community
- b. The enhancement and preservation of Anguilla's cultural traditions
- c. The conservation of Anguilla's natural resources
- d. The generation of employment opportunities
- e. The contribution to Anguilla's revenue (Wilkinson, 1994: 20).

A further shortcoming of the dependency approach is its failure to devote sufficient attention to the competitive strategies adopted by metropolitan based enterprises, seeing them as working toward consistent outcomes rather than as products of particular times and economic circumstances. Some commentators maintain that the key weakness of dependency theory is its determinism and essentialism, thus:

[T]t paid little attention to the concrete conditions of capitalist accumulation either in the centre or in the periphery. It therefore could not visualize that transformations in the logic of accumulation in the centre would modify the nature of centre-periphery relations (Lipietz, 1987: 2).

Those who adopt dependency theory to study tourism and development almost exclusively focus on mass tourism and therefore, only one segment of international tourism in developing countries. The approach suggests "that only a single development path exists" (Pearce, 1992:

19), rather than acknowledging that mass tourism is "only one segment of international tourism in developing countries" (Oppermann, 1993: 540). Were consumers to demand other types of tourism experiences besides mass tourism, operators would be forced to compete on another basis apart from how cheaply they can offer standardized holiday packages (see Grekin 1994). With the growing demand for alternative experiences, the community level impacts of tourism could well be different from those predicted by the models. Thus Zurick (1992) maintains that while the dependency model may be appropriate for conventional tourism development, it is less so for understanding alternative types such as adventure tourism. The monopolistic control by multinationals of international tourism becomes less significant for adventure travel where the geographic extension of the tourist periphery is extremely dynamic, fractional by nature, and heavily dependent upon small numbers of tourists constantly seeking new destinations (Zurick, 1992: 619).

Dependency theory has some difficulty, therefore, in contributing to our understanding of special interest travel since the travel experience is not easily packaged into standardized, mass produced and therefore cheap and available vacation experiences (Weiler and Hall, 1992). It must also be stressed that dependency theory has contributed little to our understanding of the extent of environmental impacts on either the "core" or the "periphery" regions associated with tourism development. While many dependency theorists (Girvan, 1991; Pantin, 1991) pay lip service to environmental impact few specific attempts have been made to incorporate environmental factors into the tourism development framework (Barbier et al, 1991; Daly, 1991). Dependency theories have been based on assumptions that capital will treat the natural resource base as if it is inexhaustible and that development is synonymous with economic growth and environmental degradation.

#### 2.2.2 Diffusionist Approaches

The two most well know theories within the diffusionist paradigm are (i) those focused

on the diffusion of activities through space, and (ii) the examination of development stages within a limited space but over time (Browet, 1979). The differences between the two lie in the emphasis of the former on the spread or spatial distribution of the tourism development effort while the latter stresses the distinct phases that occur in the growth and development of the industry in specific tourist areas.

In spite of the clear "geographic" and spatial implications of the former approach, it has, however, not been widely applied in tourism research within geography. Christaller (1964) was among the first to consider the development of tourist areas as growth poles within problematic regions with little other development potential. It was assumed that tourism would have a positive influence on the region, developing linkages with other industries and leading to a relatively significant multiplier effect on the economy. In the early years, these multipliers were estimated to be very high in island microstates (Clement, 1961; Zinder, 1969) thus influencing the idea that tourism is a quick and easy route to economic growth and prosperity for developing regions.

A number of research efforts have focused on describing the various stages of tourism development. The models stemming from this work focus mainly on predicting the evolution of tourist flows, both in terms of quantity and type. Most are directly or indirectly based on Rostow's (1960) "stages of economic growth" theory. Within tourism studies, the most popular are those developed by: Thurot (1973) who suggests a three stage model; Miossec (1976) who hypothesized five phases; and Butler (1980) who proposed a six stage model.

Generally, each model begins with the destination at the stage of a "traditional society" with only the elite or a select few able to travel to the 'undiscovered' and 'untouched' tourism resource. With the growth and popularity of the resort or destination, the number of visitors increases to include individuals from different social classes who impact differently on the destination's growth and development process. This is generally known as the "development stage". It is not, however, until the final stage of "high mass consumption" or "mass tourism" that vacations become cheap (due to economies of scale) and therefore affordable to all social classes.

Associated with the functional change of the resort is a change in its clientele. The original "elite" visitor moves on to other resorts or destinations for subsequent holidays while other types of visitors (working and middle class) come to the resort or destination (Christaller, 1964; Cohen, 1972; Plog, 1973; Thurot, 1973). Plog (1973) proposed that more important than changes in visitor numbers and social class, are changes in visitor personality and outlook as one moves along the stages in the destination development process. He suggests that along the continuum, the type of clientele attracted changes from predominantly allocentric, at the "traditional stage", to what he terms the psychocentric clientele, at the stage of "mass consumption". To many, eventual decline is inevitable in the tourism destination development process as outlined by this group of approaches. The discussion will now focus on the most widely used model within this paradigm; the Tourism Area Cycle of Evolution.

## 2.2.3 Tourism Area Cycle of Evolution (TACE)

Butler's (1980) tourist area cycle of evolution (TACE) describes the path a destination experiences as it becomes increasingly dependant on mass tourism. Unlike the dependency approach, it does not explore the ideology behind this development, but it does view core-periphery conflict as an inevitable outcome.

The tourist area cycle of evolution is based on the Product Life Cycle (PLC) model (Vernon, 1966), whose rationale is the theory of diffusion of innovation and consumer adoption (Kotler, 1988). Within the product life cycle model, the product remains largely unchanged - with the methods of production evolving, unlike the TACE in which the product (destination), not necessarily the market strategy, changes over time. The TACE envisages destination areas

receiving a small number of visitors initially, due to a lack of publicity, access and facilities (Figure 2.1). As these preconditions are fulfilled, destinations receive more tourists until the point where their "carrying capacity" is reached or exceeded, thereby destroying their attractions and causing a decline in visitor numbers and hence in revenues.

Control and source of capital, and hence benefit, is envisaged as evolving from local to exogenous actors, thereby setting up the core-periphery conflict. Local involvement in providing tourist facilities is expected to be highest early on in the process, in the "exploration" and "involvement" stages, whereafter it declines as demand increases beyond local capacity for decision-making and capital input (Figure 2.1). In these stages, contact with local residents is thus high and may in fact account for some of the attractiveness of the region.

If the region proves popular, it will proceed to the "development" and "consolidation" stages. Local involvement and control of development dwindle as more elaborate modern facilities, provided by external developers, are required for the growing numbers of tourists. Carrying capacity is reached during the stagnation stage. From there, a number of possible trajectories may emerge, ranging from decline to rejuvenation, depending on the policies of local planners.

The popularity of the model may be accounted for by the fact that it recognizes that tourism's economic, social and environmental impacts evolve over time as a result of the changing volume and type of tourism and the types of facilities that spring up to serve them. It also helps one to identify key actors responsible for individual stages in the evolution of particular destinations (Ioannides, 1992). Many studies have sought to follow the development of specific destinations in an effort to test the model (Hovinen, 1981; Cooper and Jackson, 1989; Choy, 1992; Debbage, 1990; Juelg, 1993; Haywood, 1986; McElroy and Alberquerque, 1989a, 1989b; Wilkinson, 1987).

## FIGURE 2.1 TOURISM DESTINATION DEVELOPMENT MODELS



This body of literature has created a lively debate. Several case studies conducted on Caribbean islands and elsewhere (Debbage, 1990 (Bahamas); Haywood, 1986 (Bermuda): McElroy and Alberquerque, 1989a (Montserrat); Wilkinson, 1987 (Antigua, Aruba, St. Lucia and the USVI); Juelg, 1993 (Central Alps)) have concluded that with some modification for local circumstances "the product life cycle can be applied to resort areas and tourism development". On the other hand, a diverse array of empirical research (Hovinen, 1982 (Pennsylvania); Choy, 1992 (Pacific Islands); Weaver, 1986 (Antigua)), suggests that the life cycle model is not applicable to all destinations, and in fact can be misleading in many cases.

The TACE shares many of the problems which characterize dependency theory. Several observers have noted that the scenario envisaged by the TACE is not inevitable but instead depends on the type of tourism that develops, itself a product of local policy and planning (Grekin, 1994). According to this view, impacts depend "on the extent to which the local authorities are capable of participating in the regional decision-making process, and of enforcing their own interests" (Keller, 1987: 25).

Some observers have noted that local authorities may opt to restrict external investment at the development stage, thus maintaining control (Keller, 1987; Jarviluoma, 1992; Zurick, 1992). Weaver (1991b) contends that in Dominica, which promotes itself as a nature or alternative tourism destination, mass tourism is unlikely ever to develop. This is due, in part, to local government policy which encourages accommodation development only if it is on a small-scale and is locally owned.

Locals' attitudes to tourism (Doxey, 1976) are envisaged also to deteriorate with increasing levels of tourism, from a state of euphoria to antagonism. This assumption has also been questioned (Mathieson and Wall, 1982; Pearce, 1989; Ryan, 1991b). Like dependency theory, the TACE implies that locals will passively stand by and watch negative impacts develop rather then attempting to influence the course of development (Haywood, 1986; Ryan,

1991a). Both frameworks fail to consider the possibility that by empowering locals to have input into development plans, the deteriorating cycle of evolution might be minimized or avoided (Drake, 1991; Keogh, 1990).

The original PLC model has also been accused of being essentialist. It is argued that it ignores the changes in technology, markets and macroeconomic relations; the existence of diverse types of industries and the strategic options and competitive struggles that exist in an industry's development. As Storper (1985: 269-70) notes: "[T]he parameters of industry behavior that product cycle theorists assume to be empirically constant are historically contingent". Hence, where markets are uncertain, unstable or unstandardized, the mass consumption of standardized products, which the model assumes, is improbable.

Taylor (1986: 759) similarly criticizes the PLC for its neglect of "the possibility that the market might drive production rather than production driving the market". If the preceding observations are applied to Butler's TACE, they imply that were the market for mass tourism to be less than universal, so too would the applicability of the resort cycle model. While Butler (1980) does note that not all destinations will move through all the stages he describes, he does not explicitly acknowledge the influence of market forces or corporate strategy on the model's evolution.

This criticism is taken up by Debbage (1990), who notes that the model fails to examine the dynamics of destinations "in the context of corporate strategy and competitive economic behavior" (Debbage 1990, 514). In analyzing how industrial organization and oligopoly can influence the resort cycle, Debbage (1990) utilized Markussen's (1985) notion of the profit cycle (see Figure 2.1).

The profit cycle has emerged as an important approach in attempts to understand how profitability and market structure (oligopoly) can influence the life-cycle of different industries. Markusen (1985) argues that in the early stages of the profit cycle, the emphasis is on innovation with new companies gaining substantial profits from the relative 'newness' of their product and the absence of competition. When the resort moves into the "development or takeoff phase", in which it becomes well established, and begins to generate larger numbers of visitors and a high rate of repeat travel, the firm's strategy will likewise be changed. The strategy now turns from an emphasis on product design and market outreach, to one of more efficient management strategies (Markussen, 1985: 32).

At the later stages of the profit cycle, Markussen (1985) proposes that the competition will become intense and the market saturated. She suggests that at this point, the key firms will react by buying out the smaller, less profitable enterprises creating an oligopolistic situation. The strength of this approach is the consideration of both the internal and external concerns in the evolution of the resort cycle. This, however, will eventually lead to greater vulnerability of the destination to the ill effects of the firm's strategy.

For these resorts, the emphasis will be on competitive stability and market share, at the expense of innovation and diversification. The end result may be an acute vulnerability to external economic conditions, competition and innovation at other resorts (Debbage, 1990: 525).

Under these conditions, a downward turn in the resort cycle would indeed take place. The impacts on the region's development, when served exclusively by a small number of major suppliers, will therefore be directly related to the firm's management strategy. In a situation of stagnation and decline, as anticipated during the later stages of the profit cycle, the strategy will be based on competitive stability and market share, at the expense of innovation and diversity (Figure 2.1). The decline of the destination may therefore be better explained by the corporate strategies of the few firms with controlling interest, than any other local policy and planning effort. A similar shortcoming is noted by Haywood (1986). Among his several concerns is the fact that the TACE does not look deeply enough into the many economic, social and political factors which influence the shape of the cycle of evolution. Forces such as the bargaining power of the tourist industry, government policies, tourists' demands, concerned publics, and competition from other tourist destinations, all have considerable impact on the development of a tourist area and hence must be examined in order to develop appropriate policy and planning. Overall, the predictive capability of the life cycle model is very limited. At best it could be used as a diagnostic tool after the fact but the variation in growth patterns defies any attempt to generalize across all destinations (Choy, 1992: 31).

Perhaps the most critical shortcoming of both the dependency approach and the TACE, is their "failure to formulate alternative prescriptions for tourism development in developing countries" (Oppermann, 1993). Neither prescribes any way of avoiding the outcomes predicted. The fact remains that tourism represents one of the few viable alternatives for economic development for many developing regions suffering from isolation and limited resources. The following section looks therefore at the possibility of avoiding the boom-burst cycle implicit in the models discussed above.

#### 2.3 ALTERNATIVES TO MASS TOURISM

A common assumption among the theories put forward to explain the growth and development of tourism is the inevitable development of mass tourism. A growing number of commentators are however, arguing that things need not be this way. The growing interest in special interest travel, especially that focused on cultural and environmental resources, is seen to be preventing the marginalization of microstate tourism products in the international marketplace (Weiler & Hall, 1992). There are now clear signs that growing numbers of tourists are becoming much more interested in creative travel alternatives, which do not adversely alter cultural or environmental resources (Millman, 1989: 276). The travel industry is, therefore,

being challenged to produce a more imaginative and sensitive product that can help to conserve the special quality of places and communities. These 'holidays that don't cost the earth' are widely promoted as an alternative form of tourism that can prevent a destination from the inevitable slide into mass tourism - if the appropriate development guidelines are observed.

The recent literature on Caribbean destinations tends to suggest that island microstates striving for sustainable tourism development should adopt alternative forms of tourism as opposed to the traditional mass package forms. This approach has developed as the antithesis to conventional mass tourism, which has endured sustained criticism over the past 20 years on economic, socio-cultural and environmental grounds (R. Britton, 1977; S. Britton and Clarke, 1987; Bryden, 1973; Erisman, 1983; Hills and Lundgren, 1977; Lea, 1988; Tuner and Ash, 1975).

To better understand the alternative tourism (AT) concept, many authors (Butler, 1990; Weaver, 1991) have listed particular identifying variables that can be used to determine the types and styles of any particular tourism-related development. In spite of the debates on the terminology, definitions and rational for categorization, it is helpful at this point to present a framework to help us understand the distinctions. One of these, put forward by Weaver (1991), is provided in Figure 2.2.

The most appropriate way of perceiving AT is as a generic term encompassing a range of tourist strategies (e.g. "appropriate" "Eco-", "Soft", "responsible" "people-topeople", "controlled", "small scale", "cottage" and "green" tourism). Despite the evident vagueness, it is possible (Weaver, 1991: 415) to identify concrete structural traits that tend to characterize an AT-oriented destination (Figure 2.2).

According to Weaver, (1991: 415) "Deliberate" AT destinations are those that through policy and planning consciously pursue a set range of strategies (Figure 2.2) (Weaver,

•

.

## FIGURE 2.2 TOURIST TYPES AND THEIR CHARACTERISTICS

•

•

.

| <u>Variables</u><br>Accommodations<br>Spatial pattern | Mass Tourism                 | Alternative Tourism                      |  |  |  |
|---|------------------------------|--|--|--|--|
|   | coastal,<br>high density     | dispersed,<br>low density                |  |  |  |
| Scale   | large-scale,                 | integrated, smaller-<br>scale, homestyle |  |  |  |
| Ownership   | forcign,<br>multinationals   | local, family, small<br>business         |  |  |  |
| Maulat  |                              |  |  |  |  |
| Volume  | higher                       | lower                                    |  |  |  |
| Origin  | one dominant<br>market       | no dominant market                       |  |  |  |
| Segment   | psychocentric<br>-midcentric | allocentric<br>-midcentric               |  |  |  |
| Activities  | water/beach                  | nature/culture                           |  |  |  |
| Seasonality   | winter high                  | no dominant season                       |  |  |  |
| Есовошу   | 504504                       |  |  |  |  |
| Status  | dominant<br>sector           | supplementary sector                     |  |  |  |
| Impact  | high import<br>sector        | low import<br>sector                     |  |  |  |
| Profits   | repatriated                  | retained                                 |  |  |  |
|   |                              |  |  |  |  |

(Source: Weaver 1991)

.

1991). Examples from the Caribbean include: the small-hotel policy practised on the Guadeloupean out islands of Desirade Les Saintes and Marie-Galant; and the marine parks of the Netherlands Antilles (Saba) (Pearce, 1989). Much rarer are deliberate AT strategies applied to entire countries. Dominica, Montserrat and Anguilla i., the Caribbean represent such cases. A deliberate AT policy was also included for the Caribbean island of St. Vincent under the first premiership of James Mitchell (1972), although its implementation was thwarted by Mitchell's electoral defeat (Weaver, 1991: 416).

"Circumstantial" destinations appear superficially to conform with AT, only because the destination is experiencing an incipient stage of tourism that may eventually be followed by a more intensive large-scale level of development. Circumstantial AT destinations are numerous and include the present low-impact islands identified by McElroy et al. (1989b) (Figure 2.3) and a number of small islands in the South Pacific (Milne, 1992b).

Some authors (Butler 1990; Smith, V. 1989; deKadt, 1990; Dann, 1991) see AT as just another trend of the global tourism industry and argue that alternative tourism is not necessarily good (sustainable) or mass tourism necessarily bad (unsustainable). Butler (1990) points out that "claiming one form of tourism is all things for all areas is not only pious and naive, it is unfair, unrealistic and unwise". DeKadt (1990) comments that

"alternative tourism has meant many things, all of which run counter to mainstream development in western civilization. The main task ahead is not to promote alternative forms of tourism but to make conventional tourism, which we cannot do without, more sustainable" (DeKadt, 1990).

The growing interest in the sustainability of alternative forms of tourism can be most clearly seen in the number of conferences, workshops and seminars held within the last decade. These include:

0

Tourism and Environment in Caribbean Development - Port of Spain, Trinidad, December 1985 - sponsored by ECLAC/UNDP

# FIGURE 2.3

## TOURISM STYLES of SMALL CARIBBEAN ISLANDS

| Low Density<br>long-staying<br>Sub-Styles<br>Retirement<br>Part-year Residence (Winter)<br>Nature Tourism |  | Style<br>Intermediate<br>Fishing<br>Diving<br>Yacht Charter<br>Gastronomic<br>Cultural Tourism |  | High Density<br>Mass Market<br>Duty Free Shopping<br>Casino Gambling |  |
|---|--|--|--|--|--|
|   |  |  |  |  |  |

SOURCE : McElroy and de Albuquerque, 1989b.

- Environmentally sound tourism development -Barbados, April 1987- sponsored by Banff Centre, Resource Management Programme and was funded by C.I.D.A;
- Sustainable Development in the Caribbean- Jamaica, May 1990, sponsored by C.I.D.A./UNEP/and Organization of American States; and

0

First, Second and Third Caribbean Conference on Eco-Tourism, Belize City, (July 1991), Cayman Islands (1992) and Bahamas (1993). Sponsored by the Caribbean Tourism Organization and the respective Governments and funded by the European Economic Community (EEC).

These meetings were held primarily to: promote the concept of alternative tourism; to determine whether it is, or can be, made sustainable; to debate ATs applicability to different islands, and, in most cases, to develop an "agenda for action". There has, however, been little attempt to cast this work in a sound theoretical foundation so that a better understanding of the impacts of different styles of tourism can be developed.

Like "alternative tourism", the concept of sustainable tourism development is still ill-defined. The UN (1989) in an effort to operationalize the concept of sustainable development has distinguished three "types of sustainability".

- Economically Sustainable development. This addresses the question of maintaining output of welfare-creating goods and services whose production faces limited supply of natural resource inputs.
- (ii) <u>Environmentally sound and economically sustainable development</u>. In addition to maintaining output as above this includes maintaining the stock of natural resources for the benefit of future generations.
- (iii) <u>Equitable. environmentally sound and economically sustainable development</u>. This concept explicitly includes the equitable distribution of the results of

44

economic activities within and between generations.

It is argued that "equitable, environmentally sound sustainable tourism development" is the ideal goal of any sustainable development effort, however it is the most difficult concept to operationalize. Understandably, the literature on tourism impacts almost completely ignores the "equity question". The works of Murphy (1985), Renard (1991) and Sadler (1987) are exceptions in this regard - advocating the adoption of a community/ecological approach to tourism planning. Taking this approach, they argue, permits a more balanced assessment of the tourism industry and its impacts, since it involves the interests of many groups within one setting. The basis for this argument is that the natural resources of a community (both physical and human) are often the raison d'être for the industry and that stewardship of such resources is essential to its long-term success and survival (Murphy, 1985). This research attempts to develop a framework for operationalizing microstate tourism development in an "environmentally sound and economically sustainable" manner.

There is an urgent need to seek a better understanding of changes in the structure of the tourism industry, tourist behavior and destination development processes. Given the inability of the frameworks discussed above to deal with these issues, one is forced to look to other theories and a more integrated methodological approach. Without the necessary theoretical foundation and information base, the planning and management of sustainable tourism development will undoubtedly become an exercise in frustration. The following chapter seeks to develop a more appropriate theoretical framework to help understand and explain the current changes occurring within the tourism industry. It also provides a brief outline of the integrated methodological approach adopted in the thesis.

# CHAPTER 3 TOWARDS AN ALTERNATIVE THEORETICAL AND METHODOLOGICAL APPROACH

#### 3.0 INTRODUCTION

The tourism industry has undergone substantial growth and noticeable structural change in recent decades. The wedding of technological improvements, especially in the realm of transportation and computerization, with steadily improving living standards in much of the developed world has led to rapid increases in international travel. Likewise, many remote regions of both developed and developing nations are seeking to cash in on the growing diversification within the tourism industry creating ever higher levels of global competition.

All the evidence points to the fact that consumer expenditure on travel related services and products will continue to grow and that levels of international travel will maintain an upward trend (EIU, 1994). The real issue at hand is how effectively the tourism industry of microstates will be able to compete in the new marketplace of the 1990s, and how well those who influence the industry's performance will respond to those radical changes that are shaping the future of travel (Milne 1992a).

In this chapter, I argue that a wave of restructuring is already washing over the tourism industry. Not only is the tourism industry itself being forced to respond to a range of new problems and opportunities but government, and academics, must also redefine their image of, and role in, the changing industry. I begin with a brief overview of the changes occurring within the tourism industry, highlighting shifting consumer demand and the ways in which the industry is restructuring itself to meet the challenges brought on by the evolving competitive environment. This is followed by an overview of a theoretical approach, based on flexible specialization and the work of the regulation school, that may provide us with a better understanding of the current processes and changes affecting tourism and how they, in turn, influence regional destination development. I discuss the advantages and weaknesses of this theoretical framework. I show that in order to better understand the changes occurring in tourism, a broader and more nuanced theoretical approach is required, one which is more directly informed by the dynamics of sectoral and spatial specificity. In conclusion I outline my research approach and methodology.

#### 3.1 CHANGING CONSUMER DEMAND

Many commentators feel that we are currently witnessing a 'sea change' in tourist demand - with a growing market for more 'individual' forms of travel, specialized packages, and for a type of travel which emphasizes quality and 'self actualization' (Likorish, 1990; Jenkins, 1990; Urry, 1990). The type of holiday experience desired is also changing, with a number of writers identifying a historical evolution from rest and relaxation to entertainment to personal development (Martin and Mason, 1993; Krippendorf, 1987). Others (McDougall, 1990; Frechtling, 1987; Poon, 1988) suggest that international tourists are becoming more sophisticated in their requirements and today's traveler is not simply satisfied with a holiday by the beach but rather demands an active or more involved travel experience. The tourism industry must therefore cater to a market which is no longer simply product led but which is becoming increasingly consumer led (Milne, 1992a).

In its overview of the major trends affecting tourism during the 1990s the World Tourism Organization stresses that "consumers are demanding new, more imaginative and varied tourism products and services". They predict that tailor-made travel arrangements will grow at a faster pace than pre-packaged holidays during the 1990s (WTO, 1990: 10). This does not mean that package holidays will cease to grow - rather the nature of packages will shift toward more 'flexible' structures - providing the tourist with the ability to 'customize heir holiday experience within a certain range of choices.

## TABLE 3.1 THE THOUGHTFUL CONSUMER: SOME PRIORITIES and CHARACTERISTICS

| New personal priorities:             |  |
|--------------------------------------|--|
| Active lifestyle                     | . Physical exercise  |
| -                                    | . Mental development   |
|                                      | . Voluntary help   |
| 'Green' concerns                     | . Personal health and safety                                 |
|                                      | . Local surroundings   |
|                                      | . Global environmental problems                              |
| Reducing inequalities                | . Problems of western underclass                             |
|                                      | . North/South disparities                                    |
| Focus on quality time:               |  |
| Time valued as a resource            | . More careful choice of activities                          |
| Flexibility in work & leisure        | . In the week  |
|                                      | . In the year  |
|                                      | . In the lifetime  |
| New approach to retirement           | . A period of development                                    |
| Shift in consumption:                |  |
| The social market economy            | . Revised balance between personal and public spending       |
| Redistribution of income             | . Guaranteed minimum incomes<br>. Individual charitable help |
| Consuming with a mission             | . Positive use of purchasing power for social ends           |
| Buying for use not show              | . Rejection of status products                               |
|                                      | . Recognition of waste                                       |
|                                      | . Valuing real usefulness                                    |
| (Source: Martin and Moson, 1993: 37) | <b>J</b>   |

New values and lifestyles are emerging in the western developed world. These trends can be seen as part of a gradual transformation of western society away from a focus on conventional
economic growth and material affluence (the quantity of life) towards a set of values that put greater emphasis on 'the quality of life'. Indeed some argue that we are seeing the emergence of the 'thoughtful consumer' (Martin and Moson 1993) (see Table 3.1).

The thoughtful consumer uses both money and time more carefully, for activities and services that bring real and lasting benefits rather that superficial show. In the case of tourism it is a trend in search of the authentic; towards a 'real' and lasting vacation experience. Many others argue that there has been a similar shift in the basic values and therefore the demands of modern travelers. Urry (1990) states that the growth of tourism is a result of the consumers' need to "gaze" on other societies and places. He argues that the development of 'new' tourism results from, among other things,

...the widespread perversion of the 'romantic' gaze so that more and more people wish to isolate themselves from the existing patterns of mass tourism; the increased fascination of the developed world with the cultural practices of less developed societies; the development of the tourist as essentially a 'collector' of place often gazed upon and experienced on the surface... (Urry, 1990: 64).

This increased need to "gaze" has been associated with a change in consumer attitudes. Many argue that consumers are no longer settling for mass-produced, low quality products just because they are cheap. The 'new' consumer is demanding better quality products, more product and service variety, and better value for money (Martin and Moson, 1993; WTO 1990, 16; Welihan & Chon, 1991). Thus, many suppliers have had to re-evaluate their focus on price as the sole decision criterion for most consumers, and concentrate instead on increasing the overall quality.

Modern consumers are demanding to be treated as individuals not as a "mass". The problem is that it is increasingly difficult to have a holiday away from where the mass of the population is visiting. As a result, there has been a recognizable growth in what Lickorish

(1987; 1990) terms "mini mass-markets" that require different packages and products within the same infrastructure. He argues that changes in consumer demand represent a breakdown of the old simple annual holiday, as many consumers now travel to learn or pursue specific hobbies, to widen contacts or practice a sport. These types of specialized holidays are often booked through small, specialized travel agencies. The growth in these types of holidays has led to the growth of smaller companies that have come to specialize in particular tourism niche markets.

The future tourist will have a greater awareness of the range of tourism choices available, demand higher standards of service and value from tourist operators, and there will be a growing concern about the quality of tourism experiences (Martin and Mason, 1993; Krippendorf, 1987: WTO, 1990). Many of these changes, argues Krippendorf (1987), result from a fundamental change in society. The primary characteristic of this new society is that it is no longer based on the work ethos. Instead the primary focus is on leisure time, which has brought about a 'new' tourist who is more willing to accept responsibility for his/her action and concerned about the destinations' environment and people.

Some have suggested that shifts in consumer demand are supply led and that the tourism system is strongly manipulative of consumption levels and behavior patterns (Teoros, 1993: 33). However, despite these arguments, it is widely accepted that tourism growth and consumption levels are not purely the outcome of manipulation by image-makers (Williams and Shaw, 1994: 245).

There appears to be a significant emerging segment of pleasure travelers motivated by self actualization. It is argued by many that this segment plays an important 'opinion leader' or 'innovator' role in the marketplace (Milne, 1992a). One example of how emerging trends may spread 'down- market' is the recent growth of 'green' travel. While such demand had always existed among 'upper echelon' market segments the World Tourism Organization notes that the 1990s will see greater attention being paid by tourists, developers and tour operators, to creating

a 'greener' more 'sustainable' tourism (WTO, 1990: 13; Milne, 1992a). While empirical evidence to support these types of changes in consumer demand are difficult to find, changes appear to be occurring at an accelerated rate. Other factors influencing shifting consumer demand are however, more quantifiable. Key among these are shifts in demographics and social roles in industrialized societies. According to the WTO (1990: 8)

Changes in the demographic structure and social pattern of populations of the developed and newly industrializing countries means that, regardless of other factors, more people will have the time, inclination and income to travel.

| TABLE 3.2           |           |           |         |
|---------------------|-----------|-----------|---------|
| CHANGING POPULATION | STRUCTURE | (U.K. and | U.S.A.) |

| Groups:     | Percentage Change 1990-2000 |     |  |
|-------------|-----------------------------|-----|--|
|             | UK                          | USA |  |
| 0-4 years   | - 4                         | - 8 |  |
| 5-15* years | + 9                         | + 7 |  |
| 16-24*      | -18                         | - 4 |  |
| 25-44       | + 2                         | - 1 |  |
| 45-64       | +12                         | +31 |  |
| 65-74       | - 4                         | - 1 |  |
| 75 & over   | +10                         | +26 |  |
| Total       | +2                          | +7  |  |

\* For USA, the age breaks are 5-17, and 18-24 years.

Source: Adopted from Leisure Consultants Report 1993.

The population of many key markets is aging. For example, by the year 2031 36% of the Canadian population will be aged over 55 - up from 21% at present. More startling is the projected increase in those aged over 70, from 8% at present to over 17% by 2031 (Vincent et al, 1993). Older travelers took 17% of all Canadian trips in 1990 up from 13% at the beginning of the decade - with the increase far outstripping their population growth (McDougall and Davis, 1991). Similar trends are occurring in the US and European markets. For example, just under



one fifth of the E.C.'s citizens are aged over 60, by the year 2010 this will have risen to 23%. This trend also means that there are larger numbers of single older women travelers because of the considerable differences in average life expectancy between men and women. The segment of the population aged 45-64 years will also show major growth in the period 1990 - 2000 as the so called "baby boomers" move through middle age. This, in turn, is likely to boost the market for more 'mature family' holidays (see Table 3.2).

These older groups often have more disposable income than their younger counterparts due to access to retirement funds and their high rate of home-ownership. At the same time, the average retirement age is falling. This is resulting in more affluent, healthy and active retirees than in the past, with the types of holidays being taken becoming longer and more activity based (WTO, 1993). Retirees also have more free time than the working population and as a result are less likely to demand the rigidly timed packages that have often been the norm of 'mass tourism'.

Dual income families now easily make up the majority of family households in Canada (62% of all husband wife families in 1986 compared to 34% in 1967). On average, these families tend to display higher educational levels, have fewer children, higher disposable incomes and spend more than average on tourism related activities (Go, 1987). While the growth of paid leave entitlement and flexible working hours allows people more choice in when they take their holidays, the pressures associated with dual working structures, and the increasing pace of many working couple's lives, are making it difficult to plan 'long-stay' vacations. As a result, we are seeing the growth of shorter holidays spread throughout the year (Milne, 1992a, Vincent et al, 1993).

While 'family travel' will increase in significance continued high levels of divorce, later age of marriage, and increased longevity, combined with the marked difference in average life expectancy for men and women, mean that numbers of 'non-family' and 'single parent' households are projected to increase at a faster rate than 'traditional' family households during the next decade (Jenkins, 1990; Likorish, 1990). The singles market of the 1990s will be somewhat different from the 'swinging' category that caught so much attention during the 1970s - tending to be more 'mature' and, in some cases, family oriented (Wood, 1990; Welihan and Chon, 1991; Milne, 1992a).

## 3.2 INDUSTRY STRUCTURE AND GLOBALIZATION

There is no lack of data to support the notion that the tourism market place has become increasingly competitive in the past decade. To survive in this environment, industry sectors and destinations are forced to become more innovative and creative. In order to maintain market share, growth and profitability, two broad strategies are employed. In a move to consolidate control and ownership, firms are increasingly turning to ownership concentration through strategic alliances and mergers. At the same time, in a drive to improve operational efficiency and market share, firms are forced to adopt increasingly sophisticated technologies and innovative management techniques.

Ownership of many sectors in the tourism industry is becoming increasingly concentrated and levels of global competition are rising as domestic markets saturate and barriers to international investment continue to erode (Milne, 1992a). As a consequence, many firms are attempting to segment their markets and streamline operations. In the U.S. hotel sector, for example, occupancy rates and hotel earnings have been sliding for about 10 years (Rice, 1993). In addition to difficulties caused by price resistant customers, the recession and the downsizing of corporate America hoteliers are still feeling the impact of the construction boom of the 1980s. The American hotel industry, according to Rice (1993, 125), is in serious difficulty for,

\* While it is true that the proportion of hotels making a profit rose from 40% in 1991 to 52%

last year, 48% are still loosing money. Every night 36% of U.S. hotel beds remain empty. The biggest trouble is in the highest tier of the industry, ...But now growth has stalled in the upper tier, and bankruptcy filings are exceeded only by FOR SALE signs. Most first-class hotels companies have already slashed expenses in a frantic effort to contain costs. But they must do more to be profitable".

In this saturated domestic market, it is increasingly difficult and sometimes impossible for independents to grow and obtain a reasonable return on investment. When faced with such circumstances, the larger chains will seek to increase return on investment and profitability by investing overseas (Davis, 1987; H&H, 1987; Go, 1989b; EIU, 1990). The most recent Caribbean example is an investment by the Four Seasons, a Toronto-based operator of elegant, urban hotels on the tiny island of Nevis (Best, 1991). Recent reports indicate that because of the success of the Four Seasons "experiment" on the island of Nevis, the group is now actively seeking properties on which to develop similar operations and concepts on other "unspoilt" Caribbean destinations (Thomas, 1994).

Industry concentration is also growing with large chains commanding a larger and larger portion of total rooms and also dominating sophisticated travel distribution and reservation technologies (Pohlmann, 1994). These trends seem to be occurring in the Caribbean. Hotel ownership in Jamaica is increasingly concentrated in the hands of local (regionally owned) chains, mainly the SuperClub and Sandals groups of companies. The latter group now owns and manages at least six (>1000 rooms) resorts on Jamaica's north coast and one each on both Barbados and St. Lucia. The SuperClub Resort Corporation on the other hand owns and runs five Jamaican resorts (>1200 rooms), and has recently expanded its operations into Cuba, St. Lucia, Antigua and Grenada.

Despite the paucity of published data on Caribbean hotel performance, it has been established that the occupancy rates of the 'all-inclusive', resorts are on average 20 percent higher than traditional hotels (EIU, 1993b), and that there are plans for a 20% increase in "all-

inclusive" rooms over the next three years. It is therefore, assumed that the return on investment is higher than comparable sized, traditional hotel operations. In contrast to the acquisition trend discussed above, the "all-inclusive" hotel operators, in spite of the availability of properties for purchase or management leases in the region, prefer to build instead of acquire properties. The view frequently aired is that only those resorts which are purpose-designed have much of a chance of success. Levels of ownership concentration have also increased among travel agents, tour operators and in certain areas of the restaurant trade (Milne, 1992a).

The airline industry provides a striking example of these trends. Deregulation within the U.S. airline industry has created a hostile competitive environment, leaving very few airlines serving the Caribbean region on a sound financial base. With deregulation of U.S. air transportation in the 1970s, a flood of new entries on many routes led to price wars which brought in an immediate bonanza of cheap fares to consumers. This war produced a number of casualties, not only new airlines but some old well established "household" names like Eastern and PanAm have disappeared with others like Continental and TWA fighting for survival. The collapse of Eastern and PanAm airlines had a severe impact on many Caribbean destinations particularly Barbados, Antigua and Jamaica. American Airlines, the only major U.S. carrier still serving the Caribbean, is operating through its "hub" in San Juan, Puerto Rico.

This "hub" operation has opened up more than a dozen new American gateway cities along the eastern seaboard, across the mid-west, south-west and west coast of the country. Nonetheless, with the exception of Puerto Rico, Jamaica and the Bahamas, little advantage appears to have been taken of these new opportunities.

It is argued that the "hub" and "spoke" airline operating system creates additional delays, gross inefficiency and in part accounts for the low profitability of the U.S. airlines (Fortune, 1993). The major U.S. airlines lost billions over the past four years (Figure 3.1). Only Southwest, among the big airlines, remained consistently profitable principally because of



## FIGURE 3.1 EARNINGS OF MAJOR CARRIERS

Source: Fortune Magazine 128 (15) Dec 13, 1993

its management philosophy and mode of operation. The third most profitable international airline, British Airways, is the other major carrier serving the Caribbean region.

Caribbean airlines are all government owned and are typically unprofitable. For example, BWIA has consistently recorded annual losses, the worst year being 1987, in which the loss was \$28.2 million, while Air Jamaica recorded annual losses of \$15 to \$20m between 1987 and 1993. The Leeward Islands Air Transport (1974 Ltd) (LIAT) owned jointly by the CARICOM Governments is also in deficit (Holder, 1993: 217).

It is clear that struggling Caribbean airlines cannot continue to survive into the year 2000 without major overhaul. It is unanimously recognized that the following conditions must be met to ensure the region continues to be adequately serviced by one or more regional air carriers:

- a. the carriers must pool their human, financial and marketing resources;
- b. they must identify a partner in the market that seem likely to survive and can provide them with the capital infusion, marketing reach and management expertise they need; and
- c. the political directorate must assess the value of the Caribbean region, taken as a whole,
  to the external carriers. (Holder, 1993: 217).

A merger of the major Caribbean airlines is presently being discussed although little progress is reported (Gayle and Goodrich, 1993: 15). The sale of Air Jamaica and LIAT (1974 Ltd.) to private concerns is also being negotiated. The Sandals chain of resorts has committed U.S.\$14m. towards the purchase of 25% equity in Air Jamaica. This will make the new privately owned airline 100% Jamaican owned (Globe and Mail, June 20, 1994). There are, however, no public discussions on any merger with other U.S. or European owned international carriers but cooperation has improved over the past 2 years in the area of strategic marketing and shared reservation systems. For example, in the spring of 1992 the Caribbean Hotel Association (CHA) began a \$2 million regional tourism marketing effort, to promote the region as a single destination, with the support of companies such as American Airlines and American

and shared reservation systems. For example, in the spring of 1992 the Caribbean Hotel Association (CHA) began a \$2 million regional tourism marketing effort, to promote the region as a single destination, with the support of companies such as American Airlines and American Express (Caribbean Update, 1992, Feb. pg 2).

Levels of concentration are also influenced by the growth of strategic alliances between many larger companies - often based around a variety of frequent flyer/frequent stay programs. Strategic alliances among airlines can create waves in other sectors of the industry. The growth of ownership concentration and the development of increasingly sophisticated alliances are creating a global competitive environment that is increasingly hostile to mid-sized or smaller independent operators. For example, the alliance between Canadian Airlines and American Airlines will, in the long term, make the Caribbean islands more accessible to the Canadian market. Nonetheless, with this development the inid-size Caribbean airlines, like BWIA and Air Jamaica, will face increasing competition principally because of American's vastly superior information technology capabilities.

Another important factor is the growing dominance and sophistication of computer reservation systems (CRS). Even in its present guise, it is clear that CRS technology is generating the potential for completely new tourism services (Milne, 1992a). In the USA, the Caribbean's largest market, it is estimated that 90% of all airline reservations, 51% of hotel reservations and 68% of car rentals are booked through CRSs (Tremblay 1990; Collier, 1989). SABRE, the American Airlines system, alone handles 500,000 reservations a day and has over 45 million prices in its data bank representing 650 airlines, 21,000 hotels, 52 rental car companies and 8 railroads. As Collier (1989, 87) notes "This is not an airline booking system, or a marketing system but a huge travel distribution network". CRSs are proving to be the most profitable segment of many airline businesses - in 1988, for example, 17% of American's \$801m profit was earned through SABRE, even though CRS accounted for only 6% of total revenues (Bartino, 1990).



2

The continued deregulation of the airline industry, increasing strategic alliance activity between major operators, and improvements in the sophistication of both hardware and software, are leading to the development of 'mega-CRSs'. Indeed, a range of links has already been established between competing systems (Scocozza, 1989). While such changes allow the travel industry to improve performance and offer more customized products, the growing concentration of control over vital information flows is a cause for concern for smaller companies and/or regions, such as the Caribbean, that face difficulties linking into such systems. For example, larger hotels with the capital, hardware and knowledge to develop or tap into several systems are gaining a clear competitive advantage over their smaller counterparts who may find the cos's too prohibitive to allow link-ups to CRSs ( Pohlmann and Milne, 1993).

Recognizing the disadvantages of small properties and the importance of being on-line, the Caribbean Hotel Association (CHA) has signed an agreement with Cable and Wireless for the development of its Caribbean Hotel Association Reservation and Management Services (CHARMS). When this service became available on November 1, 1991, it linked Caribbean hotels to U.S. travel agents and tour operators as well as European wholesalers. CHARMS is committed to serving small Caribbean hotels. The system presently offers last-room availability and differentially priced blocks of rooms for many properties. It is hoped that the service will eventually be linked into one of the Mega-CRSs allowing accessibility on a global basis. (Gayle and Goodrich, 1993: 14).

Many larger companies are adopting more flexible marketing approaches and organizational structures in order to stimulate new forms of demand. These trends are particularly evident among tour wholesalers. An example comes from the mass-package market in the UK, which is one of the most sophisticated, vertically integrated and cost- competitive in the world (Urry, 1990; Milne, 1992a). By the mid-1980s, market leaders such as Thomsons were having difficulty maintaining levels of profitability. Competitive pressures had forced profit levels on a package of £270 down to only £1-2, with an average return of less than 1% (The

- 2

Economist, 1989a, 1989b; Scudamore, 1991). The homogenized products offered, the environmental destruction associated with prime 'package destinations' and an everall trend among consumers toward viewing mass packaged holidays as 'unfashionable' and lacking in quality, were hurting the companies (Milne 1992a). In 1990, Thomson and a variety of other operators announced that the era of under-priced holidays was at an end; packages were now to be based around quality (Scudamore, 1991). What followed was a cut in the total number of packages accompanied by an increase in the range of quality products (Milne, 1992a). Nevertheless, there is still obviously a large market for cheap 'mass-type' vacations (Butler, 1992; EFU, 1993a)

The accommodation sector is also segmenting its operations. Recent years have witnessed the growth of mega- resorts, spa vacations, all-suite hotels, extended stay hotels, micro-hotels and multi-use hotel complexes (Horwath and Horwath, 1937; Go, 1989b; Laventhol and Horwath, 1989; Pohlmann and Milne, 1993). There has also been considerable segmentation of the "all inclusive" type accommodation. According to Poon (1993), the Sandals and SuperClub properties operate under a dual segmented strategy.

First they are segmented as to holiday type; that is the all-inclusive holiday concept. Second, they are segmented as to holiday market, providing an authentic local Jamaican [St. Lucian] experience in the Jamaica Jamaica [St. Lucia St. Lucia] properties, or catering to couples at the Couples hotel and to the hedonist at the Hedonism resorts. SuperClub has also recently entered into the families segment of the market with its Boscobel beach hotel, offering super-nannies and a comprehensive programme for children. (Poon, 1993: 132)

This drive toward segmentation has important ramifications for smaller operators who in the part had a variety of niche markets largely to themselves. While small enterprises are surrounded by a growing demand for speciality products, they have to cope at the same time with more 'flexible' iarge firms attempting to break into these lucrative 'niches' with the aid of improved technological and managerial approaches. Mid-sized or smaller firms that do not cater to specific niches are likely to find survival during the next decade much harder than in the past (Milne, 1992a). The move toward all-inclusives and alternative forms of tourism development also has some important ramifications for local development strategies.

One final theme which should be addressed is that of quality. Today's tourists are increasingly seasoned and value conscious and if companies and tourist destinations are to compete effectively they must enhance the quality of their product - especially the level of service provided by the workforce. Front-line workers (including part-time) must be provided with the types of training that allow them to meet these demands. However, staff training will only pay off if worker turnover levels are low and there is an incentive to perform. This is placing the onus on management to be more creative in its use of the labor force. Thus the more innovative operations are introducing techniques to improve the overall workplace environment, and in particular, levels of communication between workers and management (Orly, 1988; Pohlmann and Milne, 1993). According to Schlesinger and Heskett (1991) as a new model of service is emerging, companies are being forced:

- \* to value investments in people as much as investments in machines and sometimes more;
- \* to use technology to support the efforts of workers on the front line, not just to monitor or replace them
- \* to make recruitment and training as crucial for sales clerks and housekeepers as for managers and senior executives
- \* to link compensation to performance for employees at entry level, not just for those at the top.

#### 3.3 THE INFLUENCE OF OTHER THEORETICAL APPROACHES

If we are to understand the nature and impact of the processes of change outlined above, it is clear we will have to move beyond the past theoretical frameworks that have dominated tourism research. Some argue (Poon, 1988; Urry, 1990) that tourism is facing the same kind of restructuring imperatives that manufacturing faced during the past two decades. Theories developed to explain processes of change in other sectors may, therefore, be applicable to our analysis of tourism.

An increasing array of social scientists are arguing that we are entering a period of farreaching adjustment in the way in which economic activity is organized (Scott and Storper, 1992). 'Post-fordism', a 'flexible regime of accumulation' and 'flexible specialization' are just some of the key phrases that have been used to describe the emergent socio-economic order. These radically new forms of organization are seen to stem from the exhaustion of past 'bestpractice' characterized by the dominance of large vertically integrated companies producing homogeneous products for a market based primarily on price-competition (Fordism). Market saturation, rapidly changing consumer demand, new technologies and intensified competitive pressures are seen to cause the break-down of this model, leading to the creation of a more specialized and rapidly changing market place that necessitates the use of more flexible/responsive forms of production if consumer demands are to be met. Changes in the technologies and in the organization of the production process are shown to have profound impacts on the organization of many types of manufacturing as well as service activities (Milne and Tufts, 1993).

Much of this has been inspired by Doreen Massey (1978; 1983; 1984) who focused on the relationship between the organization of production and the characteristics of particular places. Massey demonstrated that to understand the processes that produce spatially specific phenomena, like changing regional patterns of employment, it is essential to understand the basic unit of production, the firm (Massey, 1978). She argued that such shifts in demand, changes in technology and other competitive factors as those discussed earlier will force firms to adapt their scale and methods of production.

Evolving from the early work of Massey and others is a more holistic approach, sometimes known as the "new" political economy approach, that attempts to explain and help us better understand the radical economic and broader social changes being observed (Marshall and Wood, 1992). The two most commonly used bodie: of work within this framework, the French Regulation school (Aglietta 1979; Lipietz 1986; Hirst and Zeitlin, 1991) and the flexible specialization thesis (Piore and Sabel, 1984) are reviewed in the following sections.

### 3.3.1 Regulation School Approach

Researchers who follow the French Regulation School analyze advanced capitalist economies in terms of a series of distinct historical stages - each differing in production organization, patterns of consumption, and forms of state regulation. Each historical phase is characterized by a dominant regime of accumulation which reflects the relationship between production and consumption (Hirst and Zeitlin, 1991: 18; Norcliffe, 1993). Each phase also requires some form of institutional regulation in order to allow accumulation to be sustained. This is known as the mode of regulation.

According to the Regulation School, there have been four major regimes of accumulation in the history of capitalism: extensive accumulation; intensive accumulation without mass consumption; intensive accumulation with mass consumption known as Fordism; and an emergent post-Fordist regime. Fordism seems to have been a relatively prosperous era with productivity levels in manufacturing growing on the basis of shifts in organizational strategies. Based upon principles of scientific management and Taylorism (Taylor, 1947), Fordist organizational strategies revolved around mechanized moving assembly lines and the rationalized flow of materials with pre-set labor tasks embedded in a highly fragmented and rigid division of labor (Wood, 1988; Braverman, 1974; Norcliffe, 1993: 196). As productivity began to increase, a rise in the real incomes of the expanding middle class occurred. This resulted in growing markets for goods, changes in socio-demographic patterns and increased investment and growth in consumer goods (Benko and Dunford, 1991).

Some of the main characteristics of Fordism included the dominance of mass-production techniques producing standardized products through dedicated machines and deskilled workers (Benko and Dunford, 1991: 288). Mass consumption was the counterpart to this organizational 'best practice' - allowing the absorption of the large standardized output of Fordist producers. Relative labor peace was achieved by linking wage increases to productivity growth while rising levels of consumption were reinforced by the rise of the Keynesian welfare state (Schoenberger, 1988; Leborgne and Lipietz, 1991: 30).

According to Regulation theory, the crisis which led to the demise of Fordism was caused by two key factors. The first was a supply-side crisis caused by decreasing rates of profit. The second was a demand-side crisis caused by the growing internationalization of production which resulted in a weakening link between national growth and demand (Benko and Dunford, 1991: 288; Hirst and Zeitlin, 1991).

Jessop (1992: 40) claims that the new 'post-Fordist' or 'flexible' regime of accumulation will revolve around the exploitation of new technologies; new forms of competition and internationalization; new kinds of corporate organization which combine financial and strategic centralization with various forms of vertical disintegration; new types of state intervention in economic and social matters; and new forms of labor relations and labor market use.

#### 3.3.2 Flexible Specialization

This closely related body of theory is drawn from the work of Piore and Sabel (1984) who argue that the 1970s and 1980s represented a major turning point in industrial history when mass production began to be abandoned in favor of flexible specialization.

Working from a regulationist-like explanation of the economic slowdown - the growing asymmetry between consumption patterns, production techniques and regulating institutional

mechanisms - Piore and Sabel set out to investigate whether or not a new economic development model was unfolding. But, unlike the regulation school which tends to focus on the macro-level aspects of post fordism, their search for a renewal model is rooted in emerging trends in corporate behavior at the micro-level.

The authors argue that mass production, the dominant form of production throughout most of the 20th century, is in terminal decline due to a number of regulatory and internal production problems. Primary among them are the increasing difficulties in maintaining productivity growth via the use of scale economies, and an increasing saturation and fragmentation of consumer markets (Teague, 1990: 34). Flexible specialization strategies were heralded for encouraging the growth of smaller, more flexible firms that would provide a greater variety and quality of goods and service, and would mainly employ skilled craft workers (Amin, 1989).

Flexible specialization is considered a modern form of craft production. It is characterized by highly volatile and segmented markets and therefore, flexible firms must be capable of switching almost automatically from one market to another. It is also characterized by new technological methods and innovations in order to achieve the necessary flexibility to survive (Coffey, 1992). Furthermore, there is constant interaction between enterprises and external economic or commercial networks that allow for increased innovation without harmful forms of price competition. Finally, workers under flexible specialization methods are required to be multi-skilled and highly adaptable (Gertler, 1992).

Recently though, commentators have argued that flexible specialization will also be characterized by the continued existence of large, oligopolistic firms alongside smaller enterprises (Martinelli and Schoenberger, 1991; Milne and Tufts, 1993). The keys to flexible specialization lie in the capacity and intelligence of companies to reap synergies, systems gains and scope economies; and their possession of production and organizational flexibility - characteristics which are not at all specific to small size (Poon, 1990a: 109). In addition, advances in technology have allowed large firms to be more flexible in their range of output without losing their economies of scale (Martinelli and Schoenberger, 1991). Thus, the quality and caliber of managerial personnel, the development of network economies, competitive strategies, innovations, and the development of new technologies are far more important to the success of flexibly specialized firms than their static endowments of tradition and small size (Poon, 1990a).

The organizational structure of flexible firms is primarily characterized by new inter-firm relations. There is increased use of networking, subcontracting and segmentation strategies among firms of all sizes to expand and diversify their product lines. Furthermore, flexible firms are aware of changes in demand and therefore they tend to provide a wider variety of products with shorter life cycles. Finally, competition among firms is no longer based only on price, but is also influenced by innovation, quality and diversity.

#### 3.3.3 Discussion and Critique

Regulation theorists maintain that, although Fordism has been in a crisis both as an accumulation regime and a mode of regulation, it is unlikely to be succeeded by the types of flexibly specialized craft production promoted by the flexible specialization school.

Despite their different interpretations of key issues, both of these 'new' political economy theories share many common characteristics. Both are based on the notion that a radical process of industrial restructuring and societal change is occurring, with organizational 'best practice' being superseded by new, more flexible forms of organizational activity (Milne and Tufts, 1993; Milne, 1990a; 1990b; 1992; Jessop, 1992). There has been much criticism and debate concerning the ability of these 'new' political economy theories to address the processes of change affecting contemporary capitalism.

The first set of criticisms revolves around the issue of whether Fordism ever existed as a dominant regime of accumulation during the post-war period. Some argue that this is an inaccurate portrayal of the real situation since mass assembly line production has never accounted for the bulk of either manufacturing output or employment in the industrialized world (Sayer, 1989; Sayer and Walker, 1992). Furthermore, the evidence of the spread of Fordist principles to developing nations and other sectors is relatively weak (Tickell and Peck, 1992; Hudson, 1989; Sayer and Walker, 1992, 195). Finally, mass unionization, the productivity wage and the state-funded social wage did not produce any discernible jump in mass consumption in the mid 20th century; wages and mass consumerism had expanded at a relatively steady pace for the preceding century or more (Sayer and Walker, 1992: 195).

A second set of criticisms concerns the 'crisis' of Fordism (Sayer, 1989; Amin and Robins, 1990; Hudson, 1989; Teague, 1990; Hirst and Zeitlin, 1991). Evidence of a relative decline in rates of output and productivity in mass production industries is inconclusive, with some classic mass production industries growing rapidly while others have been declining. Furthermore, some commentators argue that the decline in mass markets may not be the result of inefficien. 'as in Fordist production methods but could be due to exogenous factors, such as sagging demand, penetration of national markets by the different products of foreign producers, and new product innovation in general (Sayer and Walker, 1992: 197; Gertler, 1988; 1989; 1992).

Other commentators are of the opinion that there is not enough evidence to claim that the 'new' flexible regime of accumulation represents a clean break from past structures but is just another variation of previous forms of industrial organization. Amin (1989) has pointed out that some of those theorists who have adopted the regulation approach are wary of describing the emerging regime of accumulation as something completely new, while others are equally careful not to predict any specific organizational outcomes of the changing environment (Lipietz, 1987; Leborgne and Lipietz, 1988). Thus, what may be emerging are new stages of the old form of

industrial organization rather than a single trend towards a 'new' political economy (Lovering, 1990; Gertler, 1988; Hudson, 1989). Indeed, mass production and flexibility need not be considered as alternatives; mass producers are able to increase levels of flexibility and decentralize their operations while smaller firms often improve their efficiency through the introduction of new technologies (Amin and Robins, 1990; Tickell and Peck, 1992). Many commentators argue that mass production is alive and well and that much of the literature on post-Fordism is overly speculative (Sayer and Walker, 1992; Teague, 1990). Much is made of the fact that the few empirical examples used to justify the trend are based mainly on selected examples that are spatially specific and from only a limited range of industrial sectors (Cohen and Zysman, 1987; Gertler, 1992).

Much of the empirical research that has been undertaken from a 'post-fordist' perspective has focused on the manufacturing sector, with little attention being paid to the growing dynamics and importance of service focused industries including tourism. Nevertheless, several researchers are borrowing from these frameworks in their attempts to understand the changing structure of the tourism industry and its evolving role in regional economies.

## 3.4 TOURISM AND THE "NEW" POLITICAL ECONOMY APPROACH

Britton (1991) expressed growing concern about the inability of current tourism theory to grapple with the complex relationship between the evolving structure of the industry and its impact on processes of regional development:

...the geographic study of tourism requires a more rigorous core of theory i order to conceptualize fully its role in capitalist accumulation, its economic dynamics, and its role in creating the materiality and social meaning of places (1991: 452).

While Britton's call for the development of a new body of tourism theory has not yet been fully answered, some progress is being made (Milne 1995). Recent years have seen a small group of researchers begin to transfer some of the 'new' political economy approaches outlined above to tourism research (Poon 1990; Urry 1990; Mullins, 1991; Milne, 1992a; Peacock, 1992; Grekin, 1994). This section reviews the work of Mullins (1991) and Urry(1990) and focuses on the work of Poon (1988; 1989a; 1990a; 1993) the most avid supporter of the 'new' political economy approach to the study of tourism's growth and development.

Mullins (1991) adopts the regulation school approach in charting the transition of urban tourism and the creation of the 'Postmodern City'. His arguments are based on work done on the Gold and Sunshine Coasts of Australia. According to Mullins, collective consumption of essential goods and services during the period 1945-1971 has given way to a more customized consumption of pleasure goods and services in the eighties. This, it is argued, is a move towards a post-Fr dist consumption pattern, the consequences therefore being the creation of a post-Fordist or Postmodern city (1991: 330).

This empirical analysis shows that the tourists visiting the Gold and Sunshine coasts have changed considerably over the 25 years. Standardized, rigidly packaged holidays are not in as heavy demand today as they were a decade ago. In addition, it is observed that an increasing number of visitors are now more discrimating concerning choice of vacation. In addition, visitors are now more value conscious and seek quality services at unique and uncrowded places. The results have important implications for the development and growth of "alternative" (heritage) tourism destinations and support the hypothesis that there is rapid growth and increased attractiveness and popularity for what is now termed the "Postmodern" city (Harvey, 1989).

Urry's (1988) theoretical explanation of the rise and fall of the British coastal resorts is also predicated upon elements of the regulation approach. He argues that coastal resorts became fashionable with the advent of mass domestic tourism driven by Fordist consumption and

production patterns. Conversely, their declining popularity today is explained by the globalization of tourism and most importantly the changing profile of the tourist from a "Fordist holiday maker" to a "post-(mass) tourist" (1988: 37, 48). Urry argues that this "flexibilization" in tourism heralded the end of mass holidays and mass-consumption sites such as the British seaside resort (1988: 48) and the rise in the popularity of unique and customized tourist sites such as historical, cultural and industrial areas (1988: 50).

Poon (1988) is one of the few researchers to study changing demand structures and industrial organization in the tourism sector from a perspective informed by the flexible specialization approach. She has attempted to develop a model of change for the international tourism industry - with a particular focus on the Caribbean. Poon (1988; 1989a; 1989b; 1990a; 1990b; 1994) argues that we are witnessing the emergence of a "new tourism" driven by advances in technology, greater sensitivity in consumer taste and deregulation and concentration in the industry. She emphasizes:

that the emerging trends and developments are nothing short of a revolution, which stems from the radical transformation of the industry from 'old' to 'new' tourism. This 'new tourism' revolution brings with it a whole new 'common sense' (Poon, 1994: 91).

Old, or mass, standardized and rigidly packaged (MSRP) tourism, the logical outcome of key social and economic influences of the time, is seen to be giving way to an emergent form of tourism based on flexibility, segmentation and diagonal integration (FSDI). MSRP tourism was created and sustained by a number of favorable features of the post-war WWII period, including: the development of long haul jet passenger aircraft, cheap oil and the enshrining of rigid working times and holiday periods in western culture. "Old tourism" like "Fordism" rapidly became the recipe for best practice while regulatory mechanisms ensured continued productivity increases and maintenance of high levels of profit. Competition was based largely on price and price reduction was best achieved through the development of 'mass produced' largely homogenous 'package holidays'. The tourism industry catered for the masses' demand

for cheap 'sun-lust' holidays and also, because few niche type products were available at an affordable price, tended to mould tourism demand to meet the MSRP format. The basic components of these two 'forms' of tourism are outlined in Figure 3.2.

Poon argues that the industry is responding to a range of new demands (economic, demographic, environmental etc) which are forcing it to adopt a new 'best practice' based around the underlying theme of flexibility. This new form of tourism has been created by a number of inter-related factors including: the diffusion of new information technologies; the negative impacts associated with mass tourism; environmental pressures, and changing leisure and work patterns.

The economics of this 'new' tourism are very different from the old - profitability no longer rests solely on price competitiveness, economies of scale and the exploitation of mass undifferentiated markets. Economies of scope, segmented markets, customized holidays and 'quality' are becoming the driving forces behind competitive advantage. The traditional organizational 'best-practice' of vertical and horizontal integration is seen to be giving way to so called diagonal integration. Tourist themselves it is argued, are turning their backs on 'tinsel and junk' and seeking more 'real and natural' and more authentic experiences. There is also a movement away from mass, impersonalized services to 'high tech., personal touch', greater care and concern for the conservation of the natural environment (Poon, 1994: 92).

The major characteristics of new or FSDI tourism are its focus on product flexibility and variety facilitated by the increased use of advanced technology. Increases in flexibility (F) found in the organization, production and distribution of travel services. The increasing use of information technology plays a major role in facilitating this flexibility in the travel market-place. Segmentation (S) is resulting in the breaking up of mass markets into cluster segments who display a diversity of needs and characteristics. Finally, diagonal integration (DI) is the process whereby service firms move into new and different activities, seeking the tremendous

## FIGURE 3.2 THE CHANGING STRUCTURE OF INTERNATIONAL TOURISM

| Mass, standardized and rigidly-packaged tourism                              |    | Flexible, segmented, customized & diagonally integrated tourism |
|--|----|---|
| Information technology<br>increases the quality and<br>efficiency of tourism | -> | Tourism as a 'system' of wealth creation and new services       |
| Jet aircraft, promotional fares, charter flights                             | -> | Passenger mix, optimal routing                                  |
| Sun lust   | -> | Anti-sun syndrome   |
| Tinsel and junk  | -> | Real, natural, authentic  |
| 'The more the merrier'   | -> | Growing concern, planning                                       |
| Vertical and horizontal integration  | -> | Diagonal integration  |
| Franchises   | -> | Designed and custom-made  |
| Mass markets   | -> | Segmentation and niches   |
| Mass, impersonalized services  | -> | 'High tech, high touch'   |
| Scale economies  | •> | Economies of scope and system gains                             |
|  |    |   |

(Source: Poon, 1989b: 93).

•

synergies, systems gains, and scope economies to be derived from such integration.

Poon has used the changes in the nature, structure and organization of the Caribbean tourism industry to demonstrate the movement from "old" to "new" tourism. In the old 'best practice' Caribbean destinations segmented their markets simply on the basis of country of origin, socio-economic status judged by stated income and the perceived associated spending potential. Today, the practice is much more sophisticated. Market segments are increasingly determined by other factors like; benefits sought, activities undertaken, consumer characteristics and personality traits instead of by income and place of residence. People, it is argued, are seeking more creative holidays combining a number of activities and experiences. This, it is suggested, is responsible for the higher growth in non-traditional Caribbean tourist destinations like Trinidad and Tobago, Grenada and Dominica and the relatively slow growth of the well known and established destinations such as Barbados, Antigua and Jamaica.

It follows that for destinations to remain attractive, they must cater to a more diverse range of experiences for the more sophisticated clientele. For example, destinations must now, not only cater to Double Income No Kids (DINKS) couples from the sun belt region of the United States seeking excellent beaches, but also provide good windsurfing, bird watching and social and cultural activities. Similarly, vacations tailored to the over 50s couples must in addition to sunny beaches provide excellent sailing, educational opportunities, walking tours and health food outlets with some night time entertainment. The key challenge for travel suppliers is to understand the components and composition of these cluster segments and to determine in which clusters an organization can gain a comparative advantage (Poon, 1989b: 95).

This new consumer demand has led to a number of innovative, creative and flexible responses from within the region. The most celebrated is the proliferation and dynamic evolution of " all-inclusive/club" vacations. It is argued that the "all-inclusives" concept was developed because of two trends evident within the Caribbean tourism industry since the early 1980s. These

are the rise in crimes against tourist principally in Jamaica and lately in Barbados, and the increased popularity and therefore demand for short "all-inclusive" cruise vacations. It is believed that the "all-inclusive" concept provides a holiday experience comparable to that of the short cruise, provides greater incentive to travel agents through commissions and helps resorts and island destinations increase their competitiveness. To a large extent, the operation of "all-inclusive" resorts provides the needed safety and security for visitors and makes vacation expenses more predictable.

Many firms and destinations have further expanded and developed on the all-inclusive concept moving to what is now termed the "super-inclusive" and the "extra-all-inclusive" holiday now promoted in Barbados and other Eastern Caribbean destinations. The latter approach, revolves around a group of hotels, restaurants, night clubs and attractions on the island of Barbados, that collectively offer clients the flexibility of sleeping and dining at different establishments during the same vacation.

In addition to the all-inclusive concept, other recent product innovations have been introduced within the Caribbean tourism industry over the past five years to cater to the changing demands. These include a move by some destinations to differentiate themselves from each other; Belize and Dominica in ecotourism; Anguilla and Montserrat in exclusive upmarket resorts; Trinidad and Tobago promoting Carnival as a cultural activity to tourists and sport tourism like diving on the island of Bonaire. These are becoming major foci for the Caribbean's tourism diversification efforts (Gayle and Goodrich, 1993).

These examples serve to emphasize the more informal and flexible demands of the visitor and the responses of the regional suppliers. Poon (1994) argues that this flexibility will increasingly be a key element in the competitiveness, profitability, and eventual survival of the Caribbean tourism industry.

Growing competition has also resulted in the cross fertilization of travel services. This practice is already being adopted by travel suppliers as they attempt to respond creatively and competitively to an increasingly dynamic, complex and changing travel environment. British West Indian Airways (BWIA), for example, is responding to a deregulated travel environment by diagonally integrating into venture services, offering a number of high-value, computer related services to the domestic market. Likewise, the SuperClub group, the original developers of the all-inclusive concept is about to purchase shares in Jamaican airlines (Globe and Mail, June 20, 1994), while diversifying its product and catering to more specialized market niches. In addition water sport, dive, sailing or golf oriented resorts are also available. Multiple destination all-inclusive packages involving combinations of the above are also available and are becoming increasing popular (Montreal Gazette, Feb. 27, 1993).

Poon's model of 'new' tourism has some profound implications for the understanding of the process of tourism development. The basis of Poon's thesis - the fact that the demand for tourism products has changed substantially in the past decade - is largely substantiated by the literature in trade journals and government policy statements. Most contend that we are entering a new phase of tourism development - a phase that brings a range of new problems and prospects. The types of competitive pressures outlined above are forcing the tourist industry around the world to re-evaluate its organizational 'best-practice'. These adjustments are being assisted, and in some cases driven, by the development of increasingly powerful information technologies. As in manufacturing, the introduction of new more flexible technologies must be matched by a restructuring of corporate organization and perhaps, most importantly, new approaches to labor management. Poon's flexible specialization approach is rooted in emerging irends in corporate behavior at the micro-level and is an important reminder of the need to focus on the behavior of the individual tourist and the firms that produce, sell and distribute the product.

A further strength of Poon's theoretical framework is its non-deterministic approach. The

future of the tourism industry, when examined within this framework, is not assumed to develop into any specific final form as is implicit within both the diffusionist and dependency paradigms. It proposes that the form of tourism that evolves is more a result of the innovative practices and adaptability of firms and destinations to the changing environment than to any predetermined growth process. The model does not necessarily lead to a conventional mass tourism product that is foreign owned, controlled and managed. The SuperClub investment group and future owners of Air Jamaica discussed above are indeed, a locally owned, financed and controlled business venture. Most importantly, the firm or destination, irrespective of its size and organizational structure, is not seen to be simply another victim of the international tourism system.

Poon also argues that competitors will increasingly come from outside the tourism industry; suppliers will need to get closer to the consumer to better understand the complexity of demand; and firms have to match their skills and resources to meet market-place demands (Poon, 1989b: 101). Industry players as well as destinations will therefore have to follow a number of principles in order to compete successfully in the changing market place. It is suggested that to achieve success, industry players must put consumers first, strive to be leaders in quality and constantly improve the product offering through the development and use of innovative practices. Poon also suggests that, in order to benefit from the development of the "new tourism", destinations must adopt a number of principles including giving priority to preserving the natural environment, initiating a national or regional information system using an electronic database comprising information on both tourist facilities and resources; and strengthening of the product's distribution channels in the market place.

The major weakness of Poon's proposed framework is the implication that there is a singular shift from an "old' form to a "new" form of tourism and that changes are already so profound that a "revolution" has occurred. Many tourism practices within the Caribbean region, like labor flexibility and the craft mode production, have always been predominantly small scale, flexible and innovative. It is questionable whether this move towards a post-Fordist mode of

production involves a clear break from the past and can be considered a "revolution". Poon's use of a new-old tourism dichotomy is not particularly effective as it does not take into account some of the variations and complexities that are inherent in such a vast industry as tourism. Furthermore, her work focuses mainly on the impact and flexibility of information technologies and changing organizational structures, but fails to stress the impacts of changing labor patterns and management techniques which are so important at the firm level (Milne, 1992a).

The work also equates tourism with international travel. As is the case of Canada and the USA domestic travel is at least as important for many regional economies, if not more so, than its international counterpart. Likewise, regional "domestic" Caribbean tourism accounts for more than 33% of the visitor arrivals to some of the less well know destinations like Dominica, Montserrat and St. Vincent and the Grenadines (Goodwin, 1990).

Most importantly, however, Poon over-simplifies what is really a very complex situation by stating that price competitive, mass tourism and its attendant industrial structures are being 'replaced' by new forms of tourism based around quality experiences and flexible forms of organization (Milne, 1992a). Butler (1990) makes the important point that many people seem to enjoy the convenience of being a mass tourist as well as the comfort of familiar style food and accommodation, and the cheap price. Thus among a certain segment of consumers, the package holidays provided by large operators remain popular. He believes that alternative tourism will at best serve as a complement to mass tourism by catering to specific groups seeking more authentic attractions.

Another fundamental weakness of the approach is the lack of a detailed account of how this new economic model, with its 'micro' orientation, relates to the macro environment. To fill this void in the theorizing about flexible specialization, the idea of "Structural flexibility" has been put forward (Kenny and Florida, 1988). The authors use the notion of "structural flexibility" to link the micro-emphasis of the flexible specialization scenario with the more macro-orientation of the French regulation school. Teague (1990) argues that the term structural flexibility is useful (Teague, 1990: 50) but that these raw theoretical formulations still require further development and refinement.

In spite of its many strengths and insights, this body of work has contributed little so far to the understanding and measurement of tourism's sustainability. Nevertheless, it is commonly assumed by Poon and others that the

'new tourism' is a tourism that is sensitive to the environment and the people of the country; a tourism that is sustainable; a tourism that is able to transform tourism-dependent and vulnerable island economies into viable entities (Poon, 1994: 92).

#### 3.5 TOURISM AND SUSTAINABLE DEVELOPMENT: A NEW APPROACH

Considerable criticism has been directed towards the sustainable tourism concept. Wheeler (1992) expresses grave doubts regarding its relevance, given the overriding problems of ever-increasing tourist numbers and tourist movements. However, he does acknowledge the potential importance of the concept at the individual project level: " what we have at best are small-scale, isolated examples of 'success' -micro solutions to what ... remains a macro problem" (Wheeler, 1992: 105).

However, as mentioned earlier, empirical research on tourism sustainability is limited both on micro and macro-levels. This appears to be a result of the problems associated with finding an acceptable definition of the term and more importantly the difficulty of making it operational and functional. Nonetheless, many models have been forwarded (Pizzey, 1989; Daly, 1991; Everitt et al., 1991) to try to understand economic sustainability; however, very few look at environmental sustainability, while even fewer have attempted to combine both of the above.

From a systems perspective, McElroy and de Albuquerque (1989b) develop a simple descriptive theory of the economic-environmental interface for an open tourist economy operating within the constraints imposed by a fragile physical environment. A broad empirical test of the model reveals three basic tourism styles within the Caribbean: low impact emerging areas, high impact mass market destinations, and intermediate islands with features of both extremes (Figure 2.3 chapter 2.). Using macro economic indicators, they conclude that the high-impact style tourism is associated with the older; highly affluent tourism societies that are leaders in the region: Aruba, Barbados, Bermuda, St. Maarten. Their business depends strongly on the relative short staying U.S. market and their tourist industries are dominated by large hotels, low seasonality and the prevalence of human-made attractions like shopping and gambling. At the other end, the low-impact style is characteristic of newer and smaller destinations which are patronized by long staying vacationers and retirees are small scale with few human-made attractions and the majority of other natural resources are as yet unspoilt (McElroy and de Albuquerque, 1989a: 13).

The literature suggests that it is primarily these mature destinations that are most plagued by various forms of environmental degradation (Jackson, 1984; Archer, 1984; Dubois, 1984; McElroy et al, 1989a, 1989b). The authors maintain that current demand levels can only be maintained by more aggressive marketing, greater mass merchandising and packaging. Only by replacing lost or damaged natural amenities and resources with human-made, "Disney" style attractions can destinations maintain their attractiveness and market share. This approach allows only limited policies options, as that promoted here, when this linear stage approach is employed. Within this "diffusionist" framework, mature destinations can increase profitability only through a redesign of the product focusing on cheap, high density accommodations and mass market advertizing in an effort to attract high volume tourist traffic.

These authors need to be commended for their thoughtfulness and foresight. However,

because of the scale of their examination, their emphasis on growth, measured by number of visitors attracted, the model is not helpful for policy or planning purposes. Wheeler (1992) argues that this type of macro-scale approach is inappropriate. He says that

Tourism on a micro-level can perhaps be sensitively planned for but at the macro-level, because of the enormity and complexity of the task, it becomes cumbersome, uncontrollable and 'unplannable' (Wheeler, 1992: 95).

Another criticism of the model is that it is static and set within the "Fordist" consumption and production framework. It is based on the assumptions implicit in Butler's (1980) Tourism Area Destination Cycle (TACE). In another related paper McElroy and deAlbuquerque (1989a) examined the impact of retirement tourism in Montserrat; the evidence indicated that the promotion of retirement tourism - a policy rapidly growing in currency in the distressed pockets of developed countries-may provide a profitable alternative that is simultaneously "soft", lowdensity dispersed and amenity-defensive (Krippendorf, 1982; Pearce, 1987). Jones (1992), however, argues that micro-level sustainable tourism development might yield 'clues and solutions... which can be used to inform and advise policy and practice in the development and management of [mass] tourism'.

Previous approaches to the analysis and measurement of "sustainable tourism development" have been very narrow in focus, static and inflexible and therefore not appropriate in these times of rapid change. It is proposed that the "new" political economy approach to studying different tourism impacts and associated restructuring strategies can better explain the dynamics of the tourism development process and is applicable in varying empirical situations. As Hirst and Zeitlin explain:

The distinctiveness of flexible specialization as a style of analysis can best be appreciated by examining the way in which it's theoretical architecture builds upwards from simple ideal type to a complex and multi-level system of concepts applicable to a diverse range of empirical cases (1991: 2).



International tourism is in metamorphosis and a "new" form of tourism is evolving - one that promises flexibility, segmentation and diagonal integration; a tourism driven by technologies and changing consumer requirements. This "new" tourism has a number of profound implications for firms, and destinations' survival and competitiveness. Survival will depend on suppliers getting closer to consumers, policy makers understanding the total impact at the level of the firm, and that firms and destinations closely match their skills and resources with the changing demands of the consumer market. This demands the ability to respond with equal flexibility.

#### 3.5.1 An Integrated Methodologica! Approach

----

The new political economy approaches outlined above reveal the importance of understanding how broader processes of economic and societal change can influence tourism destination development. They also point to the need to gain a more holistic understanding of the tourism impact process - so that local governments, planners and entrepreneurs can effectively guide the development of a more sustainable tourism industry.

This thesis represents an attempt to build on the pioneering theoretical work of Poon, Mullins and Urry. It attempts to look at the changing visitor characteristics, behavior and level of satisfaction of visitors to Grenada over a four year period. It further attempts to examine the applicability of the discrete choice model to assess marketability of different tourism products, focussing on a disaggregated approach, whereby the importance of individual variables to an individual's decision making process is measured. Within this framework, the economic and environmental impacts of Grenada's tourism industry are presented, focusing on the impacts at the "micro" level (the firm or group of firms providing the services that come together to form the island's tourism product). These issues are further brought together, within the post-Fordist framework, in an attempt to assess the sustainability of the islands tourism development efforts.



I argue that in order to do the above, one must get a better understanding of the individual tourist and market segments and their associated impacts on the economy, culture and environment before any meaningful sustainable tourism policy or plan can be developed. Time or financial resources did not allow the integration of the socio-cultural impacts of tourism but it is hoped that these factors will be analyzed and integrated into this framework at a later stage. In the case of the small island destinations, I argue that one must also strive to better understand the special problems of microstates together with the 'manufacturing' biases that have permeated development theories as applied to island economies in the past. I maintain that it is only when we first understand the motivation, behavior and activities of different tourists and the impacts on the host community of different tourism approaches that we will be able to influence the sustainability (economic and environmental) of tourism.

Motivation theorists therefore argue that "since motivation lies at the core of understanding human behavior, its examination is more fundamental than impact, and also logically and temporally prior" (Smith, 1988). There is a clear lack of integration between the motivation, product development, marketing and impact focused studies that exist within the tourism research literature. There is also a difference in focus and approach. Impact studies focus usually on the tourism process, while motivation studies direct their attention to tourist behavior and characteristics.

It can be argued that impact studies focus on the destination and are conducted by a separate and independent group of researchers from those focused on the tourism market. Likewise, market research is principally conducted on behalf of the many national and regional tourist offices, by independent consultants. Therefore the destination as argued by Haider (1991) is treated perfunctorily. In this context, it is uncommon to find studies that bring together both areas of investigation. Over the past 15 years, there has been a call for further integration of these two different approaches to tourism research (Pearce, 1987, 1989). The situation has not changed significantly over the period. It is important to look first at the choice process of

potential visitors and determine the likelihood of choosing one destination over another. With an idea of the type of destination that is marketable, one can then design specific holiday types for different market niches. One can also measure whether different tourism development approaches are likely to be marketable in the long term. This combined with the examination of the economic and environmental impacts, likely to result from different development approaches, will then be used to assess the strategy's sustainability. These issues, based on the "Grenada case study" will be the focus of the rest of this research.

Grenada's tourism industry is now at a critical point in its development process. The island is at the intermediate stage where the policies and plans adopted within the next five years will determine what type of tourism destination is developed and the direction of the impacts on both the economy and the environment (McElroy and Albuquerque, 1989a). This thesis attempts to establish a framework through which these impacts can be measured and predicted, on the basis of the policies, programmes and plans adopted by the policy makers and tourism developers. With the ability to look at these impacts in a more holistic manner, it will then become more likely to determine what approaches, within what circumstances, are more likely to be both economically and environmentally sustainable.

In simple terms it is hoped that the modified post-fordist theoretical approach adopted in this thesis in association with an integrated empirical approach will allow for a broader and more nuanced understanding of tourism's' impacts on island microstates. Together this gives us a better chance at understanding the impacts of alternative approaches to tourism development and an indication of their long term sustainability.

# CHAPTER 4 GRENADA: THE CASE STUDY

#### 1.0 INTRODUCTION AND BACKGROUND

Grenada, a small mountainous nation of approximately 346 square kilometers, is situated in the Windward Islands chain in the Eastern Caribbean (Figures 4.1 and 4.2). This English-speaking country consists of three main islands; Grenada, Carriacou and Petit Martinique, and a number of smaller mostly uninhabited islands within the Grenadines. Grenada is 312 Km<sup>2</sup> and occupied by 86,000 people while Carriacou, the largest of the Grenadines, occupies 34 Km<sup>2</sup> with a resident population of 4,395 (Government of Grenada, 1991a).

The islands' climatic conditions can best be described as "humid tropical marine", with little seasonal or diurnal temperature fluctuation. Temperatures average 28 °C annually, decreasing to about 20 degrees in the earlier months of the year. Annual rainfall varies from the low-lying coastal areas where about 1,250 mm (50") are recorded, to 4,000 mm (160") in the moist highlands. The rainy season roughly coincides with the hurricane season (June - November).

Grenada was originally inhabited by Amerindians who migrated north from the South American mainland. However, they were exterminated by the French during early attempts at settlement in 1650 (Brizan, 1986). About a century later, the island was ceded to the British who soon lost possession to the French during a military uprising (Government of Grenada, 1946). Grenada was, however, returned to the British in 1783 and the island remained British until it achieved associated statehood with Britain in 1969. Independence followed in 1974. Following a popular military coup d'etat in 1979, the island was governed under military rule until 1983 when democracy was restored after the military intervention of U.S.-led forces.


FIGURE 4.1 LOCATION MAP





The population is racially diverse. While Negroes dominate, there are people of many cultural, racial and ethnic backgrounds. The most recent population census (Government of Grenada, 1991b) showed a net population loss attributed to large scale migration to Europe and North America (up to 2000 annually). Despite the negative influence of migration, the birth rate is estimated at 33.0, the infant mortality rate at 15.9 and the death rate at 8.3 per thousand (Government of Grenada, 1991b).

The nation's natural resource base is very limited and fragile. With severe restrictions on land space and the absence of precious metals or minerals, the economy depends primarily on agriculture and tourism to generate growth and employment opportunities (Government of Grenada, 1992).

#### 4.1 THE NATIONAL ECONOMY

With per capita income of US \$1,300, Grenada's small internal market cannot sustain sufficient levels of domestic demand to reap the benefits of large scale mass production. The government's economic strategy is, therefore, to focus on production of goods and services for the larger and more lucrative international market (World Bank, 1992). The export of goods and services accounted for more than 44 percent of the GDP in 1990. Expansion and growth of exports have major implications for increases in output, domestic employment and savings. Most importantly however, are the implications attached to improvements in the country's foreign exchange and balance of payments position (Government of Grenada, 1991a). Grenada's adverse current balance of trade position is directly related to its weak export performance, particularly of the major export crops (bananas, nutmegs and cocoa). The current account balance moved from a surplus of US \$2.3 million in 1985, to a deficit of US \$25.1m in 1991. Exports declined from US \$28.8m in 1986 to US \$26.6m, while imports increased from US \$95.3m in 1986 to US \$109.5m in 1990.

The deterioration in the visible trade balance reflects the persistently poor performance of agricultural exports, experiencing a decline in value from E.C. \$52.8 million in 1986 to E.C. \$38.1 million in 1990. The overall decline in export trade reflected a combination of factors including: weak demand in external markets for Grenada's main export crops; exchange rate fluctuation particularly with respect to the pound sterling; and declining domestic production of primary agricultural crops (IMF, 1990). On the other hand, visible imports have been steadily increasing. Primarily as a result of growth in the importation of manufactured consumer goods (US\$33.0m in 1990), food (US\$28.0m), and capital equipment (US\$ 24.0m: mainly machinery and transport equipment).

Grenada's trading pattern reveals significant imbalances (Table 4.1). The European Economic Community (EEC) comprises the single most important market for Grenada's exporters - mainly agricultural products, while the USA is the source of the bulk of imports. There are, however, no significant differences between the value of imports and exports from Caribbean Common Market (CARICOM) and the Organization of Eastern Caribbean States (OECS) member countries. The extent of Grenada's dependency on the global economy is highlighted by the fact that 57% of all goods and services consumed locally are imported, while 46% of locally produced goods are exported (mainly agricultural and industrial). Nearly two-thirds of total agricultural production is destined for the export market of which 90 % is shipped as unprocessed produce. In this context therefore, the strength and growth of Grenada's economy depends to a large extent on the vibrancy of the international economy, particularly that of Grenada's main trading partners. There are increasing attempts being made to process the presently exported produce because of the job creation and value added potential, however, the lack of technical skills and investment capital has resulted in slow progress in this direction.

Economic growth and employment are both functionally related to changes in the rate of fixed capital formation or savings. It follows that the level of savings is the single most important requirement for economic transformation and as such, is a major objective of national economic policy. In light of the limited savings accumulated locally, Grenada is heavily dependent on external sources for the financing of its development programmes. In 1991 total capital investment reached E.C. \$211m of which more than 64% originated from external sources (Government of Grenada, 1992). The external financing comes mainly through development aid, concessionary loans, direct foreign investment, non-concessionary loans and portfolio investment (Darbeau, 1992: 52). Between 1985 and 1989 about E.C. \$98.2 million was mobilized by the government in the form of development aid and grants to finance development projects (Government of Grenada, 1991a).

#### TABLE 4.1 GRENADA'S DIRECTION of TRADE in % - 1990

| Country         | Imports | Exports | Main Trade item    |
|-----------------|---------|---------|--------------------|
| E.E.C           | 27.7    | 63.8    | Agricultural Crops |
| CARICOM         | 21.6    | 15.6    | Industrial Goods   |
| O.E.C.S         | 7.7     | 4.8     | Food/ misc.        |
| U.S.A.          | 36.6    | 12.8    | Machinery/Equip.   |
| Japan           | 7.1     | 0.0     | Electronic/Trans.  |
| (n <sup>-</sup> |         |         |                    |

(Source: Government of Grenada, Ministry of Finance, 1990b).

Concessionary loans are often made for periods of 10 to 20 years with low interest rates. Such loans are usually advanced for financing development projects with long gestation periods. The Government estimates that approximately E.C. \$207.8 million in concessionary loans was required between 1990 and 1995, compared to E.C. \$69.2 million for the previous five years (Government of Grenada: Ministry of Finance, 1990b). To date the administration has obtain only 55% of the loans anticipated.

This money was sought to help finance, among other things, the development of new domestic water distribution and sewer systems and crop diversification projects. Sources of concessionary funding include multilateral institutions such as the World Bank, International Monetary Fund and European Development Fund, plus bilateral donors such as the Canadian International Development Agency (CIDA) and the US Agency for International Development (USAID).

If Grenada is to be successful in mobilizing the required level of concessionary financing now and in the future, the following requirements must be fulfilled.

- i. The generation of public sector savings on recurrent budgetary operations. Such savings could be utilized as local counterpart financing.
- ii. A demonstrated capacity to implement development projects (good management and technical expertise).
- iii. An improvement in Grenada's credit worthiness through adequate servicing of its debts (IMF, 1990: 12).

A major constraint on Grenada's development efforts is its steadily increasing national debt. This rose 71% from US \$68.1m in 1985 to E.C.\$ 314.3 (U.S. \$116.00) million in 1990. In the same period, the country's domestic debt almost doubled, rising from E.C. \$70.3 million to E.C. \$137.8 million, while the external debt ballooned from US\$44.8m in 1985 to US\$ 99.3m in 1990. Debt service payments consequently increased by 40 percent, from E.C. \$25.2 million in 1986 to E.C. \$35.2 million by 1989. In spite of the concessionary nature of much of its debt, Grenada accumulated external arrears that amount to US \$27 million or 13% of GDP at the end of 1991. Most of the debt however, has since been rescheduled significantly, lowering the accumulated deficit and reducing the annual repayment. In spite of the rescheduling, debt servicing consumed 22% of domestic revenue and 44 % of the value of domestic exports in 1992. It is clear that debt servicing constitutes a major problem and will continue to be a significant burden on government finances (World Bank, 1992).

In its 1991-1994 budgets, the Government gave priority to the liquidation of its arrears thus imposing a debt service levy on income and a self imposed four year structural adjustment program through which it is hoped Government expenditure will be reduced while revenue is raised. These measures were introduced to prevent direct intervention by the International Monetary Fund (IMF) as had occurred in Jamaica and more recently Barbados. These measures have in most cases caused the natives great hardship, however the island has regained some measure of credit worthiness and has prevented the intervention of the international financial institutions. It is hoped that these measures will improve the country's future economic performance and instill confidence in potential foreign investors. Between 1986 and 1989, foreign direct investment in the Grenada economy amounted to E.C. \$184 million. For the period 1990 to 1995, it was estimated that approximately E.C. \$454 million would be needed to fulfil Grenada's capital investment requirements.

## 4.2 SECTORAL PERFORMANCE

Between 1984 and 1988, real GDP, fuelled by the strong growth in tourism (13%), construction (10%), and manufacturing (6%), expanded over six percent per annum, while for the period 1989-1994 the average growth per annum fell to 3.5 percent (Government of Grenada, 1995). In 1990, real GDP increased by about five percent on account of continued expansion in tourism (15%), construction (10%) and manufacturing (5.5%)(World Bank, 1992: 4). Agriculture contracted by 1% during the same period (See Table 4.2). Between 1991-1994, in spite of the slower economic growth estimated at 3.5 %, tourism (average 13.5%) remained the only dynamic economic sector.

When compared to the economies of other members of the Organization of Eastern Caribbean States (OECS), Grenada's performance between 1988 and 1992 is rated fair, ranking fourth among the eight nations. However, according to the CDB (1992a) there is still ample room for improvement - with excess capacity existing in several key sectors. In the agricultural sector, hundreds of hectares of arable lands remain under-utilized. The excess capacity of the manufacturing sector is estimated at 40%, while in the tourism industry, most hotels and guest houses operate at an average of 55 percent occupancy (World Bank, 1990). According to the Grenada Board of Tourism (1995) hotel occupancy rates for 1994 averaged 48 percent.

Agriculture remains the most important sector in Grenada, but its share in GNP has declined consistently in recent years, from 22% (or E.C.\$ 69.5m) in 1987 to 15% (or E.C.\$ 71.3m) in 1991 (Table 4.2). Agriculture's share of the total value of merchandise exports fell from 93% to 78 % during the same period. The major revenue earners are nutmeg and mace (30% of the agricultural GDP), bananas (10%) and cocoa (6%). Grenada produces 25% of the world's nutmeg and mace and is second only to Indonesia, which supplies 70% of the global market. In 1987, Grenada and Indonesia formed a cartel, selling all their nutmeg and mace through a single international spice trading firm. The collapse of the cartel agreement in 1992 led to a dramatic price reduction from which the industry has yet to recover.

The survival of the banana industry, on the other hand, depends on a preferential access agreement with the United Kingdom under the Lome convention. Banana exports face an uncertain future as the marketing agreement is threatened by the creation of the single European market. In light of this uncertainty, and a number of adverse local conditions including diseases, poor quality fruit, low productivity and labor shortages, the island's industry is experiencing reduced production and prospects for expanded banana output appear grim. Agriculture's contribution to GDP, is therefore expected to continue its decline throughout the short and medium term (Caribbean Development Bank, 1992b).

The development strategy for agriculture is to increase foreign exchange earnings through a two track program: diversification into non-traditional exports such as fruit, vegetables and fish, and increasing productivity of traditional export crops, particularly cocoa and bananas (World Bank Report, 1992). Diversification efforts are further aimed at reducing the economy's growing food import bill while fostering sectoral linkages with tourism and agro-based manufacturing and processing industries.

#### TABLE 4.2 GRENADA'S GROSS DOMESTIC PRODUCT BY SECTOR AT FACTOR COST (1984-1991)

|               | <u>1984</u> | <u>1988</u> | <u>1989</u> | <u>1990</u> | 1991  | <u>1991</u> |
|---------------|-------------|-------------|-------------|-------------|-------|-------------|
| GDP           | 223.4       | 350.2       | 395.3       | 422.0       | 443.8 | 70<br>100.0 |
| Agriculture   | 44.9        | 72.0        | 73.7        | 71.3        | 68.8  | 15.5        |
| Mining/Ouarry | 0.5         | 1.2         | 1.4         | 1.7         | 1.9   | 0.4         |
| Utilities     | 4.0         | 9.9         | 11.5        | 13.0        | 14.3  | 3.2         |
| Manufacturing | 9.8         | 18.4        | 20.8        | 22.6        | 24.3  | 5.5         |
| Construction  | 18.4        | 33.9        | 40.5        | 44.5        | 48.1  | 10.8        |
| Trade *       | 29.3        | 45.9        | 50.1        | 54.5        | 57.2  | 12.9        |
| Tourism **    | 11.7        | 21.3        | 24.0        | 27.7        | 33.2  | 7.5         |
| Tran/Commu    | 30.1        | 49.2        | 54.8        | 60.2        | 66.2  | 14.9        |
| Finance       | 27.5        | 38.7        | 40.7        | 42.4        | 44.3  | 10.0        |
| Government    | 46.6        | 63.1        | 82.0        | 88.9        | 91.5  | 20.6        |
| Other         | 10.6        | 12.5        | 12.6        | 12.8        | 12.9  | 2.9         |

\* Wholesale and retail trade \*\* Hotel and restaurants only (Source: Government of Grenada, Ministry of Finance, 1992).

Manufacturing output tripled between 1986 (E.C.\$ 4.0m) and 1991 (E.C.\$ 14.3m) but still accounts for only 5.5% of the GDP and 17% of merchandise exports ( Government of Grenada, 1992). The bulk of goods produced in this sub-sector are for the domestic and regional market a reflection of the import substitution policies that prevailed during the seventies and early eighties. The policies introduced in the mid-eighties to stimulate export led-growth have had only marginal success in spite of the generous incentives offered through the Industrial Development Corporation (IDC).

The I.D.C was established in 1985 in an effort to attract foreign investment into the manufacturing sector. The government offers a package of incentives and subsidies to new manufacturing enterprises (customs exemptions, tax holidays etc.), comparable to that offered

by other O.E.C.S. states. This has, however, met with little success. Instead, this growth has resulted principally from the expansion by local manufacturers who are offered the same concessions.

Extra-regional exports of manufactured goods come almost exclusively from enclave enterprises operating under the 806/807 regulations of the Caribbean Basin Initiative (CBI), and later the Enterprise for American Initiative (EAI). The CBI was revised in 1990, to help stimulate the Caribbean islands' economies through the provision of tax incentives to US firms operating in the region. The regulations also provide for preferential access for these and other goods produced in the region (Planisck, 1989). A few enclave industries, principally producing garments, pharmaceuticals and electronic goods, have been attracted. The newly attracted enterprises are however, not as labor intensive as anticipated.

One explanation for the island's failure to attract large scale, offshore manufacturing is its inability to meet the changing requirements of the multinational corporations. Grenada's relatively small unskilled labor force, comparatively high wage rates, low productivity and weak industrial climate make it unattractive to large foreign direct investment. The prospects of significant growth in extra-regional export oriented-manufacturing activity is, therefore, not very encouraging.

The strategy is nonetheless to encourage private development of export-oriented manufacturing, particularly enclave industries that generate significant employment opportunities. The emphasis is on attracting investment in agro-based industries that utilize domestic resources in production (World Bank Report, 1992). Manufacturing activities were projected to increase at a rate of 9.9 percent over the last five years as compared to 10 percent for the period 1986 to 1990 (Government of Grenada, 1991a). Construction activities were also expected to expand at a rate of 13 percent, thus maintaining an unchanged performance from 1986 to 1990 (Government of Grenada, 1991a). Despite the rather optimistic projections, many commentators

felt, rightly so, that the optimistic projections of growth in the manufacturing sector are misplaced in light of the country's continued failure to attract foreign direct investment. The average growth in manufacturing for the period 1990-1993 was only 4.5 percent (Government of Grenada, 1994).

#### 4.3 MACRO-ECONOMIC STRATEGY

Against a background of relatively weak external demand and uncertainties for primary commodity exports, critical shortages of skilled labor and a diminishing flow of investment capital in both private and public sectors, prospects for economic buoyancy over the short term are not favorable. It was projected by the World Bank (1992) that the economy is not likely to expand more than 4.5% in real terms, between 1990-1995. This was then two percent below the estimated minimum of 6.5% necessary to eliminate excess capacity and reduce unemployment to a more "acceptable" level. It is now clear that these projections are overly optimistic.

Recent developments in the international economy clearly dictate that Grenada will have to rely more on domestic savings and less on external sources of capital to meet its development requirements in the future. This is necessary because of the following: global contraction in international capital flows (concessionary and non-concessionary) to developing economies; the redirection of development aid from traditional recipient countries to other parts of the world; and the increasing difficulties in accessing development finance on the open capital market (IMF, 1990). It is hoped that Grenada's improved credit ratings will help to attract the needed concessional financing.

The level of national savings in 1990 was approximately nine percent of GDP. The target for 1995 is about 15 percent of GDP. Such an achievement would serve to finance both private and public sector investment programmes and therefore decrease dependence on external funding. The objective to be achieved is the conversion of public sector deficits which averaged 7 to 17 percent of GDP for the period 1986 - 1990 to public sector savings averaging about 1 percent of GDP for the 1991 - 1995 period(Government of Grenada, 1990a). This will require an increase in recurrent revenue intake and a reduction in expenditure. Revenue enhancement measures to be pursued include the attraction of new income generating activities, improving the efficiency of tax administration and collecting procedures and restructuring the tax regime. Expenditure control procedures include a phased programme of staff reduction within the public service; and indexing of public servant's wage increases to increases in the cost of living.

The restriction of inflation to about 5 percent annually constitutes an important development priority. Of major concern also, is the effect of high unemployment rates on the development process. Unemployment over the past five years averaged 28.2 percent or 11,000 workers. The highest unemployment rates were recorded among the nation's youths (62 percent), rural residents (37 percent) and women (56 percent) (Government of Grenada, 1990a). By the end of 1995, the government hoped to reduce the unemployment rate to 10 percent, or 4,100 workers. Assuming an annual growth in the labor force of 2.4 percent it will be necessary to create 10,867 new jobs. It was anticipated that 30% of those jobs will be created within tourism and other service industries (Government of Grenada, 1990a). Strategies aimed at employment creation involve the promotion and attracting of direct foreign investment and the provision of incentives to stimulate growth of the productive sectors such as tourism, agriculture, fisheries and manufacturing. Also to be promoted is the development of human resources, primarily in skills training which could be utilized as a basis for self employment. These projections have not been accomplished, the latest available unemployment statistics indicate a rate of 23 percent (Government of Grenada, 1994).

Another objective is to improve the country's balance of payment position. This could be achieved if measures are initiated to stimulate income from exports and the tourism sector while reducing imports of non-essential items. The desired target in this respect is to increase commodity exports to approximately E.C. \$125.2 million by 1995. However, a continued deterioration in commodity trade balance is envisaged as a consequence of the importation of the necessary volumes of materials to lay the groundwork for development. This anticipated deterioration in the trade balance is expected to be counteracted by increases in gross tourism receipts which are projected to reach E.C. \$256.2 million in 1995. The net result after debt servicing should be an overall improvement in the balance of payment, with a significant narrowing of the financing gap (CDB, 1992). It must however, be stressed that the growth and expansion of the tourism industry will also stimulate growth of imports since the economy cannot immediately respond to the increased demand generated.

In order to achieve these policy objectives, the following conditions must be met: capital investment should be maintained at an average rate of 37 percent of gross domestic product; labor productivity must be increased by at least 20%; while a significant reduction in wastage and increased levels of capital efficiency must be attained (World Bank, 1992). These are very difficult targets to achieve given the level of cuts required in social services and public sector employment In spite of the many medium and long terms goals and objectives discussed above, it is agreed that the best prospect for short term economic prosperity is the expansion of the tourism industry (Government of Grenada, 1990a).

### 4.4 THE TOURISM INDUSTRY

Grenada's tourism industry has traditionally been promoted as a winter beach destination, the emphasis being on the promotion of sun, sea and sand. Over the past five years however, there has been a major effort to diversify the product with a focus on the development of the natural, cultural and historic attractions.

Although tourism is estimated to have accounted for only 7% of the GDP in 1991, over the past five years it has been the most dynamic industry in Grenada (see Table 4.2). For example, gross expenditure for 1993 were estimated at E.C. \$129.7 million, a 14% increase over that of 1992 (E.C.\$ 113.81m). E.C. \$119.8 million was contributed by stay-over visitors (31% of total arrivals) while E.C. \$9.9 million was spent by cruise ship passengers and other excursionists (Grenada Board of Tourism, 1993). Tourist arrivals increased to 300,602 from 290,639, an increase of 3.4% over the same period. Confidence in the sector's future performance is largely based on the steady increases in visitor arrivals between 1988 to 1993. (see Table 4.3).

The quantity of visitors using private accommodation serves to disguise the real demand for commercial accommodation, with nearly 52% (1992) of the total stay-over visitors living in private accommodation with relatives and friends. In spite of the increasing number of arrivals, the accommodation occupancy rate has only averaged between 45% and 65% over the past five years. This is, however, only one of the many reasons for the slow growth in available accommodation over that period.

As of December 1992 there were 65 accommodation establishments : 26 hotels, 23 guest houses and 16 cottage/apartments. This adds up to a total room complement of 1114 with 2027 beds (Table 4.4). Of the 26 hotels that existed in 1992, only 17 (526 rooms), can be expected to attract up-market clientele because of their location, appearance, amenities and quality of service provided (CDB, 1992b). In 1992, all commercial accommodation, except the then Ramada Renaissance and the Secret Harbor "Moorings", was locally owned and operated. The Ramada, now renamed the Grenada Renaissance, with 184 rooms (42% of the up-market accommodation stock) was the only hotel with more than 60 rooms. The Grenada Renaissance, although owned by the Government of Grenada, was until 1992 managed by the Ramada international chain. The owners (lessee) have since refused to renew Ramada's management contract, the hotel is now managed independently. All apartment/villas/cottage type accommodation and guest houses are less than 20 rooms each, are 100% Grenadian owned and managed, and accounted for 55% of all commercial accommodation.

## <u>TABLE 4.3</u>

## VISITOR ARRIVAL BY CATEGORY

| Years | STAY-OVER<br>VISITORS | %<br>CHANGE | CRUISE<br>VISITORS | %<br>CHANGE | YACHT<br>CHARTER | %<br>CHANGE |
|-------|-----------------------|-------------|--------------------|-------------|------------------|-------------|
| 1983  | 32459                 | -           | 50217              | -           | 1445             | -           |
| 1984  | 39503                 | 22%         | 34166              | -32%        | 1343             | -7%         |
| 1985  | 51979                 | 31%         | 90710              | 160%        | 2726             | 102%        |
| 1986  | 52283                 | .5%         | 113854             | 26%         | 2135             | -21%        |
| 1987  | 54490                 | 4%          | 127214             | 12%         | 3071             | 43 %        |
| 1988  | 58938                 | 8%          | 135980             | 7%          | 2842             | -8%         |
| 1989  | 65722                 | 12%         | 120702             | -11%        | 3035             | 6%          |
| 1990  | 76447                 | 16%         | 183159             | 52%         | 4975             | 63%         |
| 1991  | 85002                 | 11%         | 196144             | 7%          | 7318             | 47%         |
| 1992  | 87554                 | 3%          | 195894             | 0%          | 3371             | -117%       |
| 1993  | 93919                 | 7%          | 200061             | 2%          | 7070             | 109%        |

SOURCE: GBT Annual Statistics, 1993

Although there were no additions to the total room stock between 1991 and 1992, the GBT statistics indicated a reclassification of accommodation types as shown in Table 4.4 (GBT, 1992). Eight properties with a total of 185 rooms which were previously considered apartments or cottages were allocated hotel status. It is not yet clear why these properties have been reclassified. What is clear, however, is the conspicuous growth in small apartment/villa and guest house accommodation against the limited addition to the medium and large hotel sub-sector over the past ten years. For example, between 1984 and 1991 only 129 rooms were added to the hotel plant as compared to 411 in the apartment/ villa and guest house category.

Despite the stated goal of quality tourism, targeted to up-market segments, the island has only really been able to attract local investment in small properties catering to the lower end of the market. With few exceptions, these local proprietors and managers have little knowledge and experience in the operation and management of quality accommodation facilities. The direction of growth in the accommodation sector over the period has been dictated by the availability of finance and the inability of the Government to attract direct foreign investment within the tourism sector.

| YEAR |     | HOTELS | -   | GUEST COTTAGE TO<br>HOUSES /APTS |     | TOTAL |       |
|------|-----|--------|-----|----------------------------------|-----|-------|-------|
| -    | NO. | ROOMS  | NO. | ROOMS                            | NO. | ROOMS | ROOMS |
| 1984 | 17  | 424    | 08  | 63                               | 10  | 91    | 578   |
| 1985 | 16  | 378    | 13  | 95                               | 11  | 124   | 600   |
| 1986 | 16  | 411    | 16  | 112                              | n   | 120   | 643   |
| 1987 | 16  | 469    | 18  | 144                              | 16  | 209   | 822   |
| 1988 | 17  | 518    | 21  | 172                              | 21  | 319   | 1009  |
| 1989 | 17  | 514    | 25  | 202                              | 24  | 369   | 1085  |
| 1990 | 17  | 543    | 24  | 194                              | 24  | 368   | 1105  |
| 1991 | 18  | 553    | 24  | 207                              | 22  | 358   | 1118  |
| 1992 | 26  | 738    | 23  | 165                              | 16  | 211   | 1114  |
| 1993 | 28  | 1027   | 23  | 165                              | 19  | 236   | 1428  |
| 1994 | 28  | 1027   | 23  | 165                              | 19  | 236   | 1428  |

#### TABLE 4.4 BREAKDOWN OF ACCOMMODATION SECTOR 1984-1994

SOURCE: GBT ANNUAL STATISTICS 1993

The year 1993 was a watershed year for the Grenada tourism industry as accommodation capacity increased by 28% (314 rooms) with the addition of two large "all-inclusive" hotels each

with over 100 rooms plus three cottage style enterprises which contributed a total of 25 rooms (Table 4.4). With these additions, the ownership and accommodation structure, operating concepts, and more importantly control of the industry, have been radically affected. The hotel type accommodation with 1027 rooms now accounts for 71% of the total, with the three large (>100 rooms) foreign owned and managed properties accounting for 35% of the room stock. It is important to note that 20 % of the available rooms are operated as "all-inclusive" hotels. These are also located within the Grand Anse - Lanse Aux Epine corridor, close to the international airport and the city of St. George's (see Figure 4.3).

For many in the tourism industry this increase in accommodation infrastructure is a welcome addition since it increases the probability that more international airlines will add Grenada to their schedule. Since the opening of the controversial Point Salines International Airport in 1984, the facility has been grossly under-utilized, in spite of the many attempts to attract scheduled carriers.

The island is currently served by three major international airlines: BWIA, the national airline of Trinidad and Tobago, offers daily flights to Miami via Antigua with connections to London and New York; American Airlines operates a daily schedule from it's regional hub in San Juan, Puerto Rico with connections to all major centers in North America. British Airways flies twice weekly directly to London (Heathrow), with connections to other European destinations. This is in addition to the Leeward Islands Air Transport (LIAT) regional service. Charters are limited to the winter season and the month of August when Grenadians living abroad return home for the annual festivals.

Grenada's main market has traditionally been North America (principally the US) although this is now changing (Table 4.5). In 1986 a total of 11,197 (21% of arrivals) people visited the island from North America, mainly U.S. residents, compared to 58,17 (11% of arrivals) from Europe. In 1992, however, North Americans increased to 28,570 (31%) visitors,



while Europeans accounted for 23,651 (27%). When one considers the average length of stay of each segment (7.5 as compared with 12.3), the European bed night contribution now exceeds that of Americans. In spite of the differences in total arrivals, the accommodation statistics (GBT Statistical Report, 1993) reveal that 14,505 North Americans used hotel accommodation as compared to 14,237 Europeans. (derived from Table 4.5)

| CATEGORY             | 1986  | 1987  | 1988  | 1989  | 1990  | 1991  | 1992  | 1993              |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------------------|
| GRENADIANS<br>ABROAD | 14617 | 14524 | 14845 | 16193 | 16798 | 15950 | 15670 | 16158             |
| U.S.A.               | 9090  | 9129  | 11497 | 11844 | 20098 | 23606 | 24408 | 30364             |
| CANADA               | 2107  | 2410  | 3047  | 3652  | 4335  | 4629  | 4162  | 4214              |
| U.K.                 | 3686  | 5232  | 7139  | 8933  | 9138  | 10663 | 10306 | 11216             |
| OTHER<br>EUROPE      | 2130  | 3895  | 5660  | 6908  | 8543  | 11464 | 13345 | 14081             |
| CARICOM              | 17980 | 16687 | 14656 | 15756 | 15324 | 15082 | 15842 | 13692             |
| OTHERS               | 2673  | 2513  | 2094  | 2436  | 2814  | 3608  | 3821  | 4194              |
| TOTAL                | 62283 | 54490 | 58938 | 65722 | 76447 | 85002 | 87554 | <del>9</del> 3919 |

TABLE 4.5 STAY OVER VISITOR ARRIVALS BY COUNTRY OF RESIDENCE (1986-1993)

SOURCES: GBT ANNUAL STATISTICAL REPORTS 1992, 1993

It is estimated (GBT statistical Report, 1993) that the average occupancy rate for major hotels in 1993 was 67% a marked increase over the 58% for 1992. There is however, a difference between seasons from a peak of 91% occupancy in February, compared to a rate of 45% in both June and September. In comparison, the small hotels and apartments experienced an average rate of 43%, the highest being 70 % in the month of August. These properties are having difficulties meeting their financial commitments. Approximately 64% have reported negative returns on their investment while the rest have generated not more than 15% per annum (CDB, 1992b).

Grenada is served by a comprehensive network of well maintained roads and a reliable supply of electricity. However, adequate sewage and water supply are major problems for the tourism industry. Water must be rationed at hotels during the peak tourist season. According to the World Bank (1992: 31), "this issue is being addressed in the PSIP [Public Sector Investment Programme], but implementation will depend on fiscal performance". This key theme of water shortage will be returned to later in the thesis.

Grenada focuses on "stay-over" visitors - visitors who spend at least one night on the island as against excursionists (who visit for less than 24 hours). The growth of the cruise ship sector has, however, led to a review of this strategy. If Grenada chooses to encourage an expansion in cruise ship tourism, port capacity expansion will be critical since larger cruise ships cannot enter the port of St. George's. Financing of a new port facility, to accommodate these larger cruise lines and extensive duty free shopping facilities is now sought. Understandably, the accommodation sector is seriously opposed to the idea, for they are convinced that the cruise industry is the Caribbean Hotel Association's biggest competitor. On the contrary, the taxi and vendors associations are in full support of the proposal.

#### 4.5 THE TOURISM STRATEGY

In spite of the energy and time spent to attract direct foreign investment in the tourism sector, the government has maintained that it does not hope to develop what is termed a "conventional-mass" tourism destination or product. The strategy emphasizes "quality and stayover tourism, rejecting mass tourism on economic, cultural and environmental grounds." (World Bank, 1992: 30). The Government, through a broadly based consultative process, developed strategies aimed at achieving their stated goals: " to develop and market Grenada as an up-market destination and yet one which is laid-back, restful, friendly, unspoilt or say 'like the Caribbean used to be'. In that endeavor, it was decided that the growth must take place in a coordinated manner and should move hand in hand with other important and related sectors like environmental preservation, infrastructural development, [particularly water and roads] proper physical planning and with firm linkages with other sectors of the economy like agriculture, small business, fisheries etc." (Government of Grenada, 1990a: 242).

#### Growth in tourism is planned to occur in a

"co-ordinated manner, and concordant with the infrastructural development of the nation, closely linked to preservation of the environment and supported by appropriate legislation. Thus the increased tourist population will not create undue strain on the nation's resources and infrastructure and so exceed its carrying capacity (Government of Grenada: Tourism Plan, 1990a).

The emphasis is on the promotion of private sector investment in hotel and recreational facilities through the provision of adequate fiscal incentives, the implementation of improved management and administration, provision of human resource training, the development of infrastructure to keep pace with tourism growth, and the protection of Grenada's environment (Government of Grenada, 1990a).

Over the next five years (1995-2000), tourism growth is projected at 12 percent annually. In order to accommodate this rate of expansion, approximately 1000 additional hotel rooms would be required, in addition to tourism infrastructural amenities such as marinas and cruise ship berthing facilities (Government of Grenada, 1994). It is envisaged that the package of incentives, discussed above, together with concessions on the purchase of beach front properties, the encouragement of charter flights and concessions for speciality attractions will be sufficient to attract large scale up-market properties.

Efforts are currently under way to consolidate and maintain the growth in stay-over visitor arrivals to the island. Duggal (1990) projected an annual increase in arrivals of twenty percent, stabilizing at 168,000 in 1996. It is anticipated that 113,000 of these will demand

commercial accommodation (Duggal, 1990: 14). Aspects of this action plan include an improved promotion and marketing drive. The marketing effort is undertaken with assistance from the EEC, USAID in association with the Caribbean Hotel Association, American Airlines, BWIA and British Airways. The focus is on special niches markets such as diving, sailing groups, and "Soft Eco-tourist" markets. In 1995, an attempt at testing the feasibility of direct marketing to middle to high income neighborhoods in Canada and Europe will be made (Lashley, 1993).

A statutory corporation, the Grenada Board of Tourism (GBT) established in 1991, now manages and administers the tourism industry replacing the Grenada Tourist Board and the Ministry of Tourism. In addition to its management responsibilities, the new Board has full responsibility for maintaining product quality (hotels, airport, taxi services etc.) and marketing and promotion in accordance with the policy guidelines laid out by the Government. The Ministry of Tourism however, has day to day management responsibility for tourist attractions including beaches, national parks and protected areas.

Another critical factor highlighted in the action plan is the need for labor training in all aspects of the tourism industry to cope adequately with the anticipated expansion in the sector. The GBT has, since 1994, concentrated on the implementation of an extensive five year programme in which front line workers within the industry (tour guides, taxi operators, vendors, accommodation workers) will be trained and certified. Funding for this programme is provided by the Canadian Government through its Caribbean Training and Awards Program (CTAP). This program also offers long term training through attachments in Canada and the other Caribbean islands for hotel managers, accountants and other management personnel.

In light of the economy's poor performance, there has been little improvement in infrastructure development, particularly the production and distribution of domestic water supply to the expanding tourism industry. The generation of electricity is however, projected to keep pace with the increased demand over the next five years (Bowen, 1994). A major waste

collection and disposal project has only recently been completed to service the high density tourism area (Figure 4.3). However, it is not yet clear what impact this will have on the water pollution problems in the areas since the raw sewage is not treated before disposal into the ocean. It is clear that the necessary "water supply" infrastructure has not keep pace with the rate of short term growth and expansion of the tourism industry.

The final area of emphasis in the Government's development strategy is the upgrading and maintenance of tourist attractions and the preservation of the environment through adequate programmes and legislation. The importance of the natural environment to the nation's economic viability is also recognized by the policy makers. Also acknowledged is the environmental degradation that could ensue from inadequate management of the natural resources and failure to intervene in the many resource use conflicts that have emerged.

Within this framework, the enhancement and conservation of renewable resources constitute a vital objective. Grenada's limited and fragile resource base necessitates that stringent conservation measures be employed. Also important is the management of life support systems such as coral reefs and soils to ensure that optimum conditions exist for the conservation of living resources. To ensure continued growth and profitability of the tourism industry an integrated approach to tourism development is recommended. It is stated that:

Cognizant of the socio-cultural and environmental degradation that could ensue as a result of tourist-related activities, the Grenada Board of Tourism, has formulated a strategy that seeks to maintain the nation's ecological, cultural and social integrity, while maximizing the economic benefits of tourism development (OAS, 1986: 11).

In an effort to maintain the nation's ecological, cultural and social integrity, and diversify the tourism product, the Organization of American States (OAS, 1986) was invited to compile an inventory of sites requiring conservation management to be incorporated into a system of protected areas for Grenada and Carriacou. They included representations of geological formations, habitats (particularly those of threatened or endangered species) and ecosystems. Sites and objects reflecting the islands' cultural, historic and archaeologic heritage were also included. Act 42 of 1990 seeks to provide the necessary legal framework for the establishment of the proposed system of national parks and protected areas (Darbeau, 1992).

Four national parks, nine natural landmarks, fifteen protected seascapes, eleven cultural landmarks and five multiple use management areas were identified. These total approximately 4.5 thousand hectares, representing about 13 percent of the total land surface area. Other sites (Figure 4.3) have since been added to the proposed system including an arid scrub woodland area, the main habitat of the native Grenada dove.

Several Amerindian archaeological sites also exist in Grenada and Carriacou, some of which are included in the proposed plan. The islands boast a rich historical heritage. This is reflected in the number of colonial fortifications and buildings of outstanding architectural design, dating back to the French occupation of the island. The predominant architectural style is Georgian but Victorian, Greek and Gothic revival features are also in evidence. Most of the historical buildings are located in the commercial St. George's district, which imparts a quaint character to the town. St. George's was nominated as a monument of the wider Caribbean in observance of the quincentennial of the arrival of Columbus. To maintain the historical ambience of the town architectural guidelines for the construction and renovation of buildings in the town of St. George's have been established (Burr, 1988).

## 4.6 THE RESOURCE BASE: AN OVERVIEW

Grenada continues to depend on the ubiquitous sun, sea and sand as its drawing card for tourists; however, there is a gradual diversification towards more "human" (historic and cultural features) and "nature" (forest, coral reef, wildlife etc.) focused attractions. Inevitably this policy direction leads to conflicts between uses. There is intense competition between sectors for use and control of the limited available land and water resources. For example, there is direct competition between tourism and agriculture and between short term 'consumptive' and longer term 'sustainable' uses within both the flat coastal zone and highland rainforest areas.

Grenada has traditionally been promoted as a winter beach destination, and consciously sells sun, sea and sand. This approach necessitates the concentration of the infrastructure and related activities within the coastal zone where most of the flat lands are located. These areas are however, ideally suited for many other economic activities such as large scale mechanized agriculture and industrial or housing development projects. The land use pressures, therefore, are concentrated mainly within the coastal zone.

In recent years however, the Government has moved towards the diversification of its tourism product; instead of focusing on only lovers of sun, sea and sand it is now catering to a more "nature-culture" oriented clientele. This necessitates the opening up of the mountains, lakes and waterfalls and unique villages within remote areas of the island's interior to visitors. Natural and cultural attractions have been developed in an effort to cater to the specialized needs of more active, information seeking visitors. The major activities outside the traditional tourism zone, (Figure 4.3: Zone 1; South West Grenada) include sailing, scuba diving, snorkeling, hiking, birdwatching and sightseeing within the system of national parks and protected areas.

This change in policy came because of the need to spread tourism's benefits outside the traditional tourism zone (Grand Anse Beach Area) and provide more activities so as to encourage the visitor to stay longer and thus increase spending. This is also a response to the growing promotion and popularity of " eco-tourism" or "alternative" tourism. These types of tourism have the potential to intensify the competition for the use of the available land and water resources. For example, natural rainforest areas that once served principally as domestic water collection catchments are now used to provide outdoor recreation to improve and enhance visitor appreciation and satisfaction. Beaches, once used solely by seine fishermen, reefs used for spear

fishing and forest and agricultural areas are now also increasingly used by tourists for activities like snorkeling and birdwatching. At the same time however the diversification of the tourism product has served to motivate and promote the conservation and protection of these resources (Vincent et al, 1993).

Management of the Coastal zone is unquestionably the most challenging undertaking for any developing small island nation (Chambers, 1984). There is considerable variation in the geophysical features of the coastline around the island. The north and east coasts are comprised of long straight beaches separated by rocky promontories, while the west coast is characterized by mainly sandy beaches, disrupted by stretches of vertical cliff face. Some forty-five sandy beaches can be found along the nation's coastline. White sand beaches, of mainly coral origin, occur in the northern and southern portions of the island. Black sand beaches formed from volcanic deposits are found in the central part of the island on both the east and west coasts. These are used primarily for local recreation, tourism, and fishing-related activities and provide seclusion and sheltered anchorages for yachts. These coastal areas are therefore, ideal for enclave resort development and offer great potential for marina construction.

Over the years, the coastline and particularly the beaches have come under great stress from both natural and human induced action. An OAS sponsored survey conducted between 1970 and 1982 (Jackson <u>et al</u>, 1983) first highlighted the issue when it reported an average annual erosion rate of 0.7 and 1.5 meters on Grand Anse and Levera beaches respectively. Later, Frederick (1987) estimated that approximately thirty meters of beach have eroded island wide over the last fifty years. These together with an OAS funded beach erosion monitoring project served to highlight the extent of the problem (Chambers, 1986).

It is, however, generally agreed that no single factor is responsible for that rate of coastal erosion. Several likely causative agents have been identified. Among them are naturally occurring phenomena such as land subsidence or other seismically related activities, sea-level rises due to global warming, winter swells, hurricanes and the alteration in sea current patterns due to changes in global climatic conditions.

Another critical contributing factor is sand mining. No inland deposits of sand occur on the islands, therefore coastal sand deposits are mined primarily as fine aggregate for construction purposes. The current demand for sand is estimated at approximately 150,000 tons annually (Country Environmental Profile, 1992). This is expected to increase, since the beaches are presently the only source of fine aggregates, for construction and physical infrastructure development purposes. In an attempt to resolve this impasse, alternative sources of sand have been proposed, however none of these alternatives have proven to be financially viable.

In the meantime only four beaches are designated as sources of sand; however, the demand is expected to surpass the sand available at these sites very soon (Pitt, 1994). In spite of the seriousness of the problem no efforts are made to enforce the laws and regulations regarding the illegal removal of sand from beaches.

Another environmental problem affecting the diversification of the tourism industry is deforestation. The remaining virgin forest cover, estimated at about 1000 hectares (2,500 acres) or three percent of the land surface, is confined to the Grand Etang National Park within the central highlands. Although no data exist as to the extent of deforestation, it is perceived by the Forestry Department as being fairly extensive (Thomas, 1994). It is reported that the deep rooted trees are being removed at an unprecedented rate mainly for vegetable farming and charcoal production. Large tracts of the central interior together with areas of the protective mangrove shield at the shoreline have been destroyed.

A major consequence of deforestation is reduced water-holding capacity of the soil, contributing to decreased ground water recharge. This promotes arid conditions in the dry season. In the wetter months, the rain striking the exposed soil leads to rapid erosion of hill sides washing away the nutrient-rich top soil, and reducing the land productivity. The resulting siltation of reservoirs and watercourses reduces their water holding capacity. A heavy sediment load is also discharged into the marine environment blocking the sunlight, vital for the growth of coral reefs. The sedimentation of suspended soil particles eventually smother coral polyps, contributing to reef deterioration, beach erosion and decreased fisheries potential. The deteriorated conditions of some nearshore reefs on the island's southwest are attributed to deforestation in the uplands (Hunte, 1987).

The extinction of several terrestrial species including; Shaw's racer snake, <u>Liophis</u> <u>melanotus</u>, the agouti, <u>Dasyprocta albida</u>, and the Grenada parrot <u>Amazona</u> sp. and threats to others like the Grenada dove, <u>Leptotila wellsi</u>, can be directly attributed to forest habitat destruction. The dove, the national bird of Grenada, is also facing extinction because of tourism development. Its habitat is confined to a 25 square kilometer area, containing dry shrub forest located within the coastal belt of the prime tourism area. Approval in principle has already been given for the construction of a 150 room luxury resort hotel complete with eighteen hole golf course within the doves' habitat (Figure 4.3). The population estimated at only 90 doves (Blockstein, 1991) has also become an attraction to bird watching tourists.

In the nearshore zone, three distinct ecosystems are discernable. The sea grass meadows, coral reefs and mangroves are inextricably linked, and the interactions therein ensure protection and nutrition for some 300 varieties of commercially important near shore fish species (Caribbean Conservation Association, 1982). Though little research has been done, islandwide the reef ecosystems are believed to be threatened mainly from upland activities, including soil erosion, pesticide use and sewage and garbage disposal. Reef damage from natural disasters such as storms aggravates the situation. Other factors contributing to mechanical damage to reefs include reef walking and anchor damage, mainly from tourism activities.

A study conducted by Hunte (1987), revealed that the near shore reefs in the Grand Anse Bay are highly stressed. This was manifested by low diversity of coral species (the finger coral, <u>porites porites</u>, being dominant), algal overgrowth and decreased diversity with abundant sponge growth. Generally, the Grand Anse offshore reefs at the three fathom and six fathom banks were reported as being in good condition.

The coastal mangrove forests, estimated at 190 hectares, (0.06 percent of the island's total land area) also create a habitat for wildlife, a nursery for juvenile fish and shellfish, and form a vital link in the marine food web. The continued existence of the mangrove forest is vital to the survival of the inshore fishing industry.

Waste disposal into the coastal and marine environment has contributed greatly to the deteriorating condition of marine resources. The sewage collection system, with pipeline diameters ranging from 127 to 178 mm, was installed in the 1930s. Since then, severe deterioration of the system has occurred, leading to reduced bore and damaged pipes. In 1988 the system was upgraded by the installation of a 380 meter (1,250') marine outfall outside the capital, St. George's, from which untreated sewage is discharged into the sea at a depth of twenty- five meter (85 feet).

The most common form of sewage disposal is however, the septic tank with a subsoil absorption system. This is generally regarded as an effective on-site water borne disposal system, where the soil permits adequate absorption of effluent. However, in low-lying coastal areas, they function with limited efficiency, and have been a source of pollution and pathogen dissemination (Hunte, 1987).

Waste water from households flows through a network of open drainage channels, into watercourses and ultimately reaches the sea. Together with septic tank leachate, such effluent could cause considerable pollution of water bodies in heavily populated districts. This situation



exists throughout the island, but is particularly problematic on the southwest coast of the island (Figure 4.3). In addition, raw sewage from yachts without holding tanks, berthed at the nearby marina, would inevitably be deposited in the coastal waters as no land-based sewage treatment or disposal facility exists on the island.

The increased nutrient load promotes eutrophication leading periodically to massive algal blooms being deposited at the shoreline. Apart from significantly detracting from the aesthetic value of the area, the decaying algal mass increases the Biological Oxygen Demand (BOD), creating anoxic conditions inimical to the survival of marine fauna including commercially valuable fish species and reef building organisms. Therefore, the fisheries potential as well as the protection of the shoreline could be affected.

The prognosis for reef recovery does not appear favorable (Darbeau, 1992). It is estimated that the regenerative period could be several decades. The impact of inadequate sewage disposal on tourism, human health and coastal development is of major concern to the government, tourism managers, public health authorities and natural resource managers. The coastal environment, particularly the coral reefs and beaches, is essential to the continued expansion of the tourist sector. In addition, the loss of beach and beach-front property due to coral reef degradation from sewage pollution could have severe economic implications.

The island's fresh water supply is obtained mainly from surface waters collected from rivers, ponds and streams. In the drier months (January to June) the supply is supplemented by underground wells. Surface water is filtered, then subjected to a series of further treatment, including coagulation and chlorination. Chlorination is usually the sole treatment applied to water extracted from underground. The development plans for the statutory water agency, NAWASA, include extending and upgrading existing plants and establishing new systems (NAWASA, 1990). An ambitious project to be undertaken in this regard involves the use of a volcanic crater lake in the island's interior, to recharge decreased volume of a catchment river during the drier

months of the year. The semi-arid south supports a concentration of industries, housing developments and hotels. Thus the localized demand for water is particularly high and has increased considerably over the last five years. As pointed out above the implementation of these plans all depends on foreign capital which is subject to improvement in the island's economic performance. The environmental research conducted as part of this thesis focuses on the important issue of fresh water.

In summary Grenada is facing difficult economic times. The tradition economic activities that once generated the necessary foreign exchange have failed over the past 10 years and prospects for recovery in the near future seem negligible. Tourism is the only industry that has shown constant growth over the past decade and has therefore, become the major engine of Grenada's economic growth and development efforts. It is however, recognized that to maintain the growth of tourism over an extended period efforts must be made to diversify the product and target new and appropriate market niches. In this competitive environment, the survival of small fragile island states depends on the destination's ability to maximize economic benefits and at the same time minimize environmental cost associated with tourism development. To accomplish this, one needs to acquire a better understanding of the tourism development process, particularly the impacts associated with different approaches. This is the focus of the following chapters.

# CHAPTER 5 MARKET ANALYSIS

#### 5.0 INTRODUCTION

"regional tourism development should be examined not so much in relation to stages or styles but rather with respect to changes in demand and consumer preferences" (Poon, 1994: 2).

This chapter presents the results of two separate tourist demand/market analyses; one based on visitors' observed behavior, the other on the results of tourists' likely behavior, based on hypothetical choices in a discrete choice experiment. It attempts to uncover both the revealed preferences of visitors to Grenada and the stated preference and choice of potential visitors from the Toronto metropolitan area. The objectives are;

- to help us understand better why people visit Grenada, what their characteristics and spatial behavior are while on the island and more importantly, what market segments the destination attracts.
- to examine the applicability and usefulness of the "stated preference" experimental design technique (discrete choice experiment), in establishing the importance of specific destination characteristics in the visitor's choice process.

With a better understanding of the choice process, it may prove possible to design and promote destinations that can better satisfy the demands of expanding market niches. When the sustainability of island tourism destinations is examined, it is of critical importance to first examine the sustainability of demand for without continued visitation the destination's viability and survival are questionable. Sustainability of demand is therefore, a critical part of the sustainability equation. Ecotourism, for example, is of no real use unless potential visitors demand it, at the same time mass tourism cannot be maintained without mass demand.

The first section examines visitors' socio-economic and demographic characteristics and then divides them into identifiable market segments. The results of 1988 and 1992 surveys are then compared, with specific reference to changes in motivation, activities undertaken and visitor demographics. This is followed by a short discussion of the evolution of the discrete choice experiment and its applicability to tourism studies. After the design and survey procedures are outlined, the results of the experiment are presented. The chapter ends with a few hypothetical examples which serve to indicate the usefulness and practical application of the discrete choice experiment. These serve to demonstrate the technique's usefulness for measuring potential visitor choices in terms of individual attributes that comprise a destination and also of existing and hypothetical destinations.

#### 5.1 THE TOURIST: WHO'S WHO

This overview of the characteristics of the visitors attracted to Grenada is derived from two separate and independently administered expenditure surveys conducted during the calendar years 1988 and 1992. One major difference between the samples is the percentage of respondents resident in the U.S.A. Although both data sets included significant numbers of Canadians, North Americans and Europeans, visitors from the Caribbean were generally under-represented. The surveys, however, did not specifically consider returning nationals living abroad, a statistic indicated in GBT annual statistical reports.

The surveys contained many identical questions (Appendix 1a and 1b), used similar sampling procedures and have produced comparable visitor profiles (Tables 5.1, 5.2, 5.3). A comparison of some key elements of the data sets from the 1988 and 1992 questionnaires

using the t-test also showed no statistically significant differences between the means of the variables; total daily expenditure (p > 0.334) and accommodation cost (p > 0.2712). It is therefore possible to directly compare the two groups.

#### TABLE 5.1 SAMPLE SIZE AND DISTRIBUTION

| ORIGIN              | 1           | 988  | 19  | <u>992</u> |
|---------------------|-------------|------|-----|------------|
|                     | No.         | %    | No. | %          |
| U.S.A.              | 544         | 55.2 | 392 | 42.1       |
| Canada              | 153         | 15.5 | 116 | 12.5       |
| U.K.                | 128         | 13.0 | 218 | 23.4       |
| Europe              | 77          | 7.8  | 90  | 9.7        |
| Caribbean           | 75          | 7.6  | 111 | 11.9       |
| Source: 1988 and 19 | 992 surveys |      |     |            |

The surveys addressed a number of themes (Appendix 1a and 1b), including:

- (a) demographics, length of stay and accommodation type;
- (b) information sources, trip planning horizons and reasons for destination choice;
- (c) satisfaction, attitudes toward product quality;
- (d) expenditure; together with
- (e) attractions visited and activities undertaken while on vacation. (See Tables 5.2 5.4)

The comparison of other tourist characteristics based on the 1988 and 1992 surveys reveals some interesting trends (Table 5.2). In 1992, 28% of all visitors had visited Grenada at least once before. While this is a figure that the tourism industry can be very proud of, it is somewhat worrying to see that the figure in 1988 was 35%. Approximately half of the return visitors had visited Grenada three or more times - a figure that has remained fairly constant over the period.

#### TABLE 5.2 VISITORS TRAVEL PATTERN(1988 & 1992)

|                             | <u>1988</u> |      | <u>1992</u> |      |
|-----------------------------|-------------|------|-------------|------|
| (1) Prior Grenada Visits:   | No.         | %    | No.         | %    |
| None                        | 602         | 64.7 | 705         | 71.7 |
| Yes                         | 329         | 35.3 | 278         | 28.3 |
| Once or Twice               | 153         | 17.9 | 144         | 14.7 |
| 3 - 5 Times                 | 89          | 10.4 | 91          | 9.3  |
| More than 5 Times           | 60          | 8.9  | 52          | 5.1  |
| (2) Prior Caribbean Visits: |             |      |             |      |
| None                        | n.a         | n.a  | 207         | 21.3 |
| One or Two                  | n.a         | n.a  | 178         | 18.4 |
| 3 - 5 Times                 | n.a         | n.a  | 272         | 31.1 |
| More than 5 Times           | n.a         | n.a  | 316         | 29.8 |
| (3) Vacation Type:          |             |      |             |      |
| Single Destination          | 615         | 66.6 | 597         | 61.0 |
| Multiple Destination        | 309         | 33.4 | 386         | 39.0 |
| Package Holiday             | 260         | 27.9 | 398         | 40.8 |
| FIT*                        | 671         | 72.1 | 578         | 59.2 |

<sup>\*=</sup> Free and Independent Travel, n.a = Not Asked Source 1988 and 1992 surveys.

Only 21% of visitors had never visited the Caribbean before, with more than 60% having made three or more visits, suggesting that Grenada is not a typical first destination for visitors to the Caribbean. It is interesting to note that the percentage of those traveling on a multi-destination holiday increased by nearly 18% during the four year period. Such travelers now account for 39% of the island's visitors. The role of package based tourism also increased significantly; rising from 27% of visitors in 1988 to over 40% by 1992.

These trends reflect an increasing interest on the part of tour operators in selling Grenada as part of flexible multi-island package and a growing demand for those types of holidays. Packages also have become slightly more inclusive over the period. This is indicated by the growth of packages that include ground transfers, local tours and exit taxes. It has been reported (Fletcher, 1994) that the Caribbean packages (including air, accommodation, meals and transfers) originating in Europe, are sometimes cheaper than the cost of air fare only. Therefore most independent Travelers (ITs) are encouraged to purchase packages as the best means of securing a seat on the twice weekly British Airways flights, the only direct long range flights to Grenada.

TABLE 5.3

| SOME S | SOCIO- | DEMOGR | APHIC IN | <b>IDICATORS</b> | (1988 & | 1992 |
|--------|--------|--------|----------|------------------|---------|------|
|        |        |        |          |                  | 1       |      |

|                     | 1988          |            | <u>19</u> | 92       |
|---------------------|---------------|------------|-----------|----------|
|                     | No.           | %          | No.       | <u>%</u> |
| (1) AGE             |               |            |           |          |
| <25 Years old       | 59            | 6.3        | 65        | 6.6      |
| 26-35 •             | 209           | 22.4       | 234       | 23.8     |
| 36-49 *             | 362           | 38.9       | 414       | 42.5     |
| 50-64 •             | 231           | 24.8       | 211       | 21.7     |
| >65 *               | 70            | 7.5        | 48        | 4.9      |
| (2) ANNUAL FAMILY I | NCOME (\$U.S) |            |           |          |
| < 19,999            | 1.2           | <b>n.a</b> | 90        | 8.2      |
| 20 - 29,999         | <b>D.2</b>    | <b>D.2</b> | 157       | 16.2     |
| 30 - 39,999         | <b>D.</b> 2   | <b>n.2</b> | 160       | 16.4     |
| 40 - 59,999         | <b>D.2</b>    | n.2        | 169       | 17.3     |
| > 60,000            | 1.2           | <b>D.2</b> | 402       | 41.1     |
| (3) EDUCATION       |               |            |           |          |
| High School         | <b>D.2</b>    | <u>n.2</u> | 138       | 14.0     |
| College             | <b>n.</b> 8   | <b>D.2</b> | 372       | 37.8     |
| University          | D.R           | 1.1        | 473       | 48.1     |
| n.a = Not Asked     |               |            |           |          |

Source 1988 and 1992 surveys.

In spite of the increase in packages offered to Grenada, it is clear that most of the visitors surveyed are still independent travelers (ITs) or make independent accommodation arrangements. Approximately 41% of all visitors had family incomes of greater than US \$60,000, while those earning less than US \$30,000 accounted for fewer than a quarter of all visitors (Table 5.3). Also significant is the revelation that Grenada's clientele are very well educated with 48%
having some form of university (or equivalent) qualification. Those with only high school qualifications account for less than 15% of visitors (Table 5.3).

Word of mouth ranked first as the major source of information on Grenada for most visitors (Table 5.4). 'Other' sources (books, government information offices etc) also ranked highly in all but the Canadian market. The least important sources of information are TV and newspapers, while magazines and travel agents ranked third and fourth respectively. Travel agents seem to play a slightly more significant role in the case of Canadians as a source of information on the island's product. The survey also determined that the island's natural beauty, unspoilt environment, attractive beaches and friendly people are the most important factors influencing visitors' choice of destination.

## TABLE 5.4 VISITOR INFORMATION SOURCES\*- 1992

| CATEGORY      | <u>U.S.A.</u> | CANADA | <u>U.K.</u> | EUROPE |
|---------------|---------------|--------|-------------|--------|
| Friends       | 3.5           | 3.89   | 3.24        | 3.42   |
| Travel Agents | 2.8           | 3.07   | 2.78        | 2.84   |
| Magazines     | 3.17          | 2.34   | 2.72        | 2.60   |
| Newspapers    | 2.03          | 1.91   | 1.75        | 1.90   |
| T.V.          | 1.63          | 1.26   | 2.00        | 1.95   |
| Other Sources | 4.65          | 2.43   | 3.72        | 4.51   |

\* rated on a scale of 1 = not important to 5 = very important Source: 1992 survey.

European customers tended to consider the South Pacific and Indian Ocean islands as their major alternatives in choosing a holiday destination, with the regional competitors being St. Lucia, Barbados and Antigua (Table 5.5). For UK and Canadian residents Antigua, St Lucia and Barbados are the other Caribbean destinations considered. Americans' choice set included Anguilla, St Lucia and Bermuda together with the two most well known yachting destinations, the British Virgin Islands and the Grenadines. Mexico also featured highly among this group (Table 5.5).

#### TABLE 5.5

ALTERNATIVE DESTINATIONS CONSIDERED-1992

(while deciding on the vacation destination)

|                      | Americans | <u>Canadians</u> | <u>British</u> | Oth, Europe |
|----------------------|-----------|------------------|----------------|-------------|
| Alternatives         | No.       | No.              | No.            | No.         |
| Mexico               | 35        | 5                | 1              | 3           |
| South Pacific        | 3         | -                | 9              | 28          |
| Antigua              | 25        | 14               | 17             | 5           |
| Anguilla             | 32        | 10               | 9              | 1           |
| St. Martin           | 26        | 28               | 1              | -           |
| St. Lucia            | 51        | 23               | 19             | 8           |
| B.V.I.               | 44        | -                | 4              | 4           |
| Bermuda              | 28        | 16               | 3              | 1           |
| Grenadines           | 25        | -                | 4              | 3           |
| Barbados             | 16        | 17               | 10             | 8           |
| Source: 1992 surveys |           |                  |                |             |

#### TABLE 5.6 VACATIONERS SATISFACTION INDEX\*-1992

| Category             | American           | Canadian           | British    | Oth.Europe |
|----------------------|--------------------|--------------------|------------|------------|
| Airline              | 1.23               | 1.05               | 1.12       | 0.86       |
| Immigration          | 1.20               | 1.23               | 0.91       | 0.93       |
| Customs              | <b>n.a</b>         | <b>D.2</b>         | <b>D.2</b> | <b>n.a</b> |
| Accommodation        | 1.30               | 1.17               | 1.51       | 1.25       |
| Restaurant           | 1.12               | 1.01               | 1.07       | 0.93       |
| Night Life           | 0.73               | 0.52               | 0.57       | 0.53       |
| Yachting             | 1.31               | 0.85               | 1.21       | 1.20       |
| Beaches              | 1.48               | 1.62               | 1.44       | 1.47       |
| Tazi                 | 1.21               | 1.17               | 1.22       | 1.26       |
| Accom. Cost          | 1.11               | 0.86               | 1.03       | 0.75       |
| Meal Cost            | 0.90               | 0.60               | 0.86       | 0.77       |
| Total Cost           | n.a                | <b>D.2</b>         | <b>n.a</b> | <b>n.a</b> |
| *Rated on a scale of | 0=totally dissatis | fied to 2=satisfie | d          |            |

(Source: 1992 Survey Data)

By identifying Anguilla, St. Lucia and Bermuda (considered up-market destinations) and BVI and the Grenadines (established yachting centers) as key competitors we get a good sense of the kind of destinations with which Grenada is compared and some idea of the perceived image of the destination held by potential visitors. Satisfaction with the product and its various components appears to be high in most respects (Tables 5.6). Airline and immigration services were considered to be more than satisfactory although there was some deterioration in satisfaction among Europeans. This may be explained by the fact that European visitors are usually exhausted after being on the aircraft in excess of ten hours, after which they are made to wait a long time for customs and immigration clearance.

While visitors were generally happy with the quality of accommodation and restaurant operations, many, especially Europeans (non-British), commented on the poor quality of food and service received at the restaurants. A later question on the price-value relationship and satisfaction with the "value for money" offered by hotels and restaurants yielded a less than positive response, with the Europeans (non-UK) again being the least satisfied.

Water activities are generally viewed as extremely satisfactory as is the quality of the beaches. While only a few people filled in the questions on night life and entertainment, those that did were generally dissatisfied with what was available. The low response rate indicates an indifference to the availability, and a lack of concern for their existence. Visitors were also generally happy with the taxi services (Table 5.6). In general visitors' expectations were fulfilled and most (70%) expressed a willingness to recommend Grenada to friends and acquaintances.

Only the 1988 survey collected data on the activities undertaken by visitors. The results show that 90% of travelers visited historic St. George's, 70% spent at least 2 hours on the Grand Anse beach, 55% went to the Grand Etang National Park and 25% hiked to the Concord Falls. The most appreciated attractions were Grand Anse beach, Grand Etang Park, the city of St. George's and the Lanse-Aux Epines peninsula in that order (Figure 4.3). The popularity of the Grand Anse Beach is not surprising in light of the emphasis and promotion of the area. In spite of its poor accessibility, the Concord Falls are shown to be a very popular attraction. The fact that almost 25% of the sample visited the falls indicates the attractiveness of the unspoilt,

natural wilderness experience.

### TABLE 5.7 VACATIONERS MEAN LENGTH OF STAY (Days) (1988 & 1992)

|                    | <u>1988                                   </u> | <u>1992</u> |
|--------------------|--|-------------|
| U.S.A.             | 8.46   | 8.07        |
| Canada             | 11.79  | 13.80       |
| U.K.               | 15.62  | 11.27       |
| Europe             | 7.46   | 9.68        |
| Caribbean          | 6.30   | 9.08        |
| (Source 1988 and 1 | 992 Survey Data)                               |             |

The average length of stay by U.S and U.K. residents has fallen while that of the Canadians, Europeans and the Caribbean residents has shown a slight increase (Table 5.7). The surveys reveal that the average American visitor is 50-60 years old, takes shorter vacations and is more interested in hotel/beach based activities principally for rest and relaxation. The British and Canadians are on the average older (between 55-65), take longer vacations (11.3 and 12.3 days respectively), and take a keener interest in local cultural and nature oriented activities. The Europeans (mainly Germans) are significantly younger (between 40-50), spend more time in the country, and tend to be more outgoing active, and adventurous.

While the above data provide us with useful information on evolving tourist characteristics they do not really provide us with either a clear indication of how basic market segments have shifted over the years, or a better understanding of the visitor's preference and choice behavior.

## 5.2 MARKET SEGMENTATION

Market segmentation approaches based on familiarity and/or interaction between variables

include *a priori* and *cluster* (a posteriori) segmentation. The first method takes specific variables related to the product (usage, loyalty, etc.) or to the general consumer characteristics (sociodemographics) as the basis for segmentation. In this case the decision regarding the basis for segmentation is made beforehand (Weber, 1992). Such an approach is quite frequently used in tourism analysis.

In the last decade, however, an increasing number of researchers have looked toward cluster segmentation. Cluster models differ from a priori models in that the number and type of segments is not known beforehand but is determined from the grouping of respondents according to similarities relating to a certain group of variables. While this type of segmentation yields more objective results, it also imposes significant data requirements and requires some degree of statistical knowledge on the part of the researcher (Weber, 1992).

The most commonly used variables in distinguishing between groups of tourists are geographic, demographic and socio-economic. One of the main reasons for the frequent choice of these variables is the fact that they are more readily collected and are also relatively simple to analyze and interpret. While the above variables are still important, there is a growing recognition that in many cases they do not adequately differentiate segments.

Segmentation using psychographic variables strives to determine why people travel and what their preferences, motivations and opinions are. In addition, it attempts to explain the factors that lead individuals to behave in a certain manner (Darden, et al, 1975; Buttle, 1986; Weber, 1989). Similarly, 'benefit segmentation' groups tourists in relation to the benefits desired or sought from using a product or service. Numerous studies (Goodrich, 1980; Kaynak and Yavas, 1981; Haley, 1968; Morsey and McCool, 1990; Shoemaker, 1989) confirm the hypothesis that benefits expected from a travel experience influence the traveler's choice of destination and activities undertaken while there (Weber, 1992:4). The preferred method of segmentation is cluster analysis (Vlitos-Rowe, 1993; Vanhove, 1989; Morsey and McCool 1990), in which the segments are described by demographic and psychographic variables. Within the last decade, this method has grown increasingly popular for formulating marketing strategies, for market positioning and for the introduction of new products (Jurowski et al 1993; Fitzgibbon, 1989).

Benefit segmentation of the 1988 sample was based on the degree to which individuals sought the following features; natural attractions, climate, peace and quiet, environment, beautiful beaches, visiting friends and relatives, sailing, vacation cost or for business purposes (Appendix 1b). For the 1992 data set, the variables used were; natural beauty, peace and quiet, unspoilt environment, special events, sailing, water sports, friendly people, shopping, quality of service, beaches and vacation cost (Appendix 1a). The value of this approach lies in its ability to give us a 'total package' of benefits that differentiate one segment from another. Understanding the package of benefits sought and satisfaction gained by various segments enables resource managers, planners and marketing professionals to design and promote products and services that are preferred by target segments (Jurowski et al, 1993: 3).

The FASTCLUS method within the SAS statistical package was used for the analysis. Using this method, it is necessary to decide on the number of clusters beforehand -in this case 2-, 3-, 4- and 5- cluster solutions were tried. For each cluster solution, the cluster frequencies (i.e the number of respondents assigned to each cluster) and means for each variable used in the analysis were determined. The validity of each cluster solution was then tested using discriminant analysis where the dependent variable was the cluster assigned for each respondent. The independent variables were the original benefit variables that were used in the segmentation plus all socio-demographic, expenditure, activities and satisfaction-based variables. Finally, appropriate statistical procedures (ANOVA, t-test, and Chi-Square) were employed to determine the variables that differed significantly between clusters.

## <u>TABLE 5.8</u>

FREQUENCIES AND MEANS OF DISTINGUISHING VARIABLES-1988

(N.B all distinguishing variables have statistically significant differences)

|                        | CLUSTER              | CLUSTER                       | CLUSTER                      |
|------------------------|----------------------|-------------------------------|------------------------------|
| (% of respon           | idents in cluster)(9 | 6 of respondents in cluster)( | % of respondents in cluster) |
| • •                    | 1                    | 2                             | 3                            |
|                        | N=401                | N=441                         | N=80                         |
| (a) Prior visits:****  |                      |                               |                              |
| None                   | 56                   | 75                            | 38                           |
| < Twice                | 21                   | 16                            | 37                           |
| > Twice                | 17                   | 8                             | 24                           |
| (b) Time spent:****    |                      |                               |                              |
| < 2 days               | 17                   | 12                            | 12                           |
| 3 - 8 days             | 51                   | 49                            | 37                           |
| 8 -16 days             | 20                   | 26                            | 23                           |
| >16 days               | 12                   | 13                            | 19                           |
| • Country of           |                      |                               |                              |
| Residence: **          |                      |                               |                              |
| U.S.A.                 | 37                   | 46                            | 38                           |
| Canada                 | 12                   | 13                            | 8                            |
| U.K.                   | 20                   | 25                            | 27                           |
| Europe                 | 10                   | 8                             | 12                           |
| Caribbean              | 18                   | 5                             | 12                           |
| (d) Package: *, ***    |                      |                               |                              |
| No.                    | 80                   | 62                            | 82                           |
| Yes                    | 19                   | 37                            | 17                           |
| (e) Expenditure:       |                      |                               |                              |
| (Per Person/Day) \$U.S | S                    |                               |                              |
| Total Expenditure *    | 110.24               | 92.45                         | 87.20                        |
| Accommodation *, **    | 60.72                | 44.88                         | 39.57                        |
| Mcals *, **            | 25.77                | 20.16                         | 17.08                        |
| Yachting**, ***        | 4.07                 | 16.63                         | 1.12                         |
| Taxi                   | 12.18                | 9.62                          | 10.53                        |
| Entertainment + +++    | 3.02                 | 3.33                          | 5.20                         |
| Shopping               | 11.24                | 9.16                          | 9.95                         |
| Other ****             | 5.71                 | 3.21                          | 11.83                        |

Clusters 1 and 3 have statistically significant differences

\*\* - Clusters 1 and 2 have statistically significant differences

\*\*\* - Clusters 2 and 3 have statistically significant differences

\*\*\*\* - All clusters have statistically significant differences

It was determined that in every respect the three cluster solution was most appropriate. The three cluster solution provided marginally relevant market segments which were significantly different from each other in terms of their characteristics, easily identifiable and sufficiently large<sup>3</sup>.

The analysis of the 1988 data set indicates that there are three identifiable market segments of which cluster 1 comprises 43% or 401 persons, another 48% or 441 respondents are classified within cluster 2 and the remaining 9% of all respondents fall within the third category or cluster.

All socio-demographic, expenditure, activity and satisfaction variables were tested for significant differences between mean scores. Using ANOVA in association with the BON and TUKEY, one finds that the segments developed from the 1988 data set differ significantly in respect to: length of stay, frequency of visits, country of residence, package used, and expenditure patterns (Table 5.8).

The analysis reveals that, on average, members of cluster 1 have the highest total expenditure reflecting high spending on accommodation and meals. These are all significantly different from the mean of members within cluster 3, the group with the lowest expenditure in each of the above categories. It is observed that the expenditure on entertainment and 'other' show statistically significant differences between each group of respondents.

The results also reveal significant difference in spending on yachting between clusters two and one and also between cluster two and cluster three, with members of cluster two spending much more than others. All clusters are significantly different in length of vacation.

<sup>&</sup>lt;sup>3</sup>Using 1988 data the 3- cluster solution's total error is 0.0154 as compared to 0.0446 for that of the 4- cluster solution. The total error of all other trials is significantly greater. Similarly, with the 1992 data set, the discriminant analysis showed a total error of 0.078 for the 3- cluster, and 0.132 for that of the 4- cluster solution. All other solutions produced slightly greater errors.

The analysis also indicates that there are differences between the means of the variables indicating: places visited, activities undertaken and level of satisfaction gained (Tables 5.9 - 5.11)

|                 | CLUSTER    | CLUSTER       | CLUSTER    |
|-----------------|------------|---------------|------------|
|                 | 1          | 2             | 3          |
|                 | Means      | Means         | Means      |
| St. George's    | .93        | -98           | .97        |
| Ft. George      | .26        | .25           | .30        |
| Bathway/Levera  | .07        | .19           | -11        |
| Concord Falls   | .34        | .39           | .42        |
| Grand Etang     |            |               |            |
| National Park   | -48        | .50           | .58        |
| Grand Anse      |            |               |            |
| Beach           | .93        | .95           | .92        |
| Annandale Falls | .26        | .27           | .31        |
| LaSagesse       |            |               |            |
| Nature Centre   | .15        | .30           | .23        |
| Time spent in   |            |               |            |
| national parks  | < 30 min.  | 30- 45 min.   | > 60min    |
| Most liked      | Grand Anse | Grand Etang   | Grand Anse |
| place           | Beach      | National Park | Beach      |

### TABLE 5.9 PLACES VISITED BY CLUSTER - 1988 SURVEY.

(0.0 indicates the individual has not visited the attraction while 1.0 shows he /or she has) Source: 1988 Survey Data

In regard to places visited, the City of St. George's and the Grand Anse beach are clearly the most popular tourist attractions on the island receiving more than 90% of all visitors within each cluster. This serves to highlight the importance of the Grand Anse beach to Grenada's tourism. Of greater interest is the fact that members of cluster 3 record the highest percentage visitation to the nature/culture oriented attractions; 42% visited the Concord Falls, 30% Annandale Falls, 30% the Levera park and 30 % Ft. George (see Figure 4.3) (Table 5.9). In addition this cluster, on average, spent a marginally longer time at the national parks. The activity index presented as Table 5.10 serves to distinguish further the nature of the clusters.



| TABLE 5.10     |            |               |
|----------------|------------|---------------|
| ACTIVITY INDEX | BY CLUSTER | - 1988 SURVEY |

|                        | CLUSTER                  | CLUSTER                     | <u>CLUSTER</u>     |  |
|------------------------|--------------------------|-----------------------------|--------------------|--|
|                        | 1                        | 2                           | 3                  |  |
|                        | Means                    | Means                       | Means              |  |
| Swimming               | 0.86                     | 0.81                        | 0.85               |  |
| Birding                | 0.19                     | 0.20                        | 0.25               |  |
| Snorkeling             | 0.25                     | 0.30                        | 0.38               |  |
| Sight seeing           | 0.69                     | 0.67                        | 0.76               |  |
| Hiking                 | 0.20                     | 0.25                        | 0.29               |  |
| Nature                 |                          |                             |                    |  |
| Photography            | 0.23                     | 0.26                        | 0.35               |  |
| Scuba Diving           | 0.07                     | 0.02                        | 0.07               |  |
| Other                  |                          |                             |                    |  |
| activities             | 0.17                     | 0.08                        | 0.17               |  |
| (0,0) indicates the in | dividual has not visited | the attraction while 1.0 sh | our he for the het |  |

(0.0 indicates the individual has not visited the attraction while 1.0 shows he /or she has) Source: 1988 Data Survey

#### TABLE 5.11 SATISFACTION INDEX BY CLUSTER - 1988 SURVEY

|                     | CLUSTER     | CLUSTER    | CLUSTER     |
|---------------------|-------------|------------|-------------|
|                     | 1           | 2          | 3           |
|                     | Means       | Means      | Means       |
| Airline             | 1.23        | 1.29       | 1.34        |
| Immigration         |             |            |             |
| /Customs *,***      | 1.51        | 1.43       | 1.70        |
| Accommodation *, ** | 1.61        | 1.75       | 1.73        |
| Restaurant          | 1.36        | 1.47       | 1.33        |
| Night Life *,**     | 0.77        | 1.00       | 1.02        |
| Yachting *, **      | 1.25        | 1.66       | 1.58        |
| Water Sports        | 1.45        | 1.56       | 1.37        |
| Attractions         | D.2         | <b>n.2</b> | <b>n.a</b>  |
| Shopping            | <b>D.2</b>  | D.2        | <u>n.a</u>  |
| Accom. Cost **      | 1.13        | 1.28       | 1.18        |
| Food Cost *, **     | 1.03        | 1.10       | 1.10        |
| Beaches             | 1.83        | 1.82       | 1.76        |
| Environment         | <u>11.8</u> | <b>D.2</b> | <b>n.</b> 2 |
| <b>March 1</b>      | A           |            |             |

(Based on a scale from 0 not satisfied to 2 very satisfied).

\* - Clusters 1 and 3 have statistically significant differences

\*\* - Clusters 1 and 2 have statistically significant differences

\*\*\* - Clusters 2 and 3 have statistically significant differences

\*\*\*\* - All clusters have statistically significant differences

Source: 1988 Survey Data

As expected, swimming and sight-seeing are the two most popular activities undertaken



by members of every cluster. However the analysis reveals that members of cluster 3 are more inclined to go bird watching (25%), snorkeling (38%), hiking (29%) and sight-seeing (76%) than members of other segments.

In general there is a high level of satisfaction with the quality of the beaches across all three clusters. However, there are significant differences in feelings toward quality of accommodation, night life, yachting and value of both accommodation and food (Table 5.11). Cluster 1 appears to be the most dissatisfied group particularly with cost of food and accommodation, while cluster 2 seems most satisfied with cost of accommodation and water based activities. This might be accounted for by the higher tendency of this group to use inclusive packages and on-board yacht accommodation.

On the basis of the above analysis, the 1988 survey respondents were classified into three distinct segments, the characteristics of which are presented below.

## Cluster #1. Less-active, rest and relaxation.

This category accounted for 43.5 percent of visitors surveyed in 1988. The group is more likely to be:

- \* first time visitors
- \* on a short stay (1-7 days)
- \* more likely to be from the U.S. or U.K.
- \* non-package takers
- \* high spenders on
  - \* accommodation
  - \* meals
  - \* total vacation
- \* most dissatisfied segment

### Cluster #2. Active water-based.

This group includes 47 percent of the 1988 sample. The distinguishing characteristics of the segment are:

\* relatively infrequent visitors

- \* longer staying (5-10 days)
- \* more likely from the U.S or Europe
- \* package buyers
- \* higher spenders on water oriented activities especially yachting

## Cluster #3. New-age (soft-adventure).

Members of this segment seek more diversified activities. They accounted for 10 percent of the sample and are characterized by:

- \* frequent visitors
- \* longer staying (8-16 days)
- \* from U.K and Europe
- \* non-package buyers
- \* higher spenders on entertainment and 'other' activities.
- \* more likely to engage in soft adventure

Members of this group are also more likely to visit the Grand Etang National Park, Concord and Annandale Falls and the Levera/Bathway region. In addition, their most likely activities are bird watching, sight-seeing, nature photography and hiking.

The 1992 data was clustered into three groups that closely resembled those listed above (with some small variation). For purposes of comparison similar segment labels are used. Nine percent of the respondents surveyed were identified as members of group 1, 65% were placed in group 2 while the remaining 26% were classified as members of group 3. A summary of variables recording significant statistical differences is presented in Tables 5.12 and 5.13. The results show that the variables; accommodation, meals, yachting, grocery shopping, sports and 'other' are the only ones with statistically significant differences in mean daily expenditure (Table 5.12).

In the case of accommodation, cluster 3 spent significantly more than other groups, while for grocery shopping cluster 1 spent nearly twice as much. Other significant variables include frequency of visits to Grenada, purpose of visit and type of vacation taken (package or non-



package) (Table 5.13).

Considerable differences in level of satisfaction, between clusters were also recorded (Table 5.14). Members of Cluster 1 show significantly less satisfaction with all variables except duty free shopping, and are particularly unhappy with the night life and cost of food. Cverall members of Clusters 2 and 3 are generally very satisfied with their holiday experience. However, cluster 2 shows greater satisfaction with yachting, water sports and the quality of the beach, while cluster 3 is more pleased with the accommodation, the quality of attractions and the environment.

### TABLE 5.12 MEAN DAILY EXPENDITURE (US\$) BY CLUSTER- 1992 SURVEY

|                       | CLUSTER | <b>CLUSTER</b> | CLUSTER |
|-----------------------|---------|----------------|---------|
|                       | 1       | 2              | 3       |
|                       | N = 83  | N = 621        | N = 251 |
| Total Expenditure     | 100.06  | 103.64         | 108.06  |
| Accommodation *, ***  | 48.85   | 46.06          | 54.60   |
| M=als +. +++          | 26.06   | 24.78          | 28.14   |
| Yachting *, **        | 2.07    | 14.18          | 8.02    |
| Taxi                  | 6.94    | 5.32           | 6.78    |
| Entertainment         | 1.72    | 1.10           | 0.68    |
| Duty Free Shopping    | 2.46    | 5.08           | 4.19    |
| Bar and Refreshment   | 6.33    | 8.30           | 7.97    |
| Grocery Shopping *,** | 8.14    | 4.17           | 4.10    |
| Car Rental            | 5.14    | 4.36           | 3.89    |
| Land Tours            | 0.87    | 3.26           | 2.38    |
| Sports **, ***        | 1.34    | 0.90           | 1.32    |
| Other **. ***         | 3.32    | 1.70           | 3.08    |

\* - Clusters 1 and 3 have statistically significant differences

- Clusters 1 and 2 have statistically significant differences

\*\*\* - Clusters 2 and 3 have statistically significant differences

\*\*\*\* - All clusters have statistically significant differences

Source: 1992 Survey Data

The results of the 1992 analysis show interesting similarities to those obtained from the 1988 data set: allowing the clusters to be defined and compared in a similar manner.

## TABLE 5.13

| DISTINGUISHING              | <u>G_VARIABLES</u>          | BY CLUSTE                 | <u>R - 1992 S</u>       | URVEY           |
|-----------------------------|-----------------------------|---------------------------|-------------------------|-----------------|
|                             | CLUSTER<br>1                | CLUSTER<br>2              | CLUSTER<br>3            |                 |
| (                           | % of respondents in cluster | ) (% of respondents in cl | luster) (% of responder | nts in cluster) |
|                             | N = 83                      | N = 621                   | N = 251                 |                 |
| (a) Prior visits            |                             |                           |                         |                 |
| to Grenada ****             | 2.54                        | 0.79                      | 1.19                    |                 |
| (b) Annual Income *, **     | 3.95                        | 4.73                      | 4.65                    |                 |
| (c) Country of Residence ** | ipa alpan alpan             |                           |                         |                 |
| U.S.A.                      | 49.4                        | 60.7                      | 45.0                    |                 |
| Canada                      | 7.2                         | 16.9                      | 15.1                    |                 |
| U.K.                        | 13.3                        | 11.4                      | 16.7                    |                 |
| Europe                      | 4.8                         | 5.6                       | 15.1                    |                 |
| Caribbean                   | 25.3                        | 5.3                       | 8.0                     |                 |
| (d) Package *,** No         | 79.0                        | 55.0                      | 61.0                    |                 |
| Yes                         | 21.0                        | 45.0                      | 39.0                    |                 |
| (e) Purpose of visit *,**   |                             |                           |                         |                 |
| Vacation                    | 29                          | 83                        | 76                      |                 |
| Business                    | 25                          | 6                         | 8                       |                 |
| Visiting friends            | 31                          | 7                         | 10                      |                 |
| Other                       | 14                          | 4                         | 6                       |                 |

Clusters 1 and 3 have statistically significant differences

\*\* - Clusters 1 and 2 have statistically significant differences

\*\*\* - Clusters 2 and 3 have statistically significant differences

\*\*\*\* - All clusters have statistically significant differences

Source: 1992 Survey Data

The 1992 segments are characterized as follows:

## Cluster #1. Less-active rest and relaxation visitor.

This group accounts for 9.5 percent of visitors in 1992 and is composed of individuals who are

more likely to be:

- \* frequent visitors for varying purposes
- \* slightly lower income than the average visitor
- \* U.S., U.K., and the Caribbean
- \* less likely to travel on an inclusive package



- \* the most dissatisfied of the tourist clusters
- \* the lowest spending

### Cluster #2. Active water-based holiday maker.

This group comprised 65 percent of the 1992 sample. The general characteristics are:

- \* infrequent vacationers
- \* inclusive package users
- \* highest income earners primarily from the U.S.A. and Canada
- \* spends significantly more than average- especially in the areas of accommodation, meals and yachting
- \* generally a satisfied group. Some dissatisfaction with the cost of food, the quality of the restaurants and night life.

#### TABLE 5.14 SATISFACTION INDEX BY CLUSTER - 1992 SURVEY

| CLUSTER | CLUSTER   | CLUSTER   |
|---------|---|---|
| 1       | 2   | 3   |
| Means   | Means   | Means   |
| N= 83   | N = 621   | N=251   |
| 1.01    | 1.29  | 1.38  |
| 0.82    | 1.09  | 1.06  |
| 0.43    | 0.70  | 0.52  |
| 0.70    | 1.29  | 0.92  |
| 0.78    | 1.15  | 0.90  |
| 1.18    | 1.47  | 1.55  |
| 0.72    | 0.83  | 0.70  |
| 0.83    | 1.03  | 1.00  |
| 0.56    | 0.85  | 0.84  |
| 1.27    | 1.53  | 1.52  |
| 1.13    | 1.31  | 1.34  |
|         | CLUSTER<br>1<br>Means<br>N = 83<br>1.01<br>0.82<br>0.43<br>0.70<br>0.78<br>1.18<br>0.72<br>0.83<br>0.56<br>1.27<br>1.13 | CLUSTERCLUSTER12MeansMeansN=83N=6211.011.290.821.090.430.700.701.290.781.151.181.470.720.830.831.030.560.851.271.531.131.31 |

(Based on a scale from 0 not satisfied to 2 very satisfied).

Clusters 1 and 3 have statistically significant differences

\*\* - Clusters 1 and 2 have statistically significant differences

\*\*\* - Clusters 2 and 3 have statistically significant differences

\*\*\*\* - All clusters have statistically significant differences

Source: 1992 Survey Data

## Cluster #3. New-age visitor (soft-adventure and special events).

This segment grew rapidly during the time period - accounting for 26 percent of the 1992 sample. This cluster is more likely to comprise individuals who are:



- \* vacationers from Canada, U.K., and Europe
- \* less likely to buy inclusive package tours
- \* high household incomes
- \* spend significantly more than the average guest
- \* generally a satisfied group but concern was expressed about the natural attractions, the quality of the environment and the accommodation.
- \* unhappy with the restaurants, the cost of food, nightlife and lack of shopping opportunity.

It is clear that within both data sets visitors are most satisfied with the beaches and the activities, like swimming, that take place on and around them. Across clusters, there is above average satisfaction with the quality of the beaches, accommodation, attractions and holiday environment, indicating that the island still has the image of a relatively unspoilt winter beach destination. There is, on the other hand, a below average satisfaction with the value-for-money for food, the lack of available night clubs and quality gift and souvenir shopping.

Perhaps the most significant opportunities offered in this part of the study are the ability to compare changes in visitor segments and map the shifts in demand during the four year period. A comparison of the two data sets reveals important similarities between the segments identified (Tables 5.15 and 5.16), there has clearly been a shift in the role that specific groups play in the overall market mix. Soft adventurers are clearly the fastest growing segment, while those interested in a limited activity, rest and relaxation vacation, have become significantly less important to the industry. It can also be argued that Segment #1; the rest and relaxation category as shown in the analysis of the 1988 data set, is now a more active group probably as a result of better access to and knowledge of the island's attractions. Since the instrument used in the 1992 survey contains more clearly defined variables indicating benefits sought, the segments are also more clearly distinguished.

The results of the analysis of the 1992 data set have served to separate the individuals on "vacation" (within clusters 2 & 3) from those visiting friends and relatives or on business (who are mainly within cluster 1).

## TABLE 5.15 CLUSTER DESCRIPTION - 1988 SURVEY

•

| Variables                   | CLUSTER 1   | CLUSTER 2  | CLUSTER 3   |
|-----------------------------|---|--|---|
| 1. Residence                | * U.S.; U.K.;Carib.   | * U.S.; Europe   | * U.K.;Europe; U.S.   |
| 2. Package                  | * Non-package   | * package  | * Non-package   |
| 3. Frequency<br>of visits   | <ul> <li>First time<br/>visitors</li> </ul>   | <ul> <li>First time<br/>visitor</li> </ul>                       | * More than<br>twice before   |
| 4. Income                   | <u>n.a</u>  | <b>n.</b> 2  | <b>D.2</b>  |
| 5. Days spent               | * Short stay<br>(1-8 days)  | * Short stay<br>(1-8 days)                                       | * Longer stay<br>8-21 days)   |
| 6. Expenditure              | * <u>Highest</u><br>-Total expenses<br>-accommodation<br>-meals   | * <u>Higher</u><br>-yachting<br>-other                           | * <u>Higher</u><br>-entertainment   |
| 7. Level of<br>satisfaction | * <u>Satisfied</u><br>-beaches (most)<br>-accom. (most)<br>-yachting<br>-water sports<br>-cust./immigration.        | * <u>Satisfied</u><br>all<br>all                                 | * <u>Satisfied</u><br>all<br>all  |
|                             | <ul> <li>Dissatisfied</li> <li>accom. cost</li> <li>vacation cost</li> <li>meal cost</li> <li>night life</li> </ul> | * <u>Dissatisfied</u><br>none<br>none                            | * <u>Dissatisfied</u><br>none<br>none                                     |
| 8. Places<br>visited        | * Grand Anse beach<br>* St. George  | * La Sagesse<br>* St. George<br>* Ft. Frederick<br>* Grand Etang | * Grand Etang<br>* Concord Falls<br>* Annandale Falls<br>* Levera Bathway |
| 9. Activities               | * Swimming  | * Sailing<br>* Snorkel<br>* Site seeing                          | * Bird watching<br>* Sight seeing<br>* Photography                        |

Source: 1992 Survey Data

The difference between clusters 2 and 3 is also striking. The great majority of the visitors within cluster 2, are seeking a water-oriented, reasonably active vacatio.. - these 'traditional' holiday makers made up the largest segment in 1992.

These people are mainly interested in sun, sea and sand vacations supplemented by yachting and snorkeling, and are more likely to use packages. Those include very popular 'flexible' packages, including those offered by "Moorings International" which allows one the option to sleep on a yacht, at the "Moorings Hotels" on either Grenada or St. Lucia or to use another participating hotel in Grenada.

Many members of this group also use specialized cruises that allow the option of two or seven days on the island at the beginning or end of the short cruise through the islands of the Eastern Caribbean. This has been made possible because Grenada is now the southern most "turn around" port for the "tall ship" luxury cruises. This increased flexibility in up-market packages serves to explain some of the increase in this segment, in spite of the limited growth in the traditional yachting sector. In addition, this group is more willing than before to explore inland activities and to learn more about the culture and history of the island.

Consistent with the 1988 results, segment 3 consists of visitors who are less likely to use all inclusive packages: although it is common to purchase the flight from a package tour company. The segment is made up mainly of high income earners who spend more than others on accommodation and meals and are very satisfied with their vacation. The members are very active and tend to have a greater appreciation for quality beaches, pristine natural environments and educational cultural attractions. Not surprisingly however, members of this cluster are younger, better educated and earn higher incomes.

## TABLE 5.16 CLUSTER DESCRIPTION - 1992 SURVEY

| Variables                   | CLUSTER 1   | CLUSTER 2   | CLUSTER 3  |
|-----------------------------|---|---|--|
| 1. Residence                | * U.S.; U.K.;Carib.   | * U.S.; Canadian  | * U.K.;Europe  |
| 2. Package                  | * Non-Package   | * Package   | * Non-package  |
| 3. Frequency<br>of visits   | <ul> <li>Frequent<br/>visitors</li> </ul>   | * First time<br>visitors  | * Once or<br>twice before  |
| 4. Income                   | * Lower income  | * High income   | * High income  |
| 5. Days spent               | <b>* n.a</b>  | * п.а   | * n.a  |
| 6. Expenditure              | * <u>High</u><br>- grocery<br>- taxi  | * <u>High</u><br>-total exp.<br>-meals<br>-accommodation<br>-yachting   | * <u>Highest</u><br>-total exp.<br>-meals<br>-accommodation  |
| 7. Level of<br>satisfaction | * <u>Satisfied</u><br>- beaches (most)<br>- attractions (most)<br>- accommodation<br>- Q. environment<br>-<br>-   | * <u>Satisfied</u><br>- beaches<br>- attractions<br>- accom. (most)<br>-<br>- water sports (most)<br>- yachting (most)<br>- restaurant (most) | * <u>Satisfied</u><br>- beaches<br>- attractions<br>-accom.<br>Qenviro.(most)<br>-<br>-  |
|                             | <ul> <li>Dissatisfied</li> <li>restaurants</li> <li>night life</li> <li>vacation cost</li> <li>meal cost</li> <li>shopping</li> <li>water sport</li> <li>yachting</li> <li>environment</li> </ul> | * <u>Dissatisfied</u><br>- night life<br>- meal cost<br>- shopping<br>-   | <ul> <li><u>Dissatisfied</u></li> <li>restaurants</li> <li>night life</li> <li>meal cost</li> <li>shopping</li> <li>-</li> </ul> |
| 8. Places<br>visited        | * n.2   | * n.a   | * D.2  |
| 9. Activities               | * n.2   | * D.8   | * n.a  |

Source: 1992 Survey Data

In interpreting these comparisons it must be recognized that many of the attractions were not yet properly developed during the 1988 survey period.

These results have far-reaching implications for the future growth and development of the Grenada tourism industry. The results highlight the need for greater product diversity and organizational flexibility while reinforcing the dominant role played by the beach and beachrelated activities in island attractiveness, despite the growth in demand for "nature-culture" oriented attractions and educational facilities. Although the analysis has allowed us to better understand the benefit sought, the activities undertaken and the level of satisfaction experienced by visitors to Grenada, it does not help predict the prospect of sustaining demand for the product in the medium and long term - a useful prerequisite for the planning and development of a sustainable tourism product. Neither does it help us to understand visitor motivation, decision and choice processes nor the probability of choosing specific types of destinations. This information is important to help not only, describe the tourism development process, but also to explain and predict growth patterns in light of changing consumer tastes and increasing market segmentation.

## 5.3 THE DISCRETE CHOICE EXPERIMENT (DCE)

There is a fundamental distinction between the compositional and decompositional (fullprofile) approaches in the stated preference approach in consumer research. This refers to how the researcher infers utility from consumer responses.

The first approach is based on the assumption that individuals form evaluations and preferences in a compositional manner. It is assumed that individuals can directly express the importance of each attribute and the relative utility of each attribute within each scenario. Such evaluation typically relies on respondents rating or ranking independently listed variables in terms of their relative importance in forming preference (Haider, Anderson and Louviere, 1993:



5). The approach implies that we are conscious of the relative importance we attach to different attributes of any given product or service. In these compositional models belief scores are weighted by respondent-supplied attribute evaluations and summed to predict preference. The best known method in this family of approaches is the theory of reasoned action (Ajzen and Fishbein, 1980).

The alternative model of how individuals determine preference assumes that we evaluate the stimulus object as a whole. In this decompositional approach, a single evaluation is made of a 'products' complete profile of attributes, each with its own 'profile' consisting of combinations of different levels of various attributes. The construction of such profiles is based on the principles of multivariate experimental design i.e. full factorial and fractional factorial designs. From a respondent's evaluation of a number of hypothetical 'products', it is possible to estimate the importance (utility) attached to each attribute by decomposing the overall preference measure (Lieber and Alton, 1983; Louviere & Timmermans, 1990a). Usually this method is some form of conjoint analysis.

The theoretical foundation of these models is that they involve simultaneous trade-offs which people must make when forming attitudes and opinions about complex objects (Green, 1984; Green & Rao, 1971; Green and Srinivasan, 1978). Each of these two groups of models has strengths and weaknesses. The major strengths of the compositional approach include a strong and thoroughly tested foundation, ease of operation and relatively high level of predictive and interpretive ability. The model, however, does not accurately simulate an actual decision environment in that it does not include trade-offs between attributes in the decision process. On the contrary, decompositional approaches provide a more realistic depiction of the decision process. These models have also proven to be very reliable predictors of preference (Green, 1984). The major drawback to this approach is its difficulty to design and administer because of the need for long and complicated questionnaires, together with the difficulty of predicting choice from indications of preference.



Conjoint analysis has been used extensively in marketing research (Cattin & Wittink, 1982; June & Smith, 1987; Mansfeld, 1987; Bjorkland, 1977; Bjorkland & King, 1982) primarily to test the marketability of new manufactured goods. The variant described below called the "Discrete Choice Experiment" (DCE) has not been used as widely and has only very recently been applied to the area of tourism and recreational research (Haider and Ewing, 1990). One of the reasons for this is the problem of defining the tourism product.

Kotler defines the tourism "product" as "anything that can be offered to a market for attention, acquisition, use, or consumption that might satisfy a want or need - a classical marketing approach. It includes physical objects, services, persons, places, organization and ideas" (1984: 463). Medlik and Middleton (1973) conceptualize tourism products as "a bundle of activities, services and benefits that constitute the entire experience".

The term "tourism product" can be used at two different levels. The "specific" product is a discrete entity offered by a single business such as a sightseeing tour or an airline seat. The other is the "total" level, the complete experience of the tourist from the time one leaves home to the time one returns (Middleton, 1989). The "specific" product is easy to analyze while the "total" product is relatively complex. However, to understand tourism development fully - a complex phenomenon in itself - one must grapple with the complexity. Despite the difficulty, an examination of the total product offers a number of exciting possibilities for those who wish to determine the marketability of existing and proposed "total" products (experience).

The DCE can best be described as a hybrid between conjoint analysis and discrete choice models and therefore has a strong theoretical basis in both psychology and economics (Haider, Anderson and Louviere, 1993). As in conjoint analysis, an experimental design is applied to generate hypothetical scenarios or products. But instead of generating single "products" of which a respondent rates several independently of one another, a set of "products" or alternatives is created and from this "choice set" the respondent is asked to choose one. Thus this method involves choice as in discrete choice modelling of real choice behavior, but the choice is with respect to hypothetical alternatives created using factorial designs similar to that used in conjoint analysis (Louviere and Woodworth, 1983; Louviere, 1988a; Louviere and Timmermans, 1990a). This avoids the need to make assumptions inherent in conjoint analysis about the link between preference and choice behavior. This is one of the major accomplishments of the discrete choice experiment (DCE). As in discrete choice models, the analysis of these designs is usually based on the multinominal logit model (MNL) which has its behavioral foundations in Luce's (1959) choice model.

In spite of early attempts to show the usefulness of the conjoint experiment to tourism research (Bjorkland, 1977 and Bjorkland and King, 1982), it is only recently that a renewed interest has been shown in the technique by both academics and applied market researchers (Haider and Ewing, 1990; Louviere and Timmermans, 1989; Haider, Anderson and Louviere, 1993). Timmermans and Golledge (1990) claim that although little progress appears to have been made in behavioral research in general, over the past decade the necessary theoretical foundation was being prepared. They indicate that

"before progressing, substantial problems had to be solved. These problems ran the gamut from philosophy to measurement and required interested researchers to both stick out their necks and stick to their guns in the face of waning support and increasing criticism" (Timmermans and Golledge, 1990: 341).

While behavioral researchers were being constantly criticized for their lack of progress in developing a comprehensive body of theory and producing empirical work helpful to the tourism trade, practitioners in the tourism industry continued to deny the relevance of market research. It was pointed out by Riley (1983) that tour operators, for example, concluded that product research on currently non-existing alternatives are not possible because of the intangibility of the product. They prefer to assess the potential of new products in test markets. The intangibility of the product is however, the main reason why the discrete choice experiment is, in the opinion of many researchers, an appropriate technique in tourism research (Haider and Ewing, 1990: 34). This is particularly relevant in areas where tourism development is based on sensitive environmental or natural resources. The managers and operators, producers of the product, assemble the various tangible elements (transportation, accommodation, meal plan, facilities and activities) and intangible elements (friendly people, ambience, quality of service, safety and security) into vacation packages.

The nature of the product is also perceived in light of the components it contains. For example a conventional "mass" tourism product would typically comprise a rigidly standardized package, composed of accommodation in a large hotel, located in an 'tourist enclave', adjacent to crowded beaches. At the other extreme is an alternative product (eco-, nature-, heritage-, culture-oriented) established around small, locally owned hotels, located within village communities, with good host/guest interaction, the main focus of attraction being the history, culture or ecosystem.

The discrete choice experiment allows one to design and measure the importance of different destinations based on the sum of the attributes put together to create the "total product" experience - not on the ill-defined concepts and terminology found in the literature. This approach allows one to examine the importance of the individual components that make up the product and develop specific products to meet the needs of individual target groups. This might 'throw some light' on the issues and debate on definitions, concepts and interpretations about tourism development that is found in the literature. Further this allows us to look at existing and proposed destination development efforts without attaching specific labels to the type of experience offered. With this flexible microscale approach, it is therefore possible, for example, to create a hybrid "alternative/mass" type destination, containing all possible combinations of features. It is also possible to identify and measure the attractiveness of "eco-resorts" within "mass conventional" destinations, such as Mahoe Bay resort on the island of St. John in the US

Virgin Islands (USVI).

In the case of Grenada, for example, this technique makes it possible to measure the impact on the destination's image if large scale casino gambling is introduced or the destination experiences a doubling in cruise passengers causing crowding of beaches and attractions. The market potential of these varying scenarios can also be assessed on the basis of the sum of the utility of the many components put together to create the experience. In summary the advantages of the discrete choice experiment are:

- 1. It allows for the design of experiments in which a large number of salient attributes can be combined to describe a hypothetical scenario and in which research subjects evaluate the alternative as a whole instead of rating attributes singly;
- 2. It allows attributes to be uncorrelated, obviating the problem of multicollinearity often encountered in observational studies;
- 3. It allows the researcher to control the alternatives and choice sets presented to the respondents;
- 4. Truly different alternatives, some of which may not exist presently, can be designed and presented to the respondent for evaluation;
- 5. The results can be used to create a user-friendly interactive decision-support system;
- 6. The intangibility of the tourism product makes the fields of tourism and recreation particularly appealing to experimental research; it places the respondents in a situation very similar to that faced by a prospective vacationer when selecting a holiday (Haider, Anderson and Louviere (1993: 7).

Since product positioning and product planning are important aspects of proactive marketing/management for the tourism industry, a clear understanding of the product and its appeal to potential customers and customer segments has become vital to the firm's/destination's survival. It is clear therefore, that research focused on the firm, on the attributes of the tourism product and on better understanding of the changes in demand and market segments is important



to the sustainability of the firms, resorts, regions and ultimately the destination as a whole. The understanding of these issues is critical to the survival of tourism-dependent economies, particularly small, poor and open tourism dependent island destinations in this rapidly changing environment.

#### 5.4 The Experiment's Design and Results

The major steps in the design of any discrete choice experiment are the choice of variables and their levels, the selection of a design plan, and the design of choice sets (Timmermans, 1984). After extensive consultation with a wide cross-section of stake-holders in the Grenada tourism industry, it was agreed, through a modified Delphi-style interview, that eighteen attributes are the most salient features in the design of the island's future tourism product (Green, Hunter and Moore, 1990) (Table 5.17). The most keenly debated issues during the Delphi discussion were; the development of casinos and the introduction of large scale charter flights. There were very strong opinions both for and against the issues. It was generally felt that the impacts of such developments would be environmentally neutral but had the potential to bring with them severe negative cultural and social impacts. These attributes and their respective levels were then used to compose the hypothetical scenarios. The various hypothetical destinations are developed by combining different levels of each attribute

A full factorial design ( $5^5 \times 2^{12}$ ) containing all possible combinations of levels of each attribute is infeasible because of their large number. Therefore a fractional factorial design was employed. This involved the construction of two orthogonal (uncorrelated) designs each containing 64 profiles. Each of these two designs was then blocked into 4 groups each containing 16 profiles with each group being balanced on all attributes. Subsequently, each block in the first design was paired with the corresponding block of the other design to form 4 blocks of 16 choice sets, each containing 2 alternatives consisting of a different combination of levels of the 18 attributes shown in Table 5.17.

,

## TABLE 5.17 LIST OF IMPORTANT VARIABLES USED IN DCE

#### Variables

| 1.  | ACCOMMODATION Type:                   | 0        | A FamBy home (Creole style cooking)                                       |  |  |
|-----|---------------------------------------|----------|---|--|--|
|     | · · · · · · · · · · · · · · · · · · · | 1        | A Rented vills (catered)  |  |  |
|     |                                       | 2        | A 30-40 room "cottage style" hotel complex                                |  |  |
|     |                                       | 3        | A 200+ room hotel   |  |  |
| 2.  | * Feature:                            | Ō        | American nian - rates include three meals/day                             |  |  |
|     |                                       | 1        | All inclusive- unlimited for d/drinks, no tins                            |  |  |
| 3.  | PRICE (S Can.)                        | Ō        | \$ 1100.00 \$ 1500.00   |  |  |
| ••• |                                       | i        | \$ 1350.00 \$ 1850.00   |  |  |
|     |                                       | 2        | \$ 1600.00 \$ 2000.00   |  |  |
|     |                                       | 3        | S 1850.00 S 2250.00   |  |  |
| 4.  | LOCATION (to beach)                   | 0        | Inland 20 min walk to beach, overlooking forest and ocean                 |  |  |
|     |                                       | 1        | On hill, overlooking beach, 5 min, walk away                              |  |  |
|     |                                       | 2        | Across 2-lane main road from beach  |  |  |
|     |                                       | 3        | On heach  |  |  |
| 5.  | LOCATION                              | 0        | No national park on island  |  |  |
|     | (to National Park)                    | 1        | 15 min drive to national nerk   |  |  |
|     |                                       | 2        | 45 min. drive to national park  |  |  |
|     |                                       | 3        | On edge of national park  |  |  |
| 6   | REMOTENESS                            | Ő        | Natural landscape, no other development within 10 min, walk               |  |  |
| •.  |                                       | ĩ        | Mostly natural landsone for house flocal preidences) but no hotely within |  |  |
|     |                                       | •        | 10 min walk   |  |  |
|     |                                       | 2        | Su - A stary hately within 10 min wells                                   |  |  |
|     |                                       | 2        | Six - 10 stary botals within 10 min. waik                                 |  |  |
| 7   | ACTIVITIES . (nombling)               | 0        | No casino combline  |  |  |
|     | ACTIVITIES . Granning)                | 1        | Casino gambling anallabla   |  |  |
| 8   | Boat tring to make sta                |          | Past tring NOT and the  |  |  |
| 0.  | boat append reers etc.                | ,<br>,   | Bost trint analable   |  |  |
| 0   | Vacht charters Basiling               | 6        | Vacht alegters NOT anglahla   |  |  |
| ۶.  | s activ considers presenting          | ĩ        | Yacht charters (VOI available   |  |  |
| 10  | Aimtees Deuteum                       |          | Tacat calenders available.  |  |  |
| 10. | . Airplane Day iders                  | ,        | Day tours (VOT available  |  |  |
| 11  | See Analiza                           | <b>.</b> | Lay tours available   |  |  |
|     |                                       | ,        | Sea Angling (401 available  |  |  |
| 17  | Water Chiles                          | 1        | Sca Angling available   |  |  |
| 16. | water-Selling                         |          | Waitt - Skiing NUI available  |  |  |
| 17  | Int Chiles                            | 1        | Waler - Sking avanable  |  |  |
| 13. | Jet String                            | 0        | Jet - Sking NUT available   |  |  |
|     |                                       | 1        | Jet - Skiing available  |  |  |
| 14. | Scuba- Diving                         | 0        | Scuba - Diving NOT available  |  |  |
|     |                                       | 1        | Scuba-Diving available  |  |  |
| 15. | Golf                                  | 0        | 18- hole International standard golf NOT accessible.                      |  |  |
|     |                                       | 1        | 18-hole International standard Golf Course accessible.                    |  |  |
| 16. | Bicycle trails                        | 0        | Countryside bicycle trails do NOT exist                                   |  |  |
| _   |                                       | I        | Countryside bicycle trails exist  |  |  |
| 17. | Hiking trails                         | 0        | One- hour walk on level ground through virgin forest.                     |  |  |
|     |                                       | 1        | One- hour walk on even path through wildlife sanctuary                    |  |  |
|     |                                       | 2        | Two- hour walk (half uphill) to vista of islands and ocean                |  |  |
|     |                                       | 3        | Two- bour walk (half uphill) to waterfall and natural pool                |  |  |
| 18. | Culture                               | 0        | Weekly night-time street festival   |  |  |
|     |                                       | 1        | Weekly outdoor culture shows and local music                              |  |  |

Source: 1992 Survey Interviews

| TABLE 5.18   |     |
|--|-----|
| <b>RESULTS OF DISCRETE CHOICE EXPERIMENT; UTILITY ESTIMA</b> | TES |

| No. VARIABLES/LE    | <u>VELS</u> |                            | <u>ESTIMATES</u> | Std. ERROR | T-STAT |
|---------------------|-------------|----------------------------|------------------|------------|--------|
| 1. ACCOMMODATION:   | 0           | Family bome                | -                | -          | -      |
|                     | 1           | Villa                      | 0.41295          | 0.1138     | 3.629  |
|                     | 2           | Cottage                    | 0.46374          | 0.1101     | 4.211  |
|                     | 3           | Hotel                      | 0.00538          | 0.1076     | 0.050  |
| 2. FEATURE          | 0           | American plan              | •                | -          | •      |
|                     | 1           | All inclusive              | -0.14856         | 0.0757     | -1.962 |
| 3. PRICE (\$ Can.)  | 0           | \$ 1100 -1500              | -                | -          | -      |
|                     | 1           | \$ 1350 -1850              | -0.11863         | 0,1063     | -1.116 |
|                     | 2           | \$ 1600 -2000              | -0.43104         | 0.1066     | -4.042 |
|                     | 3           | \$ 1850 -2250              | -0.67925         | 0.1065     | -6.377 |
| 4. LOCATION         | 0           | Inland                     | -                | -          | -      |
| (to beach)          | 1           | On hillside                | 0.17519          | 0.1305     | 1.343  |
|                     | 2           | Across road                | 0.25636          | 0.1278     | 2.006  |
|                     | 3           | On beach                   | 0.79373          | 0.1142     | 6.952  |
| 5. LOCATION         | 0           | No park                    | -                | -          | -      |
| (to park)           | 1           | 15 min. to park            | 0.03361          | 0.1103     | 0.303  |
| -                   | 2           | 45 min. to park            | 0.08511          | 0.1067     | 0.797  |
|                     | 3           | On park edge               | -0.12196         | 0.1067     | -1.143 |
| 6. REMOTENESS       | 0           | no development             | -                | -          | -      |
|                     | 1           | few residences             | -0.03079         | 0.1068     | -0.288 |
|                     | 2           | six botels                 | 0.44968          | 0.1124     | 4.000  |
|                     | 3           | 6-10 storey botels         | -0.33977         | 0.1074     | -3.164 |
| 7. ACTIVITIES       |             | •                          |                  |            |        |
| (Gambling)          | 0           | no gambling                | -                | -          | -      |
|                     | I           | gambling                   | 0.14186          | 0.0760     | 1.866  |
| 8. Boat trips       | 0           | not available              | •                | -          | -      |
|                     | i           | trips available            | 0.12721          | 0.0760     | 1.623  |
| 9. Yachting         | Ō           | not available              | •                | •          | -      |
|                     | 1           | available                  | -0.03046         | 0.07631    | -0.399 |
| 10. Air tours       | Ō           | not available              | -                | •          | •      |
|                     | 1           | tours available            | -0.00817         | 0.07801    | -0.105 |
| 11. Anoling         | Ō           | not available              | -                | •          | •      |
|                     | ī           | available                  | -0.01141         | 0.07624    | -0.150 |
| 12 Water-Skiing     | 0           | not available              | -                | -          | •      |
|                     | 1           | available                  | 0.11939          | 0.07920    | -1.508 |
| 13 Int-Skiing       | °.          | not available              | -                | •          | -      |
| in the onling       | 1           | available                  | -0.06841         | 0.1066     | -0 642 |
| 14 Souha, Divina    | 'n          | a vanava.<br>not eveileble |                  | -          | -0.072 |
| 14. Scapa- Neura    | ,           | arnhe available            | 0 04268          | 0 07341    | 0 582  |
| 15 Call             | ò           |                            | 0.04200          | -          | -      |
| 15. 600             | ,           | anji na sanjija            | 0 12025          | 0.07408    | 1 672  |
| 16 B'-ula em la     |             | gou accessione             | 0.12025          | 0.07400    | 1.025  |
| to. Decycle trais   |             |                            | -                | -          |        |
|                     | 1           | UTIMS CODSC                | 0.16351          | 0.07450    | 2.195  |
| 17. ming trais      | U           | IOPESE UPAN                | •                | -          | -      |
|                     | 1           | widile trai                | 0.00400          | 0.1072     | 0.597  |
|                     | Z           | walk to vista              | 0.10875          | 0.1071     | 1.015  |
|                     | 3           | walk to waterfall          | -0.17522         | 0.1070     | -1.638 |
| 18. Cultural events | 0           | street festival            | -                | •          | •      |
|                     | 1           | cultural shows             | 0.044029         | 0.08971    | 0.491  |

Source: Discrete Choice Analysis - 1992 Survey Data



Each block of 16 choice sets was then used to produce one of four different versions of the questionnaire (Appendices 2a, 2b, 2c, 2d). For each of the 16 choice sets within a block or questionnaire, respondents were then asked to decide which of the two potential vacation destinations or combinations of factors best suits their needs.

The questionnaires were distributed in the Toronto region, with the assistance of 10 travel agents who frequently sell Caribbean vacations. The questionnaires were to be delivered to the agents who promised to attach addresses, then mail them to clients who had recently bought an island vacation. While one cannot exactly verify the quantities distributed because of the method of distribution, more than 30% of the questionnaires were returned (n = 109). These contained about an equal numbers of responses from each of the four questionnaires distributed. In light of the exploratory nature of the research and constraints imposed by time and money, it was not possible to increase the sample size through the distribution of another set of questionnaires. The sample was considered adequate for the proposed experimental analysis.

A number of models were estimated using the discrete choice multinomial logit regression programme in the "LIMDEP" (LIMited DEPendent variables) statistical package. The estimates obtained, together with their standard error and t-values for the overall design are shown in Table 5.18. Since the estimates represent a function of the "utility" of each level of each variable, the larger the coefficient the more important the respective level of the variable in the overall choice process. Like multiple regression, the t-value is a measure of the significance (estimate/standard error) of each parameter<sup>4</sup>.

<sup>&</sup>lt;sup>4</sup> T-values are significant at the .05 level if they are larger than +1.96 or smaller than -11.64, and significant at the at the .10 level if they are greater than +1.64 or smaller than -1.64 (Ben-Akiva and Lerman, 1985; Wrigley, 1985).

The results indicate that the most significant attributes in the choice of a Caribbean Island vacation are, in order of importance: proximity to the beach, price, accommodation type and the level of crowding in the resort or accommodation area. This is particularly interesting since the results are consistent with that of the motivational and activity surveys discussed above, where the main activity is swimming and the most popular attraction is the Grand Anse beach. As expected, the results for the variable 'proximity to beach' show that utility decreases significantly as one moves from an "on the beach" location to across a two-lane main road, decreasing gradually thereafter as one moves inland. The coefficient for "on the beach" indicates that, compared to accommodation "inland", the odds of choosing accommodation "on beach" are 2.21 times (exp(0.79373)) as high as those of an "inland" location. The odds of choosing a hotel "across 2-lane highway" are 1.29 times as high and one "on hillside" are 1.19 times as high as those of choosing accommodation not being significantly different from one.

In the case of "price" the odds decrease evenly by 12%, 35% and 50% respectively as the price increases in three steps of \$250 each. The t-statistics also show the two higher price ranges significantly affect the odds of being chosen at the 5% significance level.

Contrary to previous studies (Haider, 1990), "Accommodation Type" is shown to be a highly significant variable in visitors' vacation choices; with two of the three measurable levels significant at the 5% level. This sample expressed similar low preference for both large hotel accommodation and family homes. On the other hand cottage-style, mid-size hotels, and independent rented villa units are preferred accommodation types. The coefficients for "villa" and "cottage" show that compared to "family home" the utilities are 51% and 59% higher. The utility of large "high rise" hotel accommodation is however, the same as that of "family home". This explains, to some degree, the higher occupancy rates and financial viability of some of the better designed mid-sized (Boutique Hotels) accommodations against the larger (full-service) hotels and family type inns operating on the island.

The density of tourism development is expressed at four levels, by the number and type of dwellings in the immediate vicinity, on a continuum from "no other development" to very dense "high rise" tourist resort. The results show very low preferences for high density (Miami Beach style) surroundings. The preferred accommodation location is among a "few low density hotels" within a semi-natural landscape, with few residences and hotel facilities in the surroundings.

This behavior can be explained by the fact that most tourists would feel insecure in an "isolated" environment but at the same time dislike places that are too densely developed. This again supports the policy decision by Anguilla, Bermuda and Grenada that limits the height of buildings to that of a palm tree (generally three storeys). This is likely to be one of the most important variables when distinguishing tourism development types (mass vs alternative). Therefore it is critical for the policy maker and/or proprietor to understand the effects on the destination image. Notwithstanding the clientele targeted during the promotion and marketing, the clientele attracted in the medium and long term almost always reflects the impression created by the surroundings and design.

Interestingly however, the environmental and activity variables; availability of national parks, biking and hiking turned out to be less important than the aforementioned variables. It is revealed that the existence of national parks or protected areas on the island is not significant. Nonetheless "low impact" activities (bicycling (t=2.195) normally associated with protected areas, did have a more positive, though modest effect on utility than jet skiing and water skiing.

The results also show that the availability of casinos increased the utility of a destination by 10%, similar to that of hiking (t=1.64) and golf (t=1.64) significant at the 10% level. Noteworthy is the fact that the availability of the all inclusive vacation concept reduces a destination's utility by 14%, which is significant at the 5% level. This is not consistent with the present popularity of the "all-inclusive" concept. However, it does hint at the desire for flexibility and independence during a vacation experience, a trend some observers project to increase in the near future (Poon, 1994; Urry, 1990).

The model was tested for two-way interactions but this results in no significant changes in results when the variables with t-values in the range  $\pm 1.64$  were eliminated. The design of this experiment did not however allow for testing of the Independence of Irrelevant Alternatives (IIA) assumption since the respondents were not allowed the option of choosing neither of the above scenarios in the questionnaire.

Particularly relevant is the flexibility of the experiment. This allows estimates of choice probabilities for scenarios with different combinations of features. For example, using the list command within the discrete choice model in LIMDEP, one obtains the predicted probabilities of each observation for each choice set considered. More important, however is the ability to calculate probability of choice and then market share for different combinations of variables. These can range from destinations defined as "conventional mass" to those designed with "ecotourism", or some other form of alternative development, in mind.

To explain further the usefulness and applicability of this approach, two examples will be illustrated. First, the probability of choice will be estimated for two destinations designed within the Discrete Choice Experiment (DCE). The second example estimates the probability of choice between two randomly defined and developed destination types. The object is to develop and to measure the probability of choice among destination types that are markedly different; for example, "conventional/mass" versus "alternative" forms of tourism development.

The utility function of any particular destination is measured by the exponential value of the sum of the coefficient estimates of each level of attributes present in the destination, expressed as:

$$V_j = \exp\left(\sum_{k=1}^{K} \sum_{m=1}^{M_k} b_{km} X_{jkm}\right)$$

where

 $X_{jkm}$  is a dummy variable equaling 1 when alternative j has level m of attribute k and 0 otherwise

 $b_{km}$  is the estimated co-efficient representing the part utility of level m of attribute k

V<sub>i</sub> is the estimated utility of the j<sup>th</sup> alternative, and

 $M_k$  is the number of levels of attribute K.

The probability of choosing alternative one is therefore the ratio of the utility estimates, or

$$\frac{V_1}{(V_1 + V_2)}$$

The first example contrasts semi-isolated villa accommodation, located in a pristine rural setting (Destination 1: Table 5.19), with high density "all-inclusive" accommodation, located across a two lane road from the beach (Destination 2: Table 5.19). The results indicate (Table 5.19) that the more "mass- conventional" type of destination (Destination 2.) has a 62% probability of being chosen ahead of the more "alternative" type destination. In spite of the preference for villa type accommodation, the variables price, bicycling, golf and the availability of better hiking trails make Destination 2 more attractive than Destination 1.

The second example (Table 5.20) compares a villa on a hillside five minutes walk from the beach, with no other development within ten minutes walk and with limited activities (only angling, bicycling and hiking) (Destination 3) with a large all-inclusive hotel with six - 10 storey hotels within ten minutes walk where a range of activities including gambling, golf, water and jet-skiing, etc. are available (Destination 4). The results indicate that Destination 3, which better

# TABLE 5.19 PROBABILITY AND UTILITY ESTIMATES (USING CHOICE-SET D9 FROM APPENDIX 2d)

| Attributes       | DESTINATION 1          | SCORE   | DESTINATION 7.             | SCORE   |
|------------------|------------------------|---------|----------------------------|---------|
| Accommodation    | Villa                  | 0.4129  | Large Hotel                | 0.0053  |
| Feature          | American Plan          | 0.0000  | all-inclusive              | -0.1485 |
| Price            | \$1600 - \$2000.00     | -0.4310 | \$1100 - \$1500.00         | 0.0000  |
| Location (beach) | Across Road            | 0.2563  | Across Road                | 0.2563  |
| Location (park)  | On edge of park        | -0.1219 | 15 min. Drive Away         | -0.0336 |
| Surroundings     | Few residences         | -0.3079 | Six-10 storeys             | -0.3397 |
| ACTIVITIES       |                        |         |                            |         |
|                  | Casino                 | 0.1418  | Casino                     | 0.1418  |
|                  | yachting               | -0.0304 | No Yachting, No Boat trips | 0.0000  |
|                  | Scuba                  | 0.0426  | No Scuba No Air Tours      | 0.0000  |
|                  | Jet-Skiing             | -0.0684 | No Jet-Skiing              | 0.0000  |
|                  | No Golf                | 0.0000  | Golf                       | 0.1202  |
|                  | No water-Skiing        | 0.0000  | Water-Skiing               | -0.0684 |
|                  | No Angling             | 0.0000  | Angling                    | -0.0124 |
|                  | No Bicycling           | 0.0000  | Bicycling                  | 0.1635  |
| Hiking Trails    | Hiking to water-fall   | -0.1752 | Hiking to vista            | 0.1087  |
| Cultural Events  | Cultural Shows         | 0.0440  | Cultural Shows             | 0.0440  |
|                  | Summation of Estimates | -0.2368 | Summation of Estimates     | 0.2392  |
|                  | Exponential/ utility   | 0.7891  | Exponential/Utility        | 1.2702  |
|                  | Choice Probability     | .38     | Choice Probability         | .62     |



1

# TABLE 5.20 PROBABILITY AND UTILITY ESTIMATES (RANDOMLY DESIGNED DESTINATIONS)

| Attributes       | DESTINATION ?               | SCORE   | DESTINATION 4                   | SCORE   |
|------------------|-----------------------------|---------|---------------------------------|---------|
| Accommodation    | Villa                       | 0.4129  | Large Hotel                     | 0.0053  |
| Feature          | American Plan               | 0.0000  | all-inclusive                   | -0.1485 |
| Price            | \$1350 - \$1850.00          | -0.1186 | \$1100 - 1500.00                | 0.0000  |
| Location (beach) | On Hill over-looking beach  | 0.1752  | On Beach                        | 0.7937  |
| Location (park)  | 15 minutes drive to park    | 0.0336  | No Parks                        | 0.0000  |
| Surroundings     | No Development              | 0.0000  | Six-10 storeys                  | -0.3397 |
| ACTIVITIES       | No Air-tours, No Boat Trips | 0.0000  | Air-Tours, ( Boat Trips 0.1272) | 0.0081  |
|                  | No Casino                   | 0.0000  | Casino                          | 0.1418  |
|                  | No Yachting                 | 0.0000  | Yachting                        | -0.0305 |
|                  | No Scuba                    | 0.0000  | Scuba                           | 0.0426  |
|                  | No Jet-Skling               | 0.0000  | Jet-Skiing                      | -0.0684 |
|                  | No Golf                     | 0.0000  | Golf                            | 0.1202  |
| •                | No Water-Skiing             | 0.0000  | Water-Skiing                    | 0.1193  |
|                  | Angling                     | -0.0114 | Nc Angling                      | 0.0000  |
|                  | Bicycling                   | 0.1635  | No Bicycling                    | 0.0000  |
| Hiking Trails    | Uphill Trails               | 0.1087  | No Trails                       | 0.0000  |
| Cultural Events  | Cultural Shows              | 0.0440  | Cultural Shows                  | 0.0440  |
|                  | Summation of Estimates      | 0.8079  | Summation of Estimates          | 0.6879  |
|                  | Exponential/ utility        | 2.2432  | Exponential/Utility             | 1.9896  |
|                  | Choice Probability          | _53     | Choice Probability              | .47     |



fits the characteristics of the "alternative to mass/conventional "type destination has a slightly higher (53%) chance of being chosen, despite its higher price than Destination 4 - the "mass/conventional " destination.

As indicated in Table 5.21 one can measure the probability of choice among many different destinations including those designed using the design technique discussed earlier or randomly chosen destination types as put together in the second example.

| Choice Probability | of Destination 1 | of Destination 2 | of Destination 3 | of Destination 4 |
|--------------------|------------------|------------------|------------------|------------------|
| over Destination 1 | N.A              | 0.62             | 0.74             | 0.72             |
| over Destination 2 | 0.38             | N.A              | 0.64             | 0.61             |
| over Destination 3 | 0.26             | 0.36             | N.A.             | 0.47             |
| over Destination 4 | 0.28             | 0.39             | 0.53             | N.A              |

TABLE 5.21 CHOICE PROBABILITY MEASUREMENTS

The results (Table 5.21) indicate that there is a greater probability of choosing a destination with semi-isolated villa type accommodation, in low density surroundings and a few low impact activities available (Destination 3). Destination 1 (considered an activity focused, "alternative" type destination), and destinations 2 and 4 (considered as "mass/conventional" types) are somewhat less likely to be chosen. Destination 3 has 74%, 64% and 53% probability of being chosen over Destinations 1, 2, and 4 respectively. Destination 4; a high density, large hotel accommodation, located on the beach with many available activities, on the other hand has a greater probability (72% and 61%) of being chosen over Destinations 1 and 2 respectively. The odds of choosing Destination 2 are 62% higher than that for Destination 1.
This example serves to highlight the usefulness and flexibility of this approach. It is clear that the most preferred destination type is (Destination 3) the semi-isolated destination focused on providing rest and relaxation with only "low impact" activities, despite its hillside location and average price. The "mass/conventional" type destination located on the beach in a very dense neighborhood, with many and varied activities, and in the lower price range (Destination 4) seems the next most preferred destination choice. The "alternative to mass" destination that offers semi-isolated villa accommodation, at a higher price than Destination 3, but with many and varied activities (Destination 1) is the least preferred within the available choices.

When similar destination types are compared it is discovered that within the destinations considered "alternative to mass" (Destinations 1 and 3) the distinguishing variables are price and availability of activities. It is to be expected that the lower priced destination will be preferred over those with higher prices. However, it was not expected that places with fewer available activities would be chosen over destinations with a greater variety of activities. When the "mass/conventional" type destinations are compared Destinations 2 and 4) it is shown that the odds of choosing Destination 4 are 62% greater than those for Destination 2. The differentiating variables in this case are; location relative to the beach and activities available. These serve to support the belief that visitors will prefer accommodation located on the beach, but will prefer to stay away from places that are crowded by many and varied activities competing for the use of the same space, the ideal vacation being on your own beach or if affordable on your own island!

This microscale analysis allows one to examine not only the importance of each attribute and variable in the individual choice process but also helps one to understand the trade-offs people make in the vacation choice process. The analysis at this microscale is also useful for destination policy and planning purposes. As discussed in chapter 4, in small islands like Grenada beach front properties are limited and therefore have become very expensive, almost out of reach of local entrepreneurs. As a result, the addition of approximately 500 rooms (mainly by local investors who could not afford the beach front properties) to the island's accommodation stock during the period 1984 and 1992 occurred inland from the beaches. Many of these properties are now either in receivership or being offered for sale because they are unable to attain a rate of occupancy that will allow them to break-even or make a profit on the investment. This has partly resulted from the lack of adequate information on the importance of variables like distance to beach, type of hotel accommodation and price to the visitor's choice of destination and indirectly to the survival of hotels and resorts. If, for example, it was known that the odds of choosing accommodation on the beach are 2.21 times as high as that of an inland accommodation, it could have been predicted that the occupancy rates of inland accommodations would be very low, despite the marketing efforts employed. This serves only to demonstrate the policy and planning implication of the microscale analysis as permitted by the discrete choice experiment.

Although the sample size in this study does not permit the use of cluster analysis to facilitate the use of the discrete choice experiment with market segmentation, the latter can be used to develop choice models for different segments by grouping together individuals with similar vectors of choice responses for the same choice set. Once mutually exclusive groups (segments) are determined, the choice data can be pooled, and dummy variables used to specify specific deviation of segment's from mean effects of each attribute level (Louviere, 1988a: 87). This is an interesting application that should prove to be an improvement over the cluster solutions developed in section 5.2 where "revealed" choices, not "stated" choices, were used.

153

# CHAPTER 6 ECONOMIC IMPACT ANALYSIS

### 6.0 INTRODUCTION

This chapter presents a detailed analysis of the economic impacts of tourism on the island of Grenada. First, I critique the current methods used to determine the economic impacts of tourism by the Grenada Board of Tourism (GBT) and the Ministry of Finance. A brief discussion of the approaches to regional tourism impact determination is then presented. I argue that the "Ad Hoc multiplier" approach is the most appropriate and cost effective method to adopt in data-deficient and cash starved small island economies like Grenada. Thereafter, the results of the expenditure surveys are examined focusing on the patterns of expenditure by different visitor groups and segments.

The chapter continues with a discussion of the results of the business survey, which are then used, in association with that of the expenditure survey, to determine the direct income, employment and government revenue generation coefficients. The direct impact of tourist expenditure on the national economy is then presented. The chapter concludes with a discussion of the impacts associated with different tourist types. The tourist types or segments which promise the greatest economic contribution (to income, employment and government revenue) are then highlighted. The "ideal tourist" and the "most appropriate industry structure", the combination most likely to "maximize economic benefits" are then identified. I conclude with some comments on the destination's sustainability in light of the product's market potential and economic contributions.

## 6.1 GOVERNMENT ESTIMATES

There has never been a detailed study of the economic impact of tourism on the island of Grenada. Nonetheless, the Government, through the Ministry of Finance and Planning, publishes annual estimates of the economic contribution of tourism to the national economy. The statistics used for this analysis are collected by the Immigration Department, are compiled by the GBT, and are then supplied to the Ministry of Finance and Planning who then estimate the industry's contribution to national economic development.

A number of weaknesses are apparent in the methods used to collect this data. First is the categorization of visitors. For security purposes the Immigration Department categorizes visitors by nationality, not by country of residence. For tourism purposes, however, this categorization is inappropriate since it does not truly represent where visitors come from, reside and/or work. Second, the Immigration Act mandates that everyone entering the country must be listed as spending a minimum of one day in the country. This has caused gross overestimation of the number of stay-over visitors over the past few years. This is a result of the increased numbers of cruise-ship visitors and in-transit passengers connecting through the Point Salines International Airport. The plans and policy guideline developed from this information source are therefore questionable and often inappropriate.

The expenditure estimates are also questionable since the assumptions used are based on inappropriate estimates. Prior to 1992, estimates were derived by using an average daily expenditure of E.C. \$132.00, a figure used since 1980 and applied to all visitors regardless of purpose of visit or country of residence. In 1992, these discrepancies were recognized and it was agreed by all parties that a more refined method for the collection of tourist related statistics should be implemented (GBT, 1992).

It was agreed to redesign the immigration forms to facilitate the collection of statistics on length of stay, properly reflect in-transit vs stay-over visitors, and replace nationality by country of residence. It was also agreed to use a more appropriate average daily expenditure figure based on place of residence and season derived from a motivational and expenditure survey conducted in 1988. The statistics published from 1988 onwards have since been adjusted to reflect these changes, therefore instead of using one daily expenditure figure for all visitors, the new system uses the following breakdown (Table 6.1).

#### TABLE 6.1 GBT'S DAILY EXPENDITURE ESTIMATES

| Nationality             |        | Expenditure (\$E.C.) |         |
|-------------------------|--------|----------------------|---------|
|                         | Winter | Summer               | Average |
| U.S.A.                  | 215.09 | 194.24               | 202.67  |
| Canada                  | 205.24 | 176.85               | 191.05  |
| U.K.                    | 213.30 | 169.15               | 191.22  |
| European                | 185.14 | 166.66               | 175.90  |
| CARICOM                 | 213.07 | 180.85               | 196.96  |
| Other                   | 180.85 | 165.98               | 173.41  |
| Average                 | 202.12 | 175.62               | 188.87  |
| (Source: GBT statistics | 1992)  |                      |         |

The income employment and government revenue multiplier coefficients used to determine the overall economic impact of tourism on the national economy are extrapolated from studies undertaken on other Caribbean islands, with similar socio-economic conditions (like Barbados) and with a tourism industry at a similar stage of development (like St. Lucia). The latter is based on the assumption that all tourist destinations follow similar stages of the tourism area cycle of development. McElroy and de Alberquerque (1989b) indicate that Grenada, like St. Lucia, is at the end of the "exploration" stage, moving on to the "take-off" phase.

Using these approaches the Government of Grenada estimates that

"... tourism generates quick foreign exchange which makes it particularly attractive. However, a significant amount of gross earnings is not returned locally as a result of a high leakage factor which is estimated as 73%" (Government of Grenada, 1990a, Tourism Sector Plan 1991-1995).

The plan further reveals that

"... direct employment in the tourism industry increased by over 100% between 1984 and 1989 moving from 853 to 1928... given a multiplier factor of .5 to 1 the number of persons directly and indirectly employed in the industry is somewhere in the vicinity of 2442" (Government of Grenada, Tourism Sector Plan 1991-1995, pg 214).

Ministry of Finance sources have confirmed (Boatswain, 1992) that as a full impact analysis has never been undertaken, the basis for these estimates cannot be verified and there is a continuous debate between government planners and the Grenada Hotel Association over the accuracy of the figures. The association maintains that the multiplier is grossly underestimated. They are convinced that because 95% of Grenada's hotel plant (prior to 1993) is locally owned and managed, the leakage figure is much less than on other islands characterized by high foreign ownership. Uncertainty over the figures is only increased by the fact that the same coefficients have been in use for the past 15 years (Cherman, 1992).

Despite the many weaknesses of the former system, when adjustments were made to reflect the improved data collection method the government estimates of total visitor expenditure for both 1988 and 1992 turned out to be very similar to the estimates obtained by this research. The GBT estimates that total expenditure from stay-over visitors was E.C. \$69.3m (US\$ 25.6m) and E.C.\$104.1m (US\$ 38.5m) for 1998 and 1992 respectively. In comparison the survey results found that stay-over visitors spent US\$ 22.7m and US\$ 36.06m for 1988 and 1992, a difference of less than 10 % in each case (Tables 6.2 and 6.3).

The lack of proper understanding of the industry in light of the absence of a

detailed breakdown of these gross expenditure estimates accounts for some of the questionable and contradictory assumptions expressed in the Sector Plan. A good example is the assumption that "the majority of CARICOM nationals and returning Grenadians stay at friends and relatives and contribute very little to hotel occupancy and even foreign exchange generation" (Government of Grenada, 1990a: 243). On the contrary, while visitors using friends and family accommodation contribute little to hotel revenue, they contribute a significant amount (US\$ 8.6m or 23.5% of total tourist expenditure in 1992) to the island's foreign exchange and national income generation (Table 6.3). Also important is the fact that this group of tourists spends a proportionately higher percentage within sectors that are relatively labor intensive and utilize local resources (crafts, food and beverages). It is also clear that the expenditure from this group is spent more within the rural areas and informal sectors, areas in which the impacts are potentially spread more widely.

The need for further disaggregation of the statistics for marketing and planning purposes is highlighted by the fact that changes in the industry are propelled by a more demanding customer. To respond to these changes, planners need acquire a better understanding of the customer and the product demanded. This can best be done by gathering and analyzing the necessary statistics at a disaggregated level. The major obstacle in this regard remains the attitude and mind set of the industry participants who have survived and prospered in the past by taking decisions based more on instinct than on scientific research and data analysis. In this era of intense competition and constant change, continued growth and prosperity in the tourism industry is no longer guaranteed. It is therefore important to develop a good understanding of the industry's structure and function so as to rationally respond to the many changes occurring within the industry.

# TABLE 6.2 TOTAL VISITOR SPENDING BY ACCOMMODATION (US\$ '000) 1988

| ACCOMMODATION<br>TYPES:           | HOTEL<br>(LARGE)    | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER  | TOTAL<br>EXPENSES | 5    |
|-----------------------------------|---------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|-------------------|------|
| EXPENDITURE ON:                   |                     |                   |                  |                       |                | -                   |        |                   |      |
| ACCOMMODATION                     | 2232.11             | 3043.52           | 173.61           | 551.18                | 0.00           | 779.29              | 43.47  | 6823.17           | 30   |
| MEALS                             | 926.19              | 916.81            | 60.58            | 409.43                | 0.00           | 3087.91             | 76.76  | 5477.68           | 24   |
| YACHTING                          | 177,87              | 123.95            | 0.00             | 17.10                 | 0.00           | 27.92               | 274.01 | 620.87            | 03   |
| TAXI                              | 381.45              | \$16.82           | 47,47            | 165.83                | 0.00           | 1443.37             | 38.16  | 2593.10           | 11   |
| ENTERTAINMENT                     | 175.57              | 99.57             | 9.26             | 24.35                 | 0.00           | 647,40              | 14.74  | 970.90            | 04   |
| Shopping                          | 287.22              | 379.68            | 26.06            | 46284                 | 0.00           | 3045.70             | 65,89  | 4267.39           | 19   |
| OTHER                             | 200.61              | 181.95            | 11.30            | ٥٥.31                 | 0.00           | 1498.04             | 22.92  | 1980.12           | 09   |
| TOTAL EXPENSES<br>Source: 1988 SL | 4381.02<br>27vey Da | 5262.33<br>ta     | 328.28           | 1696.03               | 0.00           | 10529 63            | 535.95 | 22733.23          | 1 00 |

# TABLE 6.3 TOTAL VISITOR SPENDING BY CCOMMODATION (US\$ '000) 1992

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE)  | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER   | TOTAL<br>EXPENSES | 5          |
|-------------------------|-------------------|-------------------|------------------|-----------------------|----------------|---------------------|---------|-------------------|------------|
| EXPENDITURE ON:         |                   |                   |                  |                       |                |                     |         |                   |            |
| ACCOMMODATION           | 1634.79           | \$\$39.08         | 994.01           | 1898.53               | 448.99         | 85.44               | \$28.65 | 11129.47          | 31         |
| MEALS                   | 1032 🔭            | <b>??</b> 97.63   | 458.24           | 967.11                | 301.07         | 2211.80             | 541.57  | 7810.40           | 22         |
| YACHTING                | 210.49            | 687.06            | 180.35           | 658.99                | 48.62          | 8.05                | 234.42  | 2677.98           | 07         |
| BAR                     | 258.09            | 569.62            | 153.98           | 304.30                | 90,74          | 1774.41             | 157.23  | 3308.36           | 09         |
| TANI                    | 188.21            | 647,73            | 108.24           | 271.36                | 152,29         | 568.60              | 119.12  | 2055.56           | 06         |
| CAR RENTAL              | 217.79            | 271.22            | 54.52            | 135.63                | 69.52          | 904.91              | 37,44   | 1691.03           | <b>0</b> 5 |
| TOURS                   | 82.72             | 184.57            | 56.28            | 108,94                | 22,47          | 49,43               | 78.58   | 582.98            | 02         |
| ENTERTAINMENT           | 25.95             | 283,04            | 11.22            | 36.41                 | 19.98          | 594.66              | 13.23   | 984.50            | 03         |
| DUTY FREE SHOPPING      | 129.69            | 261.44            | 11233            | 318.27                | 83.69          | 394,47              | 140.85  | 1440.74           | 04         |
| GROCERY SHOPPING        | 68.91             | 151.31            | 52.19            | 146.65                | 52.07          | 713.37              | 191.08  | 1375.57           | 04         |
| SPICE AND CRAFT         | 158.97            | 327.09            | 95.06            | 158.91                | 52.93          | 825.60              | 110.50  | 1729.06           | 05         |
| SPORTS                  | 1.83              | 147.82            | 25.22            | 5.86                  | 8.43           | 124.08              | 20.30   | 333.53            | 01         |
| OTHER                   | 146.11            | 120.02            | 35.93            | 156.45                | 36.28          | 426.34              | 23.21   | کړ ډېو            | 03         |
| TOTAL EXPENSES          | 4155.83<br>vev Da | 11487.63          | 2337.57          | 5168.11               | 1387,07        | \$681.15            | 2846.18 | 36063.53          | 1 00       |

#### 6.2 METHODOLOGY AND APPROACH

While data relating to total tourist expenditure is important, it does not provide a detailed picture of the real prosperity created by the industry. This is because businesses that receive tourist expenditure often spend or invest a proportion of this revenue outside the country. As a result, planners require information on the way that the tourist industry is linked to other sectors of the economy and how much expenditure leaks from the country in the form of imports, overseas debt repayments, and repatriated wages and profits. At the same time it is important to ascertain the degree to which income, employment generation and government revenue potential varies between sectors and sub- sectors of the industry. This facilitates the evaluation and comparison of the individual contributions of sectors, firms and individuals to the economic development process. Armed with this information, one can determine what development strategy, fiscal and monetary incentives and concessions are most likely to achieve the economic goals and objectives set for the industry or destination.

At the center of this tourism economic impact analysis lies the notion of the economic multiplier. The multiplier is designed to quantify the amount of local income, employment and government revenue generated by tourist expenditure within specific geographic regions. The literature on tourism multipliers is extensive (Archer, 1977; 1989; Archer and Owen, 1971; Archer and Fletcher, 1989; Fletcher, 1990; Milne, 1987a) and continues to grow. Whereas most of the work has focused on measuring impacts in different destinations, not much has added to the general knowledge, methodology and development of multiplier concept (Archer and Fletcher 1993: 83). A few papers have, however, provided new insights into the working of multipliers and their possible values under different circumstances. Particularly notable are the work of Sadler et al. (1973) and Sinclair (1981), who have shown the effect of using marginal

rather than average values for the industrial sector coefficients; Milne (1987a), who demonstrated that different multiplier values are obtained according to the level of disaggregation of sectors even down to the level of individual firms; and Wanhill (1988), who showed the effects which existing capacity constraints have upon the operation of multipliers (Archer and Fletcher 1993: 83).

Techniques for estimating income and employment multipliers for the tourist sector have included input-output analysis (Archer and Fletcher, 1988; Archer, 1987; Fletcher, 1989; Briassoulis, 1991) and ad hoc models using "differential multipliers" (Milne, 1987a). Each of these approaches has advantages and disadvantages. Full scale input-output models provide the greatest amount of detail on how each part of the economy is linked together. However, the use of input-output models is often constrained by the absence of up-to-date and accurate data. It may also be difficult to find regional level information. It is also true to say that the construction of full input-output tables is an expensive and time-consuming exercise (Archer and Fletcher, 1988).

The input-output model also assumes that the economy can be disaggregated into a distinct number of industries or sectors comprising firms producing a similar product. An industry is characterized by a generic product and production process. The term "generic product" refers to the conceptual commodity produced by an industry. For example, the generic products of the agriculture industry are food and fibre. This product can take a variety of real forms, but each form of the same generic product will provide the same function. In the case of tourism, however, the function of the generic product is the facilitation of travel and activity of individuals away from their usual home environment (Smith, 1994: 582). According to Smith (1994), the tourism product consists of five elements: the physical plant, service, hospitality, freedom of choice and involvement. The tourism product is not a simple combination of the five elements, but the result of synergistic interaction among all the components. This makes it very

·...

difficult to distinguish the tourism industry from other elements of the economy. Consequently, the input-output model often assumes that the tourism industry is represented by hotels and restaurants only (Briassoulis, 1991; Greaves & Prince, 1987; Murray, 1991).

Much linkage/leakage research has focused on the aggregate impact of tourist expenditure on income levels, job creation and economic transactions. While input-output (IO) approaches are often the preferred option for those wishing to analyze the national scale or sectoral impacts of tourist expenditure, their use is constrained primarily by the fact that such modeling requires a large amount of contemporaneous data to construct a matrix that can effectively mirror the interactions of the economy. Subjectivity also enters the IO approach: the definition of sectors, the degree of disaggregation in inter-industry transactions and a range of other decisions are based on the judgment of those who construct the tables, and not on any internationally applied set of standards (Briassoulis, 1991). A further concern relates to the static nature of IO approaches. While techniques such as linear and quadratic programming have been used in attempts to update IO tables, inaccuracies inevitably develop. Both static and dynamic IO models only have a usable lifetime of approximately 5 years because the base data upon which the matrix was developed cannot be assumed to remain stable for any greater period of time (Archer 1977, 37).

Many researchers and planners have adopted alternative approaches based on 'ad hoc' (neo-Keynesian) multiplier models. The data requirements of this method are relatively simple when compared to the input-output technique. Sample surveys of the cost and revenue structures of relevant tourist businesses and their suppliers are conducted - enabling researchers to construct requisite components of an IO matrix without having to develop a working model for the entire economy (Archer, 1977).

Another important strength of this approach is its flexibility. Of particular interest is the ability of ad hoc multipliers to identify the contribution made by different types of tourists to regional economic development. Thus, while a guest staying in an international luxury hotel may spend more money per day (in absolute terms) than a visitor who stays in a locally owned guest house, the latter may spend money in businesses that are more labor intensive and have lower import propensities and hence exhibit a greater ability to generate income and employment. As a result the guest-house visitor will, in relative terms, generate more income and employment per currency unit spent than the hotel guest.

In simple terms ad hoc models allow a sufficient measure of disaggregation to be very useful for micro-level policy and planning purposes. As shown in this and other studies (Milne, 1987c; Grekin, 1994) such approaches allow the generation of coefficients for narrowly defined visitor categories. To aid this type of analysis this study categorizes visitors to Grenada on the basis of whether or not they traveled on a package, their country of residence, and the type of accommodation used during the vacation, and secondly on the basis of defined segments developed by cluster analysis (see chapter 5).

Because the evaluation of the income and employment generation characteristics of businesses is a basic feature of the ad hoc multiplier, the capabilities of different enterprises to generate local economic benefits can also be ascertained. Studies have revealed that company size, ownership structure, labor intensity and import propensities exert a significant influence on the ability of firms to generate economic benefits. From a policy making perspective, these types of disaggregation allow a more flexible and informative set of results than can be obtained through the use of more rigid IO approaches (Milne, 1987c; Archer and Fletcher, 1988, 1993).

In order to operationalize the ad hoc model (appendix 3), it is first necessary to

measure tourist expenditure and how it is broken down into various categories - for example, accommodation, restaurants, yachting, handicrafts and transport. When a tourist spends money in a tourist sector enterprise, a part of this sum will quickly be turned into jobs, income, and government revenue. This is the direct economic impact of tourism. The remainder of the sum will be spent on necessary supplies and services for the operation of the firm, and is thus passed on to the suppliers of these items. Where these suppliers are located within the country they will, in turn, generate more income/employment before passing the remainder on to their own suppliers (indirect effect). Similarly, when local residents who have received this income spend their money within the region it will create a further round of income and employment generation the induced effect. It is the leakages that limit the size of the multiplier; the larger the proportion of financial flows that leave the country, the less the economic benefits and hence the lower the multiplier.

As a consequence of the scope of this research, it was not feasible to examine the indirect and induced components but given the size and extent of the manufacturing and service sectors within the open Grenadian economy it is unlikely that these will contribute significantly to the total economic impact. It is generally agreed in small island economies that "in most cases the direct component of the coefficients are the main contributors to the total figures" (Milne, 1987c: 54). This, however, does not alter the usefulness of the approach. Many studies have demonstrated the pertinence of direct impact data to policy and planning initiatives. (Olladottir, 1992; Grekin, 1994).

## 6.3 VISITOR EXPENDITURE PATTERNS

Unlike the approach used by the GBT, my method for calculating tourists' daily expenditure involved distinguishing visitors who used packages as against those who did not, then these categories were further broken down by country of residence and finally by accommodation used. This was necessary since the spending patterns for package verses non-package users showed major discrepancies due to the inclusion of many items and costs within the diverse packages offered.

| <b>Residence</b> |            | Daily Expendi | ture       |           |
|------------------|------------|---------------|------------|-----------|
|                  | <u>198</u> | 8             | <u>199</u> | <u>92</u> |
|                  | US \$*     | E.C. \$       | US \$*     | E.C. \$   |
| U.S.A.           | 111.42     | 300.83        | 110.90     | 299.43    |
| Canada           | 78.19      | 211.11        | 95.15      | 256.90    |
| U.K.             | 99.29      | 268.08        | 87.03      | 234.98    |
| European         | 101.45     | 273.91        | 133.52     | 360.50    |
| CARICOM          | 135.26     | 365.20        | 132.52     | 357.80    |
| Average          | 100.05     | 270.13        | 105.77     | 285.57    |

(Source: 1988 and 1992 surveys).

Package based expenditure analysis was done for both 1988 and 1992 data sets and then aggregated (Appendices 4 and 5). The results of this analysis are summarized in Table 6.4. Although the daily expenditure figures calculated by country of residence and average daily expenditure (\$US 105.77 in 1992) are significantly higher than those used by the GBT (\$US 70.00 in 1992) (Table 6.1), the total expenditure estimates within this survey produce comparable results to that produced by the GBT in 1992. The method of analysis used here probably accounts for these results. In this analysis package and non-package users were analyzed separately then aggregated. The cost of accommodation and meals for package takers was factored in, based on the discounts offered to wholesalers ranging from 30% at the mid-size accommodation to 70% at both the larger and smaller properties (Cherman, 1992). Without this distinction, there is the possibility of over- or under-estimating the expenditure, since visitors on a package are not usually able to give a cost breakdown of airfare separate from meals or accommodation. On the other hand, non-package users will report much higher expenditure which again can bias the survey results. In spite of the differences in daily expenditure, the pattern remained remarkably consistent between the two sets of expenditure estimates. A comparison of Tables 6.1 and 6.4 shows that average daily expenditure for visitors from the U.S.A. and CARICOM countries is consistently high, while Canadian and U.K. residents spend marginally lower amounts. One reason for the consistently high estimates for Caribbean visitors is because the majority are business travelers, underscoring the importance of business travel to Grenada's foreign exchange earnings. There is, however, a large difference in spending by Europeans between the two sets of estimates (Table 6.1 and 6.4). The GBT estimates that European visitors spend the least per day while this survey has discovered that the European visitor is marginally the highest daily spender. There is no clear explanation for these differences; the high estimate shown in the results for 1992 is consistent with that obtained for 1988 (Table 6.4).

When the 1988 daily expenditure estimates are compared with those of the 1992 survey, one discovers many similarities. Again, visitors from the Caribbean have shown consistently high daily expenditure, while Canadian and United Kingdom visitors show the lowest spending within both surveys. The spending by U.S residents has been steady at approximately U.S \$111.00 per visitor per day, however, the survey results indicate a marked increase in expenditure by European tourists, increasing from U.S \$101.00 in 1988 to U.S \$133.00 in 1992. The results also show an increase in average daily expenditure from U.S \$100.05 in the 1988 survey to U.S \$105.77 in 1992. This 5% increase in overall visitor spending can be attributed to relatively low general inflation within the island, measured at approximately 2% per annum over the period (Government of Grenada, 1993).

It is instructive at this point to discuss the details of how the total expenditure is calculated, since the aggregated total figures (Table 6.2 and 6.3) do not present sufficient details to be meaningful for policy and planning purposes. To arrive at total expenditure,

the daily spending for each visitor type is first determined by weighting the non-package and package users to determine the daily spending by accommodation type. The weighted daily expenditure figures for the 1988 data set are shown as Appendix 4, while that of the 1992 data set is shown in Appendix 5. For example, Appendix 4 comprises five separate "Appendices" labelled 4A to 4E. Each 'appendix' contains the breakdown of daily expenditure on the basis of accommodation type for visitors resident in the different countries. For example, the U.S. visitors' expenditure are shown in appendix 4A, Canadian in 4B, U.K. in 4C, Other European in 4D, and Caribbean visitors in appendix 4E. This pattern is used consistently throughout the Appendices within the thesis, however, in some cases like that of Appendix 5 there is an additional "table" labelled Appendix 5F which in every case represents the sum of all the preceding 'Appendices'. Weights are then determined for each accommodation type and country of residence to further highlight the importance of the individual categories before a total expenditure is calculated.

The weighting factor is determined from the GBT statistics using the length of stay by country of residence, the occupancy rates by accommodation types, breakdown of rooms by accommodation category, number of visitors using non commercial accommodation and room night capacity of the hotel accommodation plant. The weights are then multiplied by the daily expenditure by accommodation type and place of residence. Finally the totals are aggregated to determine estimated total expenditure by tourist types. The results are presented for 1988 and 1992 surveys in Appendices 6 and 7 respectively. The resulting estimates for 1988 are reproduced as Appendix 6A-F. Again Appendix 6A represents the breakdown for U.S visitors while Appendix 6E gives the breakdown for Caribbean visitors. This format is followed for Appendix 7 also.

The following discussion relates the results of the analysis while also highlighting the usefulness and importance of the disaggregated analysis. I begin with a discussion of

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER  | TOTAL<br>EXPENSES | ¢;   |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|-------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |        |                   |      |
| ACCOMMODATION           | 64,19            | 76.38             | 39,14            | 3247                  | 0.00           | 3,93                | 10.26  | 37.73             | 38   |
| MEALS                   | 29.60            | 23.55             | 13.66            | 22.05                 | 0.00           | 14.83               | 18.11  | 20,30             | 20   |
| YACHTING                | 4,97             | 2.83              | 0.00             | 0,75                  | 0.00           | 0.32                | 64.65  | 12.25             | 12   |
| TAXI                    | 12.16            | 12.48             | 10.70            | 8.74                  | 0.00           | 7,44                | 9.00   | 10.09             | 10   |
| ENTERTAINMENT           | 4,79             | 221               | 2.09             | 1.35                  | 0.00           | 3.48                | 3,48   | 290               | 03   |
| SHOPPING                | 9.28             | 9,39              | 5.88             | 18.93                 | 0.00           | 14.29               | 15.55  | 12.22             | 12   |
| OTHER                   | 5.78             | 4.24              | 2.55             | 2.62                  | 0.00           | 6.79                | 5.41   | 4,50              | 05   |
| TOTAL EXPENSES          | 130.76           | 131.09            | 74.01            | \$6,90                | 0.00           | 51.03               | 126.46 | 100.05            | 1 00 |

#### TABLE 6.5 DAILY VISITOR SPENDING BY ACCOMMODATION \_\_\_\_\_ 1988

Source: 1988 survey data

# TABLE 6.6 DAILY VISITOR SPENDING BY ACCOMMODATION -

<u>1992</u>

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE)  | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER  | TOTAL<br>EXPENSES | %    |
|-------------------------|-------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|-------------------|------|
| EXPENDITURE ON:         |                   |                   |                  |                       |                |                     |        |                   |      |
| ACCOMMODATION           | 44.57             | 81,20             | 50.73            | 37.21                 | 24.96          | 0.36                | 23.41  | 37.49             | 35   |
| MEALS                   | 25.78             | 34.01             | 24.23            | 13.60                 | 14.18          | 11.14               | 23.98  | 21.42             | 20   |
| YACHTING                | 4.55              | 8.41              | 7.43             | 16.73                 | 241            | 0,04                | 39.16  | 11.25             | 11   |
| BAR                     | 7.29              | 8.37              | 9.11             | 3.34                  | 5.10           | 9.10                | 6.96   | 7.04              | 07   |
| TAXI                    | 5.09              | <b>5,78</b>       | 5.15             | 3.02                  | 7,59           | 2.94                | 5.27   | 5.55              | 05   |
| CAR RENTAL              | 6.22              | 3.96              | 2.97             | 2.97                  | 3.95           | 4,68                | 1.66   | 3.77              | 04   |
| TOURS                   | 2.18              | 2.85              | 2.86             | 294                   | 1,19           | 0.25                | 3.48   | 225               | 02   |
| ENTERTAINMENT           | 0.72              | 4.48              | 0.44             | 1.12                  | 0,97           | 2.78                | 0.59   | 1.58              | 01   |
| DUTY FREE SHOPPING      | 3.68              | 3.70              | 5.82             | 6.66                  | 4,80           | 1.91                | 6.24   | 4.69              | 04   |
| GROCERY SHOPPING        | 2.62              | 2.16              | 2.87             | 3.30                  | 3.90           | 3.72                | 8.46   | 3.86              | 04   |
| SPICE AND CRAFT         | 3.78              | 4.74              | 4.73             | 3.53                  | 3.04           | 3.89                | 4.89   | 4.09              | 04   |
| SPORTS                  | 0.08              | 243               | 1.13             | 0.16                  | 0.53           | 0.50                | 0.90   | 0.82              | 01   |
| OTHER                   | 4.16              | 1.82              | 1.44             | 1.16                  | 223            | 1.93                | 1.03   | 1.97              | 02   |
| TOTAL EXPENSES          | 113.73<br>ev Date | 167.91            | 118.91           | 95.74                 | 74.87          | 43.25               | 126.02 | 105.77            | 1 00 |

the daily expenditure estimates and continue with a discussion of the total expenditure results.

Average daily visitor expenditure patterns remained remarkably consistent between 1988 and 1992 (Tables 6.5 and 6.6). Accommodation accounted for about 38% and 35% of total daily spending in 1988 and 1992 respectively. A closer look at the results indicate that almost identical estimates are obtained for meals (20%), yachting (11%), and shopping (12%) (which in 1992 included duty-free (4%), grocery (4%) and spice and craft (4%)) for the two surveys. There are however, wide variations in total daily expenses by accommodation type. For example, in 1988 one notices little difference between large and small hotel accommodation (U.S. \$131.00). However, in 1992 total daily expenses for visitors using large and medium size hotels were U.S. \$114.00 and U.S. \$168.00 respectively. Spending of those in "other" accommodation types, however, is consistent at U.S. \$126.00 for both surveys.

A detailed examination of the daily spending in the 1992 survey results shows consistent patterns relating to accommodation use; visitors using mid-sized hotel accommodation from every country except Canada (Appendix 5B) are shown to be the higher spenders throughout, followed by those using large and small hotel accommodation. Interestingly, visitors using the accommodation type classified as "other" (principally on yachts) are also characterized by consistently high daily expenditure. The majority of visitors within this category are Americans and Canadians (Appendices 5A and 5B).

As expected, visitors depending on friends and family for accommodation have the lowest overall expenditure and come mainly from the U.S.A., U.K. and the other Caribbean islands, the countries to which most nationals' relatives and friends migrated over the past 25 years. Also noticeable is the wide range of daily spending by different

tourist types, from the highest spenders who are Europeans, (Appendix 5D) using midsize hotel accommodation (U.S.\$ 181.00) to the lowest spending category: mostly U.S. residents (Appendix 5A) visiting relatives, family and friends (U.S.\$ 34.86).

This method of analysis also allows one to closely examine the expenditure breakdown for any individual country of residence. For example, U.S. visitors (Appendix 5A), spend an average of U.S. 110.90 daily; with 55% of this amount spent on accommodation and meals. The highest spending American visitor (U.S. 181.89) using medium sized accommodation spends about U.S. 37.00 more per day than the American using a large hotel; the second highest spending category. Those U.S. visitors using small (< 25 rooms) hotel and "other" accommodation types (mainly yachts) spend approximately the same daily amounts (U.S. 130.00). As anticipated those staying in guest houses, apartments or with friends, family and relatives spend the lowest amount (less than U.S. 100.00.)

The approach allows us also to compare spending patterns of visitors from different destinations. For example, some interesting observations can be made when Appendix 5 is closely examined. About 30% of the spending by all tourist groups (Appendices 5A to 5E), except European visitors (44%), is on accommodation with another 20% on food. Canadians and Americans spend approximately 15% of the total daily spending on yachting, while the British, European and Caribbean visitors spending within this category is negligible. However, it is observed that visitors from every country spend similar amounts at the restaurant (20%) and bar (7%), tours (2%) and shopping (10%). Canadians tend to spend more on duty free items and spices while U.K. visitors purchase more groceries.

The approach also serves to detail the total expenditure contribution of different tourist types, groups or segments. This data is critical for the development of planning and marketing strategies, to help determine market niches to be targeted, and to identify investment opportunities within the tourism industry. Total visitor spending has been discussed earlier in this chapter. However, a closer look at Appendix 6 and 7 serves to show the usefulness of this level of detail to tourism planning and marketing.

It is estimated that the tourism industry contributed U.S. \$22.7m to the economy in 1988 (Table 6.2). More instructive, however, is the breakdown by country of residence. It is revealed that in 1988 the main contributors were visitors from the Caribbean (38% or U.S. \$8.5m) and the U.S.A. (32% or U.S. \$7.2m). Tourists resident in the U.K., Canada and Other Europe contribute 19%, 8% and 3% respectively (Appendices 6A to 6E).

The patterns are significantly different when the results of the 1992 analysis are closely examined. In this case the highest contributors are the Americans (38% or U.S. \$14.2m) while Caribbean island visitors again contribute U.S. \$8.5m but in this case make up only 24% of the total tourist expenditure. Tourists resident in the U.K., Canada and Other European nations contribute 17%, 8% and 13% respectively (Appendices 7A to 7E). Most striking is the increased contribution by the visitors from other European countries, from U.S. \$0.7m (3% in 1988) to U.S. \$4.6m (13% in 1992). The contribution by Canadian and British visitor has shown marginal increases, however, the percentages remained consistent at about 8% and 17% respectively.

When the breakdown for 1992 is scrutinized, some interesting observations can be made. For example, of the U.S.\$14.2m expenditure by U.S. visitors approximately \$4.0m (28%) was contributed by visitors using mid-size hotels, \$2.9m (20%) spent by those living with friends and relatives, while \$1.9m (13%) of that sum was contributed by guests at the large hotels. It is also instructive to note that 6% and 7% of the total spending by U.S. visitors is on spices and crafts and drinks (bar and refreshment). This



highlights to some degree the level of economic linkages with local craft producers and serves to inform the local manufactures of the level of tourist demand for alcoholic and non-alcoholic beverages.

The results are also useful to individual firms particularly within the accommodation sector. This type of information can help one to determine or identify unsatisfied demand for goods and services by individuals using specific accommodation types. As an example, the results reveal that both Caribbean (Appendix 7E) and American visitors (Appendix 7A) living with friends and relatives each demanded approximately U.S. \$0.2 million in auto rental services.

The classification variables; package, nationality and accommodation type, were elaborated here only because they clearly distinguish the classes on which this research is focused. However, other classifications or categorizations can be used if necessary or appropriate to determine different tourist types or segments.

For example, the 1992 data set was used to classify and analyze tourist types on the basis of package, country of residence and purpose of visit. The results reveal significant differences in daily expenditure when the purpose of the visit is distinguished. Average daily expenditure for U.S. visitors on vacation was U.S. \$156.68 as compared to U.S.\$125.29 for visitors on business, with Caribbean visitors showing the opposite tendency, with business persons spending U.S. \$151.92 compared to U.S.\$92.88 for vacationers .

Expenditure can further be analyzed using identifiable visitor segments developed using different variables (see Chapter 5). As the average daily expenditure by clusters is already presented in Chapter 5 (Table 5.12) only a short explanation is presented here to set the stage for the later analysis of the impacts by segments derived from these plusters.

The results of an ANOVA test for differences of means show statistically significant differences in expenditure on accommodation, yachting, taxi, grocery shopping and "other" between the "Less Active, Rest and Relaxation oriented tourist (Cluster 1), the Active Water Focused visitors (cluster 2), and the "New Age" Soft Adventure types (Cluster 3)( see Table 5.12 ). The results serve to dispel the notion that the more active, nature oriented visitor spends significantly h is per day on vacations because he or she is more likely to live at very cheap "basic" accommodation, cook their own meals and wall: everywhere.

The previous paragraphs served principally to show that visitors can be segmented in many ways and also that the visitor expenditure survey can be analyzed on many different bases to meet the specific objectives of the project. Within this research project, the focus is on distinguishing as clearly as possible, the tourist types that impact most (negatively or positively) on both the economy and the environment. It was therefore decided that the expenditure survey is best analyzed on the basis of country of residence and the accommodation type used. These are the principal tourist types on which the economic impact analysis outlined in the remaining sections of this chapter will be based. However, before the economic impact analysis is presented it is necessary to outline the methodology and results of the business survey conducted as part of the economic impact analysis. This is an important precondition for the use and operationalization of the differential multiplier approach used in this exercise.

## 6.4 INDUSTRY SURVEY

An extensive survey of businesses directly and indirectly serving the tourist industry was carried out during the 1992 winter season. Interviews were conducted with a large sample of businesses representing all tourism sectors. A wide cross-section of businesses was interviewed to ensure that the various sizes, ownership structures and business types were well represented (see Table 6.6a).

| Business Sector  | Interviews | Total | Business Sector | Interviews | Total |
|------------------|------------|-------|-----------------|------------|-------|
| ACCOMMODATION    | <u> </u>   |       | TOUR OPERATORS  | 4          | 10    |
| Large Hotels     | 1          | 1     | NIGHT CLUBS     | t          | 3     |
| Mid-size Hotels  | 4          | 10    | DUTY FREE SHOPS | 3          | 6     |
| Small Hotels     | 6          | 9     | WATER SPORTS    | 2          | S     |
| Apartment/Villas | 5          | 18    | VENDORS         | 15         | 159   |
| Guest Houses     | 3          | 22    | GROCERIES       | 1          | 13    |
| RESTAURANTS      | 4          | 18    | SOUVENIR SHOPS  |            |       |
| YACHTING         |            |       | T-Shirt shops   | 5          | 21    |
| Service          | 2          | 2     | Large shops     | 2          | 6     |
| Charters         | 1          | 3     | Small shops     | 4          | 23    |
| TAXI             | 5          | 94    | BARS            | 2          | 15    |
| AUTO-RENTAL      | 2          | 15    | OTHERS          | 3          | -     |

### TABLE 6.6A OUESTIONNAIRE INTERVIEWS COMPLETED BY BUSINESS TYPES

Source: 1992 Survey Data

Interviews were also conducted with public sector organizations, statutory boards and authorities that provide services to and receive benefits from the tourism industry. These include 42 formally registered firms and 31 businesses within the informal sector. This represents more than a 30% coverage within most sectors. The wide coverage and in-depth interviews ensure that the information provided on industry revenues, employment generation and general cost structures is relatively accurate and reliable.



The essential feature of the following analysis is the calculation of regional income (RIG), employment (REG) and government revenue generation (RGRG) coefficients for the requisite sectors and establishments. These are connecting factors in the multiplier equation (Appendix 3.). First the fraction of each \$1 of turnover retained by a business, that subsequently becomes income to households in the region (RIG), is measured. Secondly, the relationship between turnover receipts from tourism within each business sector and employment generated (REG) is then calculated. The regional government revenue generation (RGRG) coefficient similarly indicates the fraction of every \$1 spent by businesses in the local economy that becomes direct or indirect revenue to the government. This includes payments made directly to the treasury through taxes, levies and duties and indirectly to the government through the quasi- government run utility companies, boards and corporations (Milne, 1987c).

Again the benefits of disaggregation are clear; income and employment coefficients can be determined at the level of the individual firm, as is the case of the only large hotel on the island or at the level of market segments. Using this "ad hoc" method, it is possible to determine coefficients for different hotel sizes. Within this study, it was decided to divide the accommodation sector into five separate categories: large hotels (>60 rooms), mid-size hotels (25 -60 rooms), small hotels (< 25 rooms), apartments/villas (self contained independent cottage type units, < 25 rooms) and guest houses (generally < 25 rooms with no frills).

During the survey period only one large hotel was operating on the island. As indicated earlier two additional large "all-inclusive" properties have since been added. It would have been helpful to compare income generation coefficients of "traditional" vs "all inclusive" targe hotel within this analysis; however, that was not feasible at this time. The mid-size category included 10 properties accounting for 301 of the 1114 available rooms in 1992. Small hotels made up 10% of the islands room stock with

۲

approximately 110 rooms within 9 individual properties. Self contained apartment hotels contributed 210 rooms, while Guest Houses provided a further 125 rooms. Of the other tourist sub- sectors only yachting and the souvenir and craft sectors were further subdivided for the purposes of this research.

In calculating the Regional Income Generation (RIG) coefficients from the responses to the business survey discussed above it was first necessary to determine the proportion of total revenue spent on salaries, wages, rents and profits. This was calculated for each business category outlined in Table 6.6A. Since each tourist type presented in the previous section has a different size and pattern of expenditure, it was necessary to use weighting to estimate a true regional income coefficients. Therefore, weights were applied on the basis of; package versus non-package users, accommodation used and visitor's place of residence. The results are summarized in Table 6.7 while the detail methodology is explained in Appendix 3. attached.

Important determinants of the coefficients are the labour intensity and scale of operations in association with the degree of linkage that exists with other sectors of the local economy (Archer, 1993; Milne, 1987a). Tourist sectors, such as the smaller accommodation types, handicraft producers and restaurants, which are more labour intensive and have wage payments as a major cost component, tend to have relatively higher direct RIGs and REGs than larger hotels, duty free shops, larger souvenir shops and auto rental operations (Table 6.7).

The more a business's expenditure flows to suppliers within the region the higher the indirect generation coefficients will be. Similarly, the higher the propensity to import, the lower will be the indirect generation coefficient. The induced components of the RIGs and REGs depend upon the value of the direct and indirect RIGs for each business type. It is also dependent on assumptions about the average propensity for those earning



# <u>TABLE 6.7</u>

| REGIONAL INCOME | EMPLOYMENT AN | D GOVERNMENT | <u> REVENUE CO</u> | -EFFICIENT | <u>1992</u> |
|-----------------|---------------|--------------|--------------------|------------|-------------|
|                 |               |              |                    |            |             |

| SECTOR              | RIG    | REG    | RGRG   |
|---------------------|--------|--------|--------|
| ACCOMMODATION       |        | •      |        |
| - Large Hotel       | 0.251  | 0.2753 | 0.2027 |
| - Mid-size Hotels   | 0.2987 | 0.2456 | 0.2193 |
| - Small Hotels      | 0.3388 | 0.3173 | 0.2549 |
| - Apartments/Villas | 0.2975 | 0.3190 | 0.2418 |
| - Guest Houses      | 0.3159 | 0.3313 | 0.2282 |
| RESTAURANT          | 0.3987 | 0.4301 | 0.1979 |
| YACHTING            |        |        |        |
| - Services          | 0.3997 | 0.1697 | 0.2626 |
| - Charters          | 0.1803 | 0.1903 | 0.2004 |
| - ( Average )       | 0.2351 | 0.1852 | 0.2160 |
|                     |        |        |        |
| TAXI                | 0.3072 | 0.2789 | 0.0963 |
| AUTO RENTAL         | 0.2076 | 0.1775 | 0.2024 |
| TOUR OPERATORS      | 0.3252 | 0.3556 | 0.1326 |
| ENTERTAINMENT       | 0.2843 | 0.2886 | 0.2921 |
| DUTY-FREE SHOPPING  | 0.1670 | 0.1387 | 0.2534 |
| GROCERY SHOPPING    | 0.1925 | 0.2134 | 0.2358 |
| VENDORS             | 0.5897 | 0.5878 | 0.0821 |
| WATER SPORTS        | 0.3945 | 0.4666 | 0.1295 |
| SOUVENIR            |        |        |        |
| - T- Shirts         | 0,3874 | 0.2446 | 0.2804 |
| - Large Shopa       | 0.1619 | 0.2183 | 0.2906 |
| - Small Shops       | 0.4193 | 0.1905 | 0.1666 |
|                     |        |        |        |
| BAR                 | 0.1643 | 0.1539 | 0.4211 |
| OTHER               | 0.2702 | 0.1934 | 0.2483 |
|                     |        |        |        |
| (WEIGHTED AVERAGES) | 0.2888 | 0.2785 | 0.2235 |

Source: 1992 Survey Data



income to consume goods and services within the local economy (see Appendix 3). Overall the direct RIG coefficients (Table 6.7) range from 0.5897 (59 cents in every \$1 of turnover) for the handicraft vendors to 0.1619 (16 cents of each dollar of turnover) within the larger souvenir shops.

Although a detailed sectoral analysis is not possible within this research project there is strong support for the hypothesis (Table 6.7) that " smaller firms are more linked to the local economy than their larger counterparts" (Liu and Var, 1982a, Milne, 1987a, Hoare, 1985). Sectors dominated by smaller firms are shown here to generate relatively more local income at the direct level than their larger counterparts. Larger operations tend to be more cost effective, through economies of scale, and require greater capital investment.

A closer look at the coefficients (Table 6.7) confirms that the smaller accommodation (small hotels \$0.33, guest houses \$0.31) types contribute marginally more per tourist dollar to regional income than their larger counterparts (large hotel \$0.25). The same trend is noticed within the souvenir category where smaller shops contribute more than twice that of larger businesses. This is accounted for by the dominance of foreign owners and foreign made (Taiwan, Hong Kong and China) souvenir products within the larger "tourist" shops. Although the souvenirs are mostly island specific, the bulk of the items are foreign made.

The differing contributions found within the yachting sector are also interesting. The average RIG for yachting is 0.23, masking the fact that the yacht servicing sub-sector (\$0.39) contributes twice as much as the yacht charter sub- sector (\$0.18). The yacht charter sector offers "bare boat" or "full service" daily rentals, while the yacht service sector concentrates on repair, storage and maintenance of luxury yachts; some of which are chartered when not being used by the owners. With the GBT's traditional focus on "fixed" against "floating" accommodation there has been little attention paid to the island's yachting potential. This research confirms the opinions of the manager of the Spice Island Marina, the largest operation on the island that:

The yachting industry provides more benefit to the island's tourism than is generally recognized. This should not be measured on the number of nights the yacht owners and sailors spend on the island but more important is the number of days the yachts themselves actually spends (Evans, 1992).

He further confirmed that "hard services"; dry docking, refitting, sail repairs and upholstering of luxury yachts, generate substantial income to the local owners and necessitate the employment of a wide variety of skilled workers. The income and employment generated from "soft services" associated with yachting; shopping, taxi, bar and souvenir in no way compares to that of the former (Evans, 1992).

The REG coefficients represent the number of full time jobs created per U.S. \$10,000 business turnover within the enterprise or sector. The employment coefficients reveal that there are very little difference between the number of jobs generated (per \$10,000 revenue) by the smaller ( small hotels, apartments and villas and guest houses .32, .32, and .33 respectively) and larger ( including mid-size) accommodation types (0. 28 and 0.25).

The coefficients show little differences in RGRG within the accommodation sector, with only about \$0.05 separating the small hotels (0.2549) from the large hotels category (0.2027). Nonetheless, it is apparent that the sectors dominated by smaller enterprises show consistently lower RGRGs (e.g. vendors 0.08, water sports 0.12 and taxi 0.09). This is a direct result of government tax concession policy, which specifies that business with annual total revenue of less than E.C. \$100,000 are exempt from payment of Value Added Tax (VAT), while those which generate above that figure are

charged at a fix rate. The RGRG is therefore directly dependent on government incentive policy, size of the enterprise and the size of the informal sector. This also points out the usefulness of this disaggregate approach in interpreting the results of incentive packages offered by governments through the Industrial Development Corporation (IDC).

Now that we have examined tourist expenditure patterns and business cost structures it is possible to measure the "real" contribution of each sector to the country's income generation. Here again I take a dissagregated approach. Rather than focusing on the performance of the 'average' tourist, I generate figures for as many tourist types as deemed useful to the analysis. The tourist types and segments used here are identical to the ones detailed in chapter 5.

### 6.5 TOURIST MULTIPLIER COEFFICIENTS

In this section, visitor spending patterns are used in association with the income, employment and government revenue coefficients generated from the business survey to help us better understand the total impact of spending by different tourist groups within specific sectors.

### 6.5.1 Regional Income Multiplier Coefficients

The direct "multiplier" coefficients calculated for the "average" tourist are 0.29, 0.28 and 0.22 for income, employment and government revenue respectively (Tables 6.8, 6.13a and 6.14a). It was not deemed necessary to weight the averages calculated within the final row of the tables since the scores from which they are derived are already weighted. The income figure compares favorably with the estimate of the Ministry of Finance (Government of Grenada, 1992) that there is 70 % leakage from tourism sector revenues. It must however, be emphasized that this study only measures the direct

"multiplier" coefficient (RIG) therefore, it is reasonable to assume that the leakage will be marginally less than that estimated by the Government of Grenada.

Of greater significance and use to planners and policy makers are the individual "multiplier" coefficients for tourist types on the basis of both country of residence and accommodation type (Table 6.8). A close look at the multiplier coefficients for tourists based on country of residence and accommodation reveals some interesting findings. Tourists using small hotel and guest house accommodation show the highest (RIG) coefficients (0.34 and 0.32), while occupants of "other" accommodation, principally yachts, and large hotels, show the lowest (0.23 and 0.25). When country of residence is considered, the tourists from Other Europe (Germans) and the Caribbean region (each \$0.30) show slightly higher contributions than the British and Canadians (0.28 and 0.25) visitors.

### TABLE 6.8 REGIONAL INCOME GENERATION COEFFICIENTS BY ACCOMMODATION TYPE 1992

|                        |                  |                   |                  |                       |                |                     | _      |          |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|----------|
| ACCOMMODATION          | Hotel<br>(Large) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER  | AVERAGES |
| NATIONALITY:           |                  |                   |                  |                       |                |                     |        |          |
| AMERICAN               | 0.2473           | 0.2915            | 0.3371           | 0.2929                | 0.3097         | 0.3104              | 0.2413 | 0.2587   |
| CANADIAN               | 0.2419           | NS                | 0.3295           | 0.2926                | 0.2293         | NS                  | 0.2177 | 0.2497   |
| UNITED KINGDOM         | 0.2653           | 0.2936            | NS               | NS                    | 0.3198         | 0.2722              | NS     | 0.2826   |
| OTHER EUROPEAN         | 0.2519           | 0.3052            | 0.3437           | NS                    | 0.3209         | NS                  | NS     | 0.3020   |
| CARIBBEAN              | NS               | 0.3081            | NS               | 0.3033                | 0.3208         | 0.2857              | NS     | 0.2986   |
| AVERAGES               | 0.2513           | 0.2987            | 0.3388           | 0.2975                | 0.3159         | 0.2901              | 0.2300 | 0.2888   |
| NS . NOT SUFERIEST DAT |                  |                   |                  |                       |                |                     |        |          |

NS - NOT SUFFICIENT DATA

Visitors from "Othe, Europe" (especially German) using mid-size hotel contribute most per dollar to regional income generation (0.34). Similarly high contributions to regional income are made also by the following visitors: Europeans using a guest house (0.32); Americans using either small hotels (0.33) or living with friends and family (0.31); Canadians accommodated at small hotels (0.33); and Caribbean residents staying in guest houses (0.32). These are the highest potential contributors to the national economy.

When daily income generation is calculated (multiplying the multiplier coefficients by the daily expenditure of different tourist categories) the picture changes somewhat (Table 6.9). Visitors in mid-size accommodation contribute by far the most regional income per visitor day (U.S. \$50.32). The second most important visitor type is the one using small hotels (U.S. \$40.19). It is interesting, however, to note that large hotels (U.S. \$28.46), self contained apartments (U.S. \$32.68) and "other" yachts (U.S. \$28.98) contribute similar levels of regional income. It is instructive to discover also, that in all cases both small and mid-size hotels, contribute more than all other accommodation types to regional income. The regional income generated by visitors using large hotel accommodation (U.S\$ 28.46) is surprisingly low, however, this might perhaps be explained by the larger percentage of room nights sold within packages in association with heavy discounting to maintain an acceptable occupancy rate.

On the basis of country of residence (see Table 6.9), the European (U.S. \$40.98) tourist contributes considerably more per day more than Caribbean (U.S. \$33.49) and American (U.S. \$31.58) visitors. Understandably, tourists staying with friends and family contribute only U.S. \$12.47. This calculation of daily regional income contribution by visitor type is probably the most helpful calculation for policy and planning purposes, for this clearly shows income contribution by individual visitor category (Table 6.9).

At this disaggregate level, it is observed that accommodation type is more important than country of residence in determining the income contribution. In this case, the mid-size hotel category is clearly the most significant accommodation type. For example, the German (U.S. \$55.60), American (U.S. 53.01) and the Caribbean (U.S. \$51.03) visitors using mid-size hotels consistently contribute the highest daily income.

Another method of examining the regional income contribution is by examining the total income contributed by different visitor categories. This is calculated by multiplying the total visitor spending on the basis of accommodation type (Table 6.3) by the direct regional "multiplier" coefficients derived for each corresponding category (Table 6.8). The results of this analysis are presented in Table 6.10.

### TABLE 6.9 DAILY REGIONAL INCOME GENERATION BY ACCOMMODATION TYPE: 1992

| ····                    |                  |                   |                  |                       |                |                     |       |          |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|----------|
| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | AVERAGES |
| NATIONALITY:            |                  |                   |                  |                       |                |                     |       |          |
| AMERICAN                | 35.79            | 2102              | 43.94            | 29.20                 | 16.61          | 10.82               | 31.66 | 31.58    |
| CANADIAN                | 27_39            | NS                | 27.44            | 26.86                 | 19.25          | NS                  | 26.32 | 25.45    |
| UNITED KINGDOM          | 20,94            | 41.91             | NS               | NS                    | 27.77          | 10.77               | NS    | 25.35    |
| OTHER EUROPEAN          | 29.73            | SS 33             | 49,19            | NS                    | 29.68          | NS                  | NS    | 40.98    |
| CARIBBEAN               | NS               | 51.03             | NS               | 42.00                 | 25.15          | 15.80               | NS    | 33.50    |
| AVERAGES                | 28.46            | 50.32             | 40.19            | 32,64                 | 23.69          | 12,47               | 28,99 | 31.37    |
|                         |                  |                   |                  |                       |                |                     |       |          |

NS - NOT SUFFICIENT DATA

Source: 1992 Survey Data

The results show that in spite of the U.S. 36.0m (Table 6.3) spent by stay-over tourist in 1992, only U.S. 10.4m (Table 6.10) of that became direct regional income within the local economy. This is to be expected since the direct income multiplier 183

coefficients range from a high of 58 percent within the handicraft and spices industry to a low of 16 percent in the large souvenir shops. The average regional income "multiplier" coefficient is calculated at only \$ 0.29 of ever dollar spent on the island. This comparatively low contribution is a reflection of the inability of the tourism industry in small, open and dependent microstates to create the necessary linkages with the local economy.

When the income generated by different tourist groups is compared, again some very clear trends emerge (Table 6.10). Visitors using mid-size hotels are the most significant group, with a contribution of U.S. \$3.43m, followed by those who lived with friends and family (U.S. \$2.51m). Despite the higher multiplier coefficient (RIG) produced by the smaller hotel group, it contributes much less to income generated(U.S. \$.79m) than large hotels (U.S. \$1.0m) (see Appendix 8 for details). This is accounted for by the limited number of available rooms within this category and the lower daily accommodation rates compared to the larger more luxurious properties.

An examination of income generated on the basis of economic sectors is also warranted. It is surprising to find that restaurants (U.S. \$3.1m or 30% of total income) generally generate marginally more local income than accommodation (U.S. \$2.8m or 28% of total income). This can be explained by the relatively large regional income coefficient (RIG) characterizing restaurants and bars and the widespread use of restaurants and bars by all visitors irrespective of accommodation type. Similarly, spice and craft sales contribute a large amount to income also because of the high coefficients (RIG) and universality of purchase.

Yet another way of examining the contribution of tourism to the local economy is by analyzing the expenditure data on the basis of segments or clusters. The results of the impact analysis when conducted on the basis of the benefit clusters established in chapter 5 show very little variation from what is already recognized. No major differences were discovered in income multiplier coefficients between cluster 1, the "rest and relaxation types", cluster 2, the " Active water focused type" and cluster 3, the "Soft adventure seekers". The resulting Regional Income Coefficients are 0.30, 0.29 and 0.30 for clusters 1, 2 and 3 respectively (Table 6.11a, 6.11b, 6.11c). Again it was confirmed that within each cluster the accommodation category "small hotel" consistently contributes the most to regional income generation (0.35 and 0.33 and 0.33 of each dollar spent by the respective segments).

#### TABLE 6.10 TOTAL REGIONAL INCOME GENERATION BY ACCOMMODATION TYPE (US\$ 100) 1992

| ACCOMMODATION      | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER  | TOTAL<br>INCOME | 2         |
|--------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|-----------------|-----------|
| INCOME FROM:       |                  |                   |                  | -                     |                |                     |        |                 |           |
| ACCOMMODATION      | 244.89           | 1531,55           | 377.92           | 579.62                | 152.83         | 0.00                | 0.00   | 2388.82         | - 25      |
| MEALS              | 411,57           | 818.07            | 182,70           | 385.87                | 120.04         | 881.85              | 215.93 | 3114.01         | 30        |
| YACHTING           | 49,48            | 161.53            | 42.40            | 154.83                | 11.43          | 1.99                | 207.83 | 629.50          | 00        |
| BAR                | 42.40            | 83,59             | 25.30            | 50.00                 | 14,91          | 391.53              | 3.N    | 543.58          | 85        |
| TAXI               | 57.82            | 198.86            | 33.25            | 83.30                 | 48,78          | 174.67              | 36.59  | 631.47          | <b>05</b> |
| CAR RENTAL         | 45.21            | 56.30             | 11.32            | 25.16                 | 14.43          | 187,86              | 7,77   | 251.06          | 83        |
| TOURS              | 28.90            | 60.02             | 18.30            | 35.43                 | 721            | 16.07               | 25.55  | 180.50          | 62        |
| ENTERTAINMENT      | 7.38             | 80.47             | 3.19             | 10.35                 | 5.66           | 189.08              | 3.76   | 279.89          | 8         |
| DUTY-FREE SHOPPING | 21.85            | 43.05             | 18.75            | 53.15                 | 13.96          | 65.88               | 23.52  | 240.60          | 62        |
| GROCERY SHOPPING   | 13.27            | 29.13             | 10.05            | 3.2                   | 10.02          | 137.32              | 36.78  | 294.80          | 8         |
| SPICE AND CRAFT    | 81.03            | 156.72            | 48.45            | 80.99                 | 25.96          | 420.81              | 56.32  | 881.30          | 68        |
| SPORTS             | 0.72             | 58.32             | 9.95             | 231                   | 3.33           | 48.95               | 8.01   | 131.58          | 01        |
| OTHER              | 42,11            | 34.50             | 10.36            | 45.09                 | 10.46          | 122.87              | 6.89   | 272.16          | 8         |
| TOTAL INCOME       | 1044.44          | 3430.83           | 761,94           | 1537.48               | 438,17         | 2518.77             | 654.69 | 10418.43        | 1 00 f    |

Source: 1992 Survey Data

# TABLE 6.11a REGIONAL INCOME (MULTIPLIER) COEFFICIENTS BY SEGMENTS (CLUSTER 1) 1992

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | AVERAGES |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|----------|
| NATIONALITY:           |                  |                   |                  | -                     |                |                     |       | <u> </u> |
| AMERICAN               | NS               | NS                | 0.3548           | 0.2555                | NS             | 0.3034              | NS    | 0.3045   |
| CANADIAN               | 0.2803           | NS                | NS               | NS                    | NS             | NS                  | NS    | 0.2803   |
| UK.                    | NS               | 0.3165            | NS               | NS                    | 0.3337         | NS                  | NS    | 0.3251   |
| EUROPEAN               | NS               | NS                | NS               | NS                    | NS             | NS                  | NS    | NS       |
| CARIBBEAN              | NS               | NS                | NS               | NS                    | 0.3220         | NS                  | NS    | 0.3220   |
| AVERAGES               | 0.2803           | 0.3165            | 0.3548           | 0.2555                | 0.3278         | 0.3034              | NS    | 0.3080   |

NS - NOT SUFFICIENT DATA

# Source: 1992 Survey Data

## TABLE 6.11b REGIONAL INCOME (MULTIPLIER) COEFFICIENTS BY SEGMENTS (CLUSTER 2) 1992

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER  | AVERAGES |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|----------|
| NATIONALITY:           |                  |                   |                  |                       |                |                     |        |          |
| AMERICAN               | 0.2335           | 0.2791            | 0.3439           | 0.2858                | 0.3026         | 0.3024              | 0.2872 | 0.3047   |
| CANADIAN               | 0.2247           | NS                | 0.3380           | NS                    | 0.3115         | NS                  | 0.2492 | 0.2808   |
| UK.                    | NS               | 0.2758            | NS               | NS                    | 0.3405         | 0.2304              | NS     | 0.2822   |
| EUROPEAN               | NS               | 0.2854            | 0.3302           | NS                    | 0.3194         | NS                  | NS     | 0.3117   |
| CARIBBEAN              | NS               | NS                | NS               | 0.2981                | 0.3050         | 0.2569              | NS     | 0.2567   |
| AVERAGES               | 0.2291           | 0.2801            | 0.3374           | 0.2919                | 0.3158         | 0.2632              | 0.2682 | 0.2932   |

NS - NOTSUFFICIENT DATA

Source: 1992 Survey Data

Tables 6.12a, 6.12b and 6.12c show the daily regional income generated by country of residence within the established benefit clusters. The average "active water-oriented" tourist (cluster 2) generates the highest daily income (\$ 31.37), closely followed by the "rest and relaxation type" (cluster 1) with a contribution of \$30.63 per day. The average "soft adventure" tourist (Cluster 3) produces a marginally lower average daily regional income of \$ 27.79 (Table 6.12c).

## TABLE 6.11c

### REGIONAL INCOME (MULTIPLIER) COEFFICIENTS BY SEGMENTS (CLUSTER 3) 1992

|                        |                  |                   |                  |                       |                |                     | -      |               |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|---------------|
| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER  | AVERAGES      |
| NATIONALITY:           |                  |                   |                  |                       |                |                     |        |               |
| AMERICAN               | 0.2553           | 0.2955            | 0.3387           | 0.3145                | 0.3160         | 0.2819              | 0.3190 | 0.3203        |
| CANADIAN               | 0.2352           | NS                | 0.3430           | NS                    | 0.3109         | NS                  | 0.2578 | 0.2867        |
| U.K.                   | NS               | 0.2877            | NS               | NS                    | 0.3178         | 0.2807              | NS     | 0.2954        |
| EUROPEAN               | NS               | 0.3097            | 0.3302           | NS                    | 0.3022         | NS                  | NS     | 0.3140        |
| CARIBBEAN              | NS               | NS                | NS               | 0.2981                | 0.3050         | 0.2824              | NS     | <b>0.2952</b> |
| AVERAGES               | 0.2453           | 0.2976            | 0.3373           | 0.3063                | 0.3104         | 0.2817              | 0.2884 | 0.3023        |

NS - NOT SUFFICIENT DATA

#### Source: 1992 Survey Data

Overall, mid-size hotel users contribute the most to daily income within both clusters 2 (Table 6.12b) and 3 (Table 6.12c)( each with approximately \$50.00), while small hotels feature the highest daily income in cluster 1 (\$46.38). As expected, within all clusters visitors living with friends and family contribute the least daily income-ranging from U.S. \$12.37 in cluster 3. to U.S. \$22.28 in cluster 1. The Europeans are by far the highest contributors to income generation (\$43.82) within cluster 3, while Americans create most daily regional income in the other clusters (\$35.36 and \$40.80 within clusters 1 and 2 respectively).
| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER     | AVERAGES |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-----------|----------|
| NATIONALITY:           |                  |                   | <u></u>          |                       | -              | ~···                | · · · · • |          |
| AMERICAN               | NS               | NS                | 46.38            | 37.42                 | NS             | 22.29               | NS        | 35.36    |
| CANADIAN               | 30.12            | NS                | NS               | NS                    | NS             | NS                  | NS        | 30.12    |
| U.K.                   | NS               | 40.65             | NS               | NS                    | 21.12          | NS                  | NS        | 30,88    |
| EUROPEAN               | NS               | NS                | NS               | NS                    | NS             | NS                  | NS        | NS       |
| CARIBBEAN              | NS               | NS                | NS               | NS                    | 26.13          | NS                  | NS        | 26.13    |
| AVERAGES               | 30.12            | 40.65             | 46.38            | 37.42                 | 23.62          | 22.29               | NS        | 30.63    |

# TABLE 6.12a DAILY REGIONAL INCOME GENERATION BY SEGMENTS (CLUSTER 1)

NS - NOT SUFFICIENT DATA

### Source: 1992 Survey Data

In summary, the direct Regional Income Generation (RIG) figures discussed above are extremely useful in understanding the importance of tourism to the local economy. The direct RIG coefficients show the potential of the European tourists (particularly German visitors accommodated in mid-size and smaller accommodation types) to generate local income.

# **TABLE 6.12b**

| DAILY REGIONAL INCOME GEN | ERATION BY SEGMENTS | S (CLUSTER 2) |
|---------------------------|---------------------|---------------|
|---------------------------|---------------------|---------------|

| ACCOMMODATION<br>TYPE:   | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | AVERAGES |
|--------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|----------|
| NATIONALITY:             |                  | ·                 |                  |                       |                | • •                 |       |          |
| AMERICAN                 | 35.15            | 70.23             | 39.48            | 54.45                 | 28.86          | 20.41               | 37.05 | 40.81    |
| CANADIAN                 | 24.04            | NS                | 31.33            | NS                    | 23.28          | NS                  | 23.46 | 25.53    |
| U.K.                     | NS               | 44.83             | NS               | NS                    | 27.54          | 11.20               | NS    | 27.86    |
| EUROPEAN                 | NS               | 36.44             | 48.90            | NS                    | 25.58          | NS                  | NS    | 36.97    |
| CARIBBEAN                | NS               | NS                | NS               | 41.76                 | 23.76          | 11.54               | NS    | 25.68    |
| AVERAGES                 | 29.60            | 50.50             | 39.90            | 48.10                 | 25.80          | 14.38               | 30.27 | 31.37    |
| NS - NOT SUFFICIENT DATA |                  |                   |                  | 100                   |                | <u> </u>            |       | ·        |

Source: 1992 Survey Data

188

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | AVERAGES |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|----------|
| NATIONALITY:           |                  |                   |                  |                       |                |                     |       |          |
| AMERICAN               | 36.05            | \$7,40            | 37,38            | 31.04                 | 23.50          | 14,98               | 29.35 | 32.82    |
| CANADIAN               | 18.01            | NS                | 31.38            | NS                    | 15.14          | NS                  | 19.82 | 21.09    |
| U.K.                   | NS               | 38.48             | NS               | NS                    | 35.63          | 9.08                | NS    | 27.73    |
| EUROPEAN               | NS               | 54.03             | NS               | NS                    | 33.66          | NS                  | NS    | 43.85    |
| CARIBBEAN              | NS               | NS                | NS               | NS                    | NS             | 13.05               | NS    | 13.05    |
| AVERAGES               | 27.03            | 49,97             | 34,38            | 31.04                 | 26.98          | 12.37               | 24.59 | 27.71    |

# TABLE 6.12c DAILY REGIONAL INCOME GENERATION BY SEGMENTS (CLUSTER 3) (

NS - NOT SUFFICIENT DATA

### Source: 1992 Survey Data

Figures on the Regional Income Generated per day are helpful in determining the daily contribution of each category, so as to evaluate the relative importance of each visitor type. Here it was found that irrespective of country of residence, tourists using mid-size accommodation generate higher daily income. It was also discovered that restaurants and bars contributed more significantly to income generation than the accommodation sector.

The analysis highlights the fact that a few of the sectors within the tourism industry with good potential for regional income generation have been overlooked in the past by policy makers. It is revealed that the yachting sector, particularly the 'hard services' sub-sector, has good potential for generating both income and employment opportunities. The results have shown that members of the informal sector including small souvenir shops, vendor operations and water sport facilities are fair contributors to the island's tourism contribution. The most significant revelation however, is the magnitude of the total contribution of the spice vendors, small craft shops and taxi operators to regional income generation.

#### Chapter VI: Economic Impact Analysis

Although the regional income "multiplier" coefficient analysis using the benefit segments did not produce any significant new revelations it has proven to be a useful and workable approach to adopt in future studies. The results indicate that the "rest and relaxation" type" and "soft adventure" types show the greater potential to generate local income followed by the "active water-oriented" segment (Tables 6.11a, 6.11b, 6.11c). However, when the actual income is examined it is shown that the greatest contribution was made by the "active water-based" type closely followed by members of the "rest and relaxation" segment (Tables 6.12a, 6.12b, 6.12c). The average "soft adventure" type (cluster 3), however, contributes only marginally less regional income per dollar spent. Overall it is clear that the mid-size and small hotel types are the most beneficial accommodation 'ypes in terms of regional income generation potential.

### 6.5.2 Regional Employment Multiplier Coefficients

The development of tourism in Caribbean microstates is almost always justified by reference to the industry's job creation potential. This research serves not only to determine the total number of jobs created by the Grenada tourism industry, but also to examine the types and number of jobs created by different types and segments of visitor. This, in turn, helps us to better understand the job creation potential of different forms of tourism development.

The research reveals that the Grenada tourism industry directly employs 1051 people, with more than 50% (665) of these employed within the accommodation and restaurant sectors. The tourist expenditure pattern and the regional employment "multiplier" coefficients shown within (Tables 6.2 and 6.7) allow employment profiles to be presented for the average tourist and also for different tourist types visiting Grenada (Table 6.13). Jobs, especially within the accommodation and restaurant sectors, are held predominantly by female workers and are considered full time permanent, if not

otherwise indicated.

REGs indicate how the industry's earnings are transformed into full time jobs, expressed here as the number of jobs created per U.S. \$10,000. The average tourist created 0.2785 jobs for every U.S. \$10,000 of expenditure (Table 6.13a). The disaggregated analysis shows (Table 6.13a) that guest houses (0.33) produce the most full time employment, closely followed by small hotels (0.31). Large hotels and "other" yacht charters provide the lowest quantity of full time jobs for the same revenue. As expected, the results show very little variation by country of residence. Since the range of tourist activities within island microstates is often relatively limited, the spending opportunities are also constrained. Most visitors therefore do the same things, visit the same places and therefore, spend about the same amount. The differences in expenditure are accounted for mainly by the choice of accommodation.

TABLE 6.13A REGIONAL EMPLOYMENT (MULTIPLIER) COEFFICIENTS BY ACCOMMODATION TYPE 1992 (PER US\$10,000 SPENT)

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER  | AVERAGES |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|----------|
| NATIONALITY:           |                  |                   |                  | ··                    |                |                     |        |          |
| AMERICAN               | 0.2719           | 0.2341            | 0.3151           | 0.3036                | 0.3215         | 0.3341              | 0.2293 | 0.2795   |
| CANADIAN               | 0.2680           | NS                | 0.3182           | 0.3193                | 0.3038         | NS                  | 0.2088 | 0.2546   |
| ux                     | 0.2947           | 0.2424            | NS               | NS                    | 0.3359         | 0.2698              | NS     | 0.2663   |
| EUROPEAN               | 0.2699           | 0.2547            | 0.3202           | NS                    | 0.3374         | NS                  | NS     | 0.2756   |
| CARIBBEAN              | NS               | 0.2576            | NS               | 0.3344                | 0.3381         | 0.2925              | NS     | 0.2947   |
| AVERAGES               | 0.2754           | 0.2456            | 0.3173           | 0.3190                | 0.3313         | 0.3000              | 0.2195 | 0.2785   |
|                        |                  |                   |                  |                       |                |                     |        |          |

NS - NOT SUFFICIENT DATA

Source: 1992 Survey Data

Of more direct relevance to the policy maker and economic planner is the total employment created and its distribution between tourism sectors (Table 6.13b). Nowhere in the Government's annual statistics is there any estimate of the total number of persons employed by different industries or sectors, including tourism.

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | TOTALS  |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|---------|
| NATIONALITY:           |                  |                   |                  |                       |                |                     |       |         |
| AMERICAN               | 53.06            | 93.99             | 39.45            | 69.\$7                | 9_59           | 97.18               | 33.97 | 397.13  |
| CANADIAN               | 11.16            | .\\$              | 7.27             | 18.46                 | 3.07           | NS                  | 28.50 | 68.45   |
| U.K.                   | 23.46            | \$7.16            | NS               | NS                    | 12.14          | 66.65               | NS    | 159.41  |
| EUROPEAN               | 26.77            | 63.56             | 27.44            | NS                    | 10.82          | NS                  | NS    | 128.58  |
| CARIBBEAN              | 23.45            | 67.44             | 23.60            | 76.54                 | 10.35          | 96.61               | NS    | 297.99  |
| TOTALS                 | 137.89           | 282.15            | 97.76            | 164.87                | 45.96          | 260.45              | 62.47 | 1051.56 |
| l                      |                  |                   |                  |                       |                |                     |       |         |

### TABLE 6.13B DIRECT FULL-TIME EMPLOYMENT ESTIMATES BY ACCOMMODATION TYPE 1992

NS - NOT SUFFICIENT DATA

Source: 1992 Survey Data

The government estimates that the tourism industry directly employed 1928 persons in 1989 (Government of Grenada, 1990). Even though people employed by the cruise ship trade are included in the government estimates, while excluded here, it is still difficult to rationally explain the vast difference. One source of error might be the government's addition of all workers within the restaurant and bar sector even those establishments frequented mainly by locals.

When compared to estimates developed and used by the Caribbean Development Bank (CDB) the results of this study appear reasonable. The CDB estimates that "the Caribbean tourism industry generates approximately the same number of direct full time jobs as the number of guest rooms offered within the destination (Lawrence, 1990). In the case of Grenada where 1114 guest rooms are available, 1051 full time direct jobs appears a very reasonable estimate. According to Mather and Todd "C.T.O suggest as a rule of thumb that the number of jobs dependent on tourism in the islands is around three times those in accommodation establishments" (1993 :23). On the basis of the multiple of three, and the overall estimate of 665 direct jobs in the accommodation establishment total employment dependent on tourism in 1992 might be in the order of 1995. This seems to be the method used by the government of Grenada to estimate tourism's contribution to job creation.

Tourists who stay at mid-size hotels and with friends and family generated about 50 % of the full time direct employment opportunities available within the tourist industry in 1992 (Table 6.13b). The large hotel employs 137 full time staff while the yachting sector produces 62 jobs. When looked at on the basis of country of residence it is found that American tourists accounted for 397 direct jobs while visitors from the Caribbean account for another 297. The Europeans on the other hand (including the U.K.) were responsible for about 25 % of the direct jobs. Given the small differences in employment coefficients between the categories, the impact on total employment seems to depend more on the total expenditure rather than on the sector's requisite multiplier coefficients.

Although accommodation, restaurants and bars account for approximately 60% of the direct employment opportunities created by the tourism industry, the number of jobs generated by the informal sector is quite impressive. The sale of spice and crafts to tourists is estimated to account for approximately 101 direct jobs, while taxi operators and ground tour operations generated 57 and 20 direct full time jobs respectively.

In light of the small variation in REG coefficients seen in Tables 6.7 and 6.13a and the lack of government statistics on visitor types classified by segments, it was not practical to produce either total employment by sector or by benefit segments. However, it appears very likely that the more active outgoing visitor types (clusters 2 and 3), will contribute marginally more than the rest and relaxation type visitors given their use of slightly more labor intensive operations.

### 6.5.3 Government Revenue Generation Coefficients

An analysis of tourism's contribution to government revenue is important since it is the state's responsibility to pay for much of the cost of destination advertising and promotion, maintenance of the attractions, and the management of the natural resources on which the industry depends. Limited research has been carried out within this area of study in the past, not only in the case of Grenada but also throughout the Caribbean region. Not much is known about the ability of governments in the region to meet the costs incurred in maintaining the growth and continued development of the tourism industry (through marketing and promotion, staffing, port facilities etc.). Even less is known about the cost of maintaining the integrity of the resources (water, beaches, parks etc.) on which tourism has been developed.

It is not always possible to determine the quantity of direct taxes collected from different segments of the tourism industry. Neither is it possible to examine the impacts of the concessions offered to tourism-related enterprises. This results from the inability of both the Grenada Board of Tourism and the Ministry of Tourism to accurately measure how much of the tourist dollar goes to the government and the breakdown of that contribution. It is not clear whether the tourism industry is being subsidized by local taxpayers or if the revenues collected from the tourism industry can adequately support the cost of its operation.

Using the RGRGs (Table 6.7) and daily visitor expenditure patterns (Table 6.6), it is possible to develop regional Government revenue "multiplier" coefficients (Table 6.14a) for each category of visitors. These coefficients show little variation with the highest being 0.24 and the lowest being 0.20 for Caribbean and Canadian visitors respectively. Government revenue is almost always a reflection of tax policy - making a small variation in results predictable. It is, however, more instructive to examine the daily contribution to government revenue by different tourist types (Table 6.14b).

As would be expected visitors using the higher priced (mid-size) accommodation category (average U.S. \$36.53) contributed most per day to government revenue. They were closely followed by the small hotel category (U.S. \$30.47). Large hotels, guest houses, friends and family and yacht accommodation all contribute less than U.S. \$25.00 per day to government revenue.

#### TABLE 6.14a REGIONAL GOVERNMENT REVENUE GENERATION COEFFICIENTS BY ACCOMMODATION TYPE

| ACCOMMODATION | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS | OTHER    | AVERAGES |
|---------------|------------------|-------------------|------------------|-----------------------|----------------|---------|----------|----------|
| NATIONALITY:  |                  |                   |                  |                       |                |         | <u> </u> |          |
| AMERICAN      | 0.1977           | 0.2221            | 0.2497           | 0.2356                | 02297          | 0.2142  | 0.1861   | 0.2181   |
| CANADIAN      | 0,2043           | NS                | 0.2568           | 0.2526                | 0.2479         | NS      | 0,1689   | 0.2025   |
| U.S.          | 0.2020           | 0.2206            | NS               | NS                    | 02204          | 0.2261  | NS       | 0.2204   |
| EUROPEAN      | 0.2125           | 0.2170            | 0.2619           | NS                    | 02252          | NS      | NS       | 0.2251   |
| CARIBBEAN     | NS               | 0,2160            | NS               | 0.2452                | 0.2295         | 0.2576  | NS       | 0.2405   |
| AVERAGES      | 0.2027           | 0.2193            | 0.2549           | 0.2418                | 0.2282         | 0.7341  | 0.1778   | 0.2235   |

Source: 1992 Survey Data

# TABLE 6.14b DAILY GOVERNMENT REVENUE ESTIMATES PER VISITOR BY ACCOMMODATION TYPE

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS | OTHER    | AVERAGES |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|----------|----------|
| NATIONALITY:           |                  |                   |                  |                       | <u> </u>       |         | <u> </u> |          |
| AMERICAN               | 28.42            | 40.39             | 32.54            | 23.48                 | <b>2</b> 2     | 7,47    | 24.41    | 24.17    |
| CANADIAN               | 21.13            | NS                | 21.39            | 23.19                 | 14.50          | NS      | 244      | 20,93    |
| ur.                    | 15.95            | 3149              | NS               | NS                    | 19.14          | 8.95    | NS       | 18.55    |
| EUROPEAN               | 25.07            | 39.25             | 37.49            | NS                    | 21.10          | NS      | NS       | 30.75    |
| CARIBBEAN              | N3               | 34.89             | NS               | 33,96                 | 15.00          | 1425    | NS       | 22       |
| AVERAGES               | 2718             | 34.53             | 30.47            | 24.85                 | 17,41          | 10.22   | 22.41    | 24.00    |

NS - NOTSUFFICIENT DATA

Source: 1992 Survey Data



#### Chapter VI: Economic Impact Analysis

These large differences can be explained first by the price differences between the accommodation types; in the case of the large hotel most of the available room nights are sold within packages which are discounted as much as 70% thus affecting the price of the room and therefore the tax paid. This highlights the impact of heavy discounting and increased dependence on tour operators in selling the product. With the increase in the sale of rooms through inclusive packages, at high discounts, the income and government revenue generated from tourism is expected to be significantly reduced.

The analysis also shows that visitors from "Other" Europe (U.S. \$30.75) and the Caribbean region (U.S. \$25.27) contribute the highest daily revenue to the public purse. Those producing the least revenue per visitor day to the government are visitors from the United kingdom (U.S. \$18.82) and the visitor resident in Canada (U.S. \$20.92).

It is estimated that the tourist industry directly contributes about U.S. \$8.0m to government revenues, with about 25 % of that sum generated by mid-size hotels (Table 6.15, Appendix 9). When the total contribution of tourism to government revenue is examined by sector it is found that the accommodation sector contributes approximately U.S. \$2.5m or 32% of the total. The restaurant sector provided another U.S.\$ 1.5m or 19% of the total government revenue collected from tourism. Most impressive however, is the contribution by the bars (U.S. \$1.3m or 17% of total revenue) which are normally part of the accommodation and restaurant sectors. This is not surprising since the duties, taxes, and levies on alcoholic beverages are very high on the island (in many cases adding up to 130% of CIF prices). The sectors dominated by informal enterprises (taxi 1%, spice and craft 1%, tour operators 1% and Taxi owners 2%) contribute the least to government revenue.

While the contribution of tourism to government revenue appears very impressive, it must be remembered that a large percentage of this includes payment to utilities: the National Water and Sewage Authority (NAWASA); Grenada Electricity Company (GRENLEC) and the Grenada Telephone Company (GRENTEL).

TABLE 6.15 TOTAL GOVERNMENT REVENUE COLLECTION BY ACCOMMODATION TYPE (US\$ '000) 1992

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER           | TOTAL   | 2   |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-----------------|---------|-----|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |                 | -       | -   |
| ACCOMMODATION           | 313.35           | 1267,89           | 303.07           | 534,44                | 120.37         | 0.00                | 0.00            | 241.0   | 32  |
| MEALS                   | 204.29           | 454,70            | 90.69            | 191.53                | 59.58          | 437.72              | 107.15          | 1545.68 | 19  |
| YACHTING                | 45,47            | 148,40            | 38,96            | 142.34                | 10.50          | 1.74                | :91.03          | 578.44  | 07  |
| BAR                     | 105.65           | 239.81            | 64.82            | 128.11                | 38.20          | 747.02              | o6.20           | 1392.52 | 17  |
| TAX                     | 1813             | هينه              | 10.42            | 24.13                 | 14.67          | 54.76               | 11.47           | 197,95  | œ   |
| CAR RENTAL              | 44.05            | 54.89             | 11.03            | 27.45                 | 14,07          | 183.15              | 7.58            | 3027    | D4  |
| TOURS                   | 10,97            | 24.47             | 7,46             | 14.45                 | 296            | 6.55                | 10.42           | 77.30   | 01  |
| ENTERTAINMENT           | 7.58             | 82.68             | 3.28             | 19.63                 | 5.84           | 173.70              | 1.86            | 257.57  | 04  |
| DUTY-FREE SHOPPING      | 45.80            | 9239              | 39.70            | 112.48                | 29.58          | 139.40              | 49.77           | 509.16  | 06  |
| GROCERY SHOPPING        | 1625             | 35.68             | 1231             | 34.58                 | 12.25          | 168.21              | <b>&lt;5.06</b> | 32436   | 04  |
| SPICE AND CRAFT         | 13.05            | 26.85             | 7,80             | 11.05                 | ىت             | 67,78               | 9.07            | 141.96  | 62  |
| SPORTS                  | 4.23             | 18.40             | 3.14             | ۵73                   | 205            | 25.45               | 253             | 4252    | 01  |
| OTHER                   | 12.61            | 10.36             | 130              | 13.50                 | 13             | 36.79               | 2.00            | 8150    | 01  |
| TOTAL INCOME            | 642.48           | 31892             | 595.79           | 1299.C                | 316.59         | 3432.25             | 506.17          | 8061.45 | 100 |

Source: 1992 Survey Data

These utilities charge rates that are comparatively high due to many factors including the high cost of operations; fuel, replacement parts, capital equipment etc. together with their monopoly business status. The revenue generated also includes the departure tax (U.S. \$10.00 per adult visitor) which goes directly for the operation and maintenance of the Point Salines International Airport.

Government revenue from import duties, stamp duties and levies collected directly from the tourism industry is minimal. This is a result of the generous duty and tax concessions offered by the government in an effort to attract investment in the tourist



#### Chapter VI: Economic Impact Analysis

industry. From survey interviews it was discovered that most enterprises have been granted duty-free concessions on the importation of materials, tools, equipment and in some cases furniture and raw materials. The revenues collected are therefore mainly from the value added (VAT) and property taxes. Government trading operations such as electricity and water authorities are also heavily dependent on revenue from the tourist industry. It can therefore be assumed that a large percentage of the regional government revenue generated (U.S. \$8.0m.) goes to the utilities companies with very little going directly into the treasury.

The Government contributes E.C. \$5m annually to the cost of operation of the Grenada Board of Tourism (GBT) and another E.C. \$1.5m as recurrent expenditure to the Ministry of Tourism for maintenance of the national parks and attractions (Government of Grenada, (budget estimates) 1993). It is therefore clear that when the many direct costs to the government of Grenada are considered, it is questionable whether tourism development can generate sufficient revenue to adequately develop and maintain the needed infrastructure. Although not the main focus of this project, it is imperative that further research be undertaken to determine whether the government collects sufficient revenue to continue financing the promotion, superstructure and infrastructure necessary for tourism's growth and expansion. It may be time also to reevaluate the incentive packages offered in light of limited direct revenues generated.

# CHAPTER 7 THE ENVIRONMENTAL DIMENSION: WATER

### 7.0 INTRODUCTION

This chapter examines the environmental impact of the Grenada tourism industry, with a focus on the most critical environmental issues facing the island at this time, perennial domestic water shortages and beach pollution. It looks at the water demand generated by different tourism and non-tourism users within the Grand Anse watershed, the most important beach tourism area on the island of Grenada. In addition, the chapter evaluates the contribution of these user groups to the pollution problems experienced at the Grand Anse beach. A secondary objective is to assess the effectiveness of Pc Arc/Info, a vector based Geographic Information System, as a tool to evaluate elements of the environmental impacts of tourism. The chapter also serves to demonstrate that environmental impacts can be effectively measured at the micro-scale. This micro-scale analysis (where impacts of specific tourist types and firms are determined) then forms a basis on which to evaluate the impacts associated with different forms of tourism development - from "conventional/mass" to "alternative".

## 7.1 BACKGROUND AND JUSTIFICATION

Grenada, like most Caribbean islands, is promoted, recognized and established as a winter beach tourism destination. This approach necessitates the concentration of the infrastructure and related activities around a few beaches along the leeward coastline. The Grand Anse watershed represents a very appropriate study area, since 65% (1992) of the available hotel rooms on the island are located within this watershed. The watershed has a total area of 192 ha,

is approximately 2.75 km wide and only about one kilometer from the bay to the watershed ridge. It is located approximately 4.8 Km (3 miles) to the south of St. George's and about the same distance north of the Point Salines International Airport and comprises three catchments adjacent to each other (Figures 7.1 and 7.2). The southernmost catchment is the largest with an area of 88 ha. The middle and northernmost catchments are approximately of the same size, their areas being 51 and 55 ha respectively. The topography in the catchments is initially gentle in the area of the beach, but rises steeply inland.

The land use pattern within the watershed is essentially urban, but of varying intensity among the three catchments. Economic activities in the southernmost catchment are almost solely related to the tourist industry. Most hotels are located in this catchment (Figure 7.2). In contrast, very few hotels are located within the northernmost catchment, which consists almost entirely of local residents. The middle catchment features a mixture of these two land uses. In this study, the southernmost, northernmost and middle catchments are referred to as 'tourist', 'resident' and 'mixed' respectively. This categorization aids the interpretation of pollution contribution to the Grand Anse bay. This is because there appears to be very little movement of water within the bay (Bellairs Research Institute, 1989).

Current water supply problems on the island relate to both quantity and quality. With an annual rainfall varying from 3550mm (140") in the central mountains to the lowest 1500mm (59") in the south west, it would seem that running water can be adequately supplied to all homes despite the topographical and geological obstacles. This indicates that the water resources on the island are sufficient to meet normal daily demands (estimated at 50 gals per person or 7,400,000 gpd - gallons per day). However, its storage and distribution during the dry season is proving to be extremely problematic for the national authority (Noel, 1992). There are approximately twenty-nine water supply schemes on the island of which twenty-three are fed by surface water. Their total supply capacity equals 7,000,000 gpd. in the rainy season and diminishes to 4,800,000 gpd. in the dry season, when hotel occupancy rates are highest.







Although wet season production is adequate to meet demand, there is a deficit in the region of twenty-five percent when dry weather prevails (De Waal, 1987).

In 1990 approximately 76% of the island's total daily output of 6.0 million gals was obtained from surface water sources, the remaining 1.4 million gals came from six underground wells located mainly in the more arid southern region of the island (NAWASA, 1991). The National Water and Sewage Authority (NAWASA) since 1990, however, has experienced major technical difficulties in the drilling and extraction of the underground water, therefore the production from the wells is now reduced considerably. NAWASA's management now acknowledge their gross overestimation of the potential contribution of underground sources to the domestic water supply of the greater St. George's area. By 1992, the number of underground wells in operation was reduced to four resulting in a total well contribution of only 0.52 million gals per day.

Although the island's resident population has remained at the same level over the past five years, the water shortage problem has grown worse over the past decade. Three factors account for this trend. The first is that there is evidence of rural to urban migration towards St. George and principally to the south west urban area closest to and within the tourist belt (Government of Grenada, 1991c). This migration is often related to the development of tourism development opportunities in the area. Second, there has been a noticeable reduction in the production of water within the catchment due mainly to poor watershed management practices and deforestation (Thomas, 1991). Thirdly, there has been a constant increase in both the number of available guest rooms and hotel occupancy rates ( See chapter 4 above) over the past five years, causing additional demands on the water resources.

The visitor expenditure and motivational survey conducted during the 1988 season produced approximately 265 responses to question #18, which sought opinions on matters of concern during the vacation (Appendix 1b). The most frequent problem encountered was the indiscriminate littering of the landscape particularly the beaches within the tourist belt. The beach pollution/water issue also prompted 15 respondents to write extra comments - the general tenor of which is summed up in the following quote: " My main problem was the constant water shortage".

A similar question (Question # 20 in Appendix 1a) in the 1992 survey generated a total of 294 responses. There were seventy-five complaints about the water shortage, environmental and beach pollution problems on the island, with forty-three of these being comments on the water shortage problems. Some comments on the shortage are reproduced here to emphasize the extent of the problem and the negative publicity and image it creates.

Some respondents simply stated the impact of the situation on the enjoyment of their vacation:

- "Water problem serious at the hotel, water pressure not enough to flush the toilets";
- " Water limitation hindered enjoyment of vacation";
- "Water rationing is obviously necessary but unpleasant" and
- " Very upset by the lack of water in hotel, very inconvenient, no ice".

Other respondents offered helpful suggestions:

- " They were rationing water which is fine except we should have been forewarned";
- " Why has water supply not been corrected by increasing the dam capacity. Was Canadian money not donated for this purpose" and
- " Some hotels have no water for days, this is unsafe. To attract good holiday people you must offer safe water and safe food; members of my party fell ill from the food and water. This spoilt our vacation".

Water shortage occurs all over the island but most seriously affects Zone One, located in the south west of the island and including a triangle extending southwards from St. George's to the Point Salines Airport including the Grand Anse Watershed (Figure 4.3), where most of the tourist facilities are located. Zone One, with approximately 95% of the island's tourist accommodation facilities, and also the most densely populated residential and commercial areas on the island, generates the highest water demand and consequently experiences the most severe water shortages.

The second issue to be examined in this chapter is the source and extent of pollution in the area. Since the early 1980s a serious marine pollution problem has been recognized in the Grand Anse area. This is primarily the consequence of an increase in the volume of waste water, both sewage and 'grey' water (other household waste/waste-water and slope run-off) entering the bay. This increased production of waste water results from the growth over the past two decades of tourism facilities around the Grand Anse beach, and of residential developments in the tributary area at higher elevations inland (figure 7.2). This pollution problem is of particular concern to the Government of Grenada, since the Grand Anse watershed is the major tourist area in Grenada and also an important recreational area for Grenadian nationals (Hunte, 1987).

Several studies have been commissioned to determine the extent of the pollution problem, to investigate causes and effects, and to make recommendations for its alleviation (Archer, 1984; Cambers, 1984, 1986; Dubois, 1984; Hunte, 1987; McGregor, 1987; Seatech, 1987; Taylor, 1987). The results of previous studies suggest that bacterial levels in nearshore waters off Grand Anse are high enough to be a public health threat, and that the nearshore waters have elevated nutrient levels. The eutrophication results in increased amounts of algae being washed onto beaches, and negatively affecting marine habitats, particularly coral reefs. Deteriorating coral reefs lose their aesthetic value to tourist and residents, lead to lower catch rates in the commercial fisheries, and may contribute to beach erosion and coastal property damage.



It was originally thought that the pollution in the Grand Anse Bay area was a result of the direct discharge of raw sewage from the broken sewer line outside the capital city (Edwards, 1992). The beach area is directly downstream from the broken outfall. As a result of this assumption, money and expertise were received from the Canadian International Development Agency (CIDA) to correct the problem (Seatech International, 1987). It turned out that after the project's completion, high colliform levels continued to be found within Grand Anse Bay.

Further study of the problem (Bellairs Research Institute, 1989) commissioned by the United States Agency for International Development (USAID) concludes that

" First, the results support the earlier work of Hunte (1987) suggesting that coastal water in the Grand Anse area, and particularly in the Grand Anse Bay is atypically eutrophic. Second, it is evident that there is a seasonal variation in water quality parameters, and that the pattern of variation may differ between parameters. (e.g. coliform and particulate matter higher in the wet season, while nitrates and phosphates are higher in the dry (Tourist season). Finally, and perhaps most significant ... the results suggest that much of the bacterial pollution of the Grand Anse bay originates from sources emptying directly into the bay rather from waste water transported to the bay from the waters outside St. George's".

The analysis that follows focuses on an examination of the land use pattern within the watershed and on evaluating the contribution of each building (by function) to the faecal coliform problem of the Grand Anse Bay. Of the six microbiological indicators used internationally for setting bathing water standards, faecal coliform is ranked as second only to *enterococci* as the best indicator of water contamination (UNEP, 1991: 38). The ongoing water monitoring program conducted by the National Sewage Authority, from which the data was collected does not routinely analyze monthly water samples for enterococci but does analyze the faecal coliform.

### 7.2 RESEARCH METHODOLOGY

Recent literature (e.g., Heidtke and Auer, 1993; Hudak et al., 1993; Hinaman, 1993; Ventura and Kim, 1993; Djokic and Maidman, 1993) has demonstrated the usefulness of GIS as a tool in water resource management. Its main advantage is in its ability to facilitate data input while helping to remove major obstacles in the use of spatially distributed watershed models for simulating run-off. Another application to which geographic information systems are ideally suited is water quality modeling within areas containing a large number of spatially distributed polluters. With a GIS, the spatially distributed nature of the pollution source as well as the heterogeneity of the attenuating natural resource media (soils, geologic structures, etc) can be more accurately represented<sup>5</sup>.

#### 7.2.1 Buffer Width Approach

The analysis is based on a PC Arc/Info approach developed by Xiang and Stratton (1993) for managing general water quality within watersheds by delineating buffer zones around their drainage network. The basis of this analysis rests on the theoretical models used to determine the buffer widths around streams, rivers or drains within which pollutants (faecal coliform in this case) will impact on the area of concern. The buffer can be used to maintain a desired water quality along the length of the watercourse or at a point such as at its outfall into a pond, ocean, or lake.

Several studies (Reneau, 1978; Viraraghavan, 1978; and Reneau et al., 1989) have demonstrated that faecal coliform concentrations decrease with distance from the source of generation and that this decrease may be due to physical removal and/or inactivation. The degree of physical removal by the absorption processes is a function of the soil matrix, being inversely

•

<sup>&</sup>lt;sup>5</sup>The software package PC Arc/Info has proven to be effective for research similar to that conducted here. This study used PC Arc/Info kit version 3.4D for data analysis.

proportional to particle size. Inactivation, or micro-organism die-off, on the other hand, increases with longer retention times. Therefore, one possible method of controlling bacterial pollution is to provide sufficient travel distance between the source and the point of concern so that physical removal processes can operate and retention times are sufficiently long to allow significant die-off.

It has been determined that the movement of a pollutants either through the soil or overland is dependent on the following properties:

- (i) saturated hydraulic conductivity, K;
- (ii) soil moisture capacity, C;
- (iii) ground slope, S; and
- (iv) ground roughness, n.

Several models exist on a site specific basis and could provide reasonably accurate predictions that could be used for controlling effluent quality within the localized area. However, these models may be unsuitable for use on a watershed scale. For general water quality control within the stream network of a watershed, Phillips (1989) suggests that a suitable method would be to establish zones of clearance or buffers, within which no potential pollution source should be located. These zones will provide assimilation, cleansing and/or delay of the pollutant of concern. The approach can be summarized as follows:

-Buffer effectiveness is a function of K, C, n and S.

-Identify a buffer, the reference buffer, of known soil properties, and with width that can achieve a determined degree of pollution attenuation.

-Decide on the degree of effectiveness of the new buffer in relation to the reference buffer, i.e., is it to remove the same, more or less of the pollutant.

-Determine the K, C, n and S values of the new buffer.

-Determine the suitable width of the new buffer by applying one of the two buffer width models, the detention model or the hydraulic model, described in Appendix 10.

The model of choice depends on whether the pollutant travels overland or through the soil on its way to the stream (see Appendix 7.10). In the Grand Anse watershed, although some

overland travel of the faecal coliform may occur, the main transport method of the faecal coliform to the drains is likely to be through the subsurface from buried septic tank effluent pipes. Therefore, the detention model, which attempts to represent pollutant movement through the subsurface, was judged to be more suitable and was used in this study for estimating faecal coliform movement.

Having identified the goals and objectives of the analysis, it is important to determine the number and types of coverage that will be required (coverages are maps containing different spatial information). As will be explained later PC Arc/Info prefers each category of data on a separate map (or coverage) to facilitate the analysis. This is critical also since different overlay techniques within Arc/Info need specific coverage types that consequently generate different results, particularly within the database fields in the output coverage.

Although many coverages were digitized for this project, only seven (Appendix 11) were used in the analysis. These included polygon coverages for Grand Anse watershed and its three catchments. The remaining coverages included soils, land use and a final coverage of the drainage network. Data for creation of these coverages were obtained from various sources such as maps, aerial photographs, and personal reconnaissance together with the results of land capability (FAO, 1984), sewer design (USAID, 1989) and water demand studies (DeWaal, 1987).

The boundaries were all extracted from a topographical map produced in 1976 and updated in 1982. The soils coverage was digitized from a soil map produced from a soil survey conducted by FAO in 1984 at 1:25000 scale, similar to that of the topographic map mentioned above. The land use coverage was produced from the 1982 topographic map and updated using aerial photographs flown in February 1992, while that of the sewer alignment and drainage network were developed from information produced by the National Water and Sewerage Authority.









To facilitate the analysis based on the buffer width model, it was first necessary to determine the buffer width, using the soil (Figure 7.3) and drainage network coverages (Figure 7.1) (see Appendix 10 for detailed procedure). The resulting coverage demarcated the critical zone (Figure 7.4). This coverage was then joined with the land use coverage using the OVERLAY function called INTERSECT, to indicate the land use within that critical zone (Figure 7.5). This critical zone coverage was further joined (again using the INTERSECT command) with each catchment coverage to define potential pollution contributors and non-contributors within the catchments (Figure 7.6).

The overlay capabilities within Arc/Info and the resulting database structures were used to perform the analysis (see Appendix 12). A schematic of the procedure is shown in Figure 7.7. with a description of the steps presented below. First the map boundaries are defined, then coverages (maps) are built. These are either built as polygon coverages, that use area as measuring units; or built as point and line coverages, that measure only lengths and positions. The latter being most useful for analysis of distances and feature counts. In this case polygon coverage which delineated the entire Grand Anse watershed and its catchments was digitized after defining the watershed boundaries from a 1:25000 topographical map and photographs. The watershed boundary coverage was then used to *clip* all coverage for purposes of analysis at the watershed level. The clip command is much like providing a template for cutting. Coverages for each of the three catchments were also produced and these were in turn used for clipping the catchment coverages for analysis on a catchment level.

The buffer width was determined before the high risk zones were identified. A line coverage, which contained all values for calculating the buffer width, was produced from the intersection of the soils coverage and the drainage network coverage (see Appendix 12. for details). The calculate command was then used to fill the vacant buffer width field. This calculation determined the buffer width for different soil types in a worst case scenario under saturated soil conditions, as would apply during the wet season. Corresponding buffer widths



•

# FIGURE 7.7 GIS OVERLAY PROCEDURE

ļ



could also be determined for soils at varying degrees of saturation, by varying the soil moisture values within the soils database.

Finally, the potential polluters (Figure 7.6) within the buffer zones were identified. This figure was created by the intersection of the points coverage containing the land use data (Figure 7.2) and the polygon coverage delineating the high risk zone (Figure 7.5). Similar procedures were followed for each catchment, identifying potential polluters and allowing water use and demand calculations to be done within these geographic units. Finally after these coverages are made and the associated databases are updated, the results are then analyzed using the Calculate and Statistic commands within the Arcplot module.

In light of the difficulty cf finding certain data, several assumptions were required to supplement the information. It has been assumed that the average household size in the area is four (Government of Grenada, 1991b) and that during the festival season (August), each household would accommodate an average of one visitor. Daily water consumption per capita of 50 gallons, as suggested by De Waal (1987) and Seatech (1987), was used for calculating water demand by the local residents. It was also assumed that all households within the watershed have access to an in-house, pipe borne, domestic water supply. Also, it was assumed that the faecal coliform concentration of the waste water was consistent with typical values and was equal to  $5 \times 10^7$  MPN/100 ML (Most Probable Number/100ML or CFU/100ML) (Seatech, 1987). It has also been assumed that all of the daily water consumption becomes waste water. This appears a to be a reasonable assumption for all but the mixed catchment in which some recycling of water is practised at the Ramada Renaissance hotel. Pollution estimates were performed using a scenario assuming a ten hour 1 in/hr intense rain storm.

### 7.3 RESULTS AND DISCUSSION

First, a brief overview of the findings is given followed by a detailed discussion of the

land uses and population found within the area. This is followed by a discussion of the results of the water demand analysis and an overview of their implications to future tourism development. Thereafter, the pollution results are presented followed by a discussion of the impacts on the natural resource base. Finally, the implications for the sustainability of the island's tourism industry are raised.

#### 7.3.1 Land Use Patterns

Two hundred and twenty-one (221) of the 470 buildings within the Grand Anse watershed are located within what is considered the high risk pollution zone (Table 7.1). Two thirds (148) of these are used for residential purposes or other non-tourist related activities (Table 7. 2). This is to say, that a large number of residential buildings are potential polluters of the waters within the Grand Anse Bay. This is not surprising when one considers the building construction practices in many of the Caribbean countries. Legal setback distances from the center line of the major streams are established by the Public Works authorities to facilitate maintenance work. However, residents frequently extend their dwellings to well within the setback, unintentionally increasing the potential for water quality deterioration within the streams, the stream outfall areas and eventually the bay.

Although, only one third or seventy-three of the buildings located within the high risk zone are used for tourist related activities, the tourism sector may contribute as much to Grand Anse Bay pollution problem as the local residents. This depends not only on the size of the buildings and quantity of rooms within them, but also on the type of accommodation, the occupancy rates, the per capita water consumption and the building's location relative the streams.

Table 7.3 shows the breakdown of buildings that house tourist related activities by accommodation type and building location within the high risk zone (Table 7.3). Not only are

|           | Number of buildings per catchment |       |             |        |  |  |  |  |  |
|-----------|-----------------------------------|-------|-------------|--------|--|--|--|--|--|
| Zones     | Tourist                           | Mixed | Residential | Entire |  |  |  |  |  |
| Safe      | 80                                | 83    | 86          | 249    |  |  |  |  |  |
| High risk | 72                                | 35    | 114         | 221    |  |  |  |  |  |
| Total     | 152                               | 118   | 200         | 470    |  |  |  |  |  |

# TABLE 7.1 TOTAL BUILDING WITHIN THE STUDY AREA.

Source: 1992 Survey Data

# TABLE 7. 2 BUILDINGS WITHIN THE HIGH RISK ZONE.

| Number of buildings per catchment |         |       |             |       |  |  |  |  |
|-----------------------------------|---------|-------|-------------|-------|--|--|--|--|
| Sector                            | Tourist | Mixed | Residential | Total |  |  |  |  |
| Tourist                           | 54      | 14    | 5           | 73    |  |  |  |  |
| Non-<br>tourist                   | 18      | 21    | 109         | 148   |  |  |  |  |
| Total                             | 72      | 35    | 114         | 221   |  |  |  |  |

# Source: 1992 Survey Data

small, low density accommodation units such as apartments and guest houses included, but medium and large hotels are also well represented. Forty-three of the 73 buildings in the high risk zone belong to the mid-size hotel category and are all located within the "tourist" catchment. The only large hotel accommodation within the study area has eleven buildings, all located within the "mixed" catchment, while only five buildings within the "resident" catchment are used for tourist related activities (Table 7.3).

This information should prove useful to the water authority which is in the process of implementing a sewage collection scheme via a main trunk line. With these numbers, an estimate of the number of buildings that should be hooked up to the sewer system can be readily obtained. The result of this analysis also serves to indicate potentially high risk building sites where special mitigation conditions must be imposed. Although building construction may pose a temporary pollution threat, more important to this research is the daily use to which these buildings are put and their occupancy levels.

| Building     | Number of buildings per catchment |       |          |       |  |  |  |  |  |
|--------------|-----------------------------------|-------|----------|-------|--|--|--|--|--|
| Туре         | Tourist                           | Mixed | Resident | Total |  |  |  |  |  |
| Large hotel  | 0                                 | 11    | 0        | 11    |  |  |  |  |  |
| Medium hotel | 43                                | 0     | 0        | 43    |  |  |  |  |  |
| Small hotel  | 3                                 | 0     | 0        | 3     |  |  |  |  |  |
| Apartment    | 4                                 | 3     | 4        | 11    |  |  |  |  |  |
| Guest house  | 4                                 | 0     | 1        | 5     |  |  |  |  |  |

### TABLE 7.3 BUILDING BY ACCOMMODATIONS CATEGORY.

Source: 1992 Survey Data

## 7.3.2 Population Distribution

Tourists represent a significant portion (about 40%) of the 2385 people resident within the Grand Anse watershed during an average day in the month of August (Table 7.4). Furthermore, they represent more than eighty percent of the southernmost catchment's population. The northernmost catchment population consists of only about two percent tourists, while they make up fifty percent of the population in the middle catchment.

Of the entire watershed population, fifty-three percent or 1257 persons live within the high risk area (Table 7.5). Forty-four percent are from the tourist sector, with fifty-six percent local residents.

# TABLE 7.4 POPULATION DISTRIBUTION WITHIN THE GRAND ANSE WATERSHED

| Population<br>type | Population per catchment |       |             |       |
|--------------------|--------------------------|-------|-------------|-------|
|                    | Tourist                  | Mixed | Residential | Total |
| Tourist            | 608                      | 315   | 22          | 945   |
| Non-tourist        | 125                      | 355   | 960         | 1440  |
| Combined           | 733                      | 670   | 982         | 2385  |

Source: 1992 Survey Data

# TABLE 7.5 POPULATION DISTRIBUTION WITHIN CATCHMENTS.

|                    | Population per catchment |       |                 |       |  |
|--------------------|--------------------------|-------|-----------------|-------|--|
| Population by zone | Tourist                  | Mixed | Residenti<br>al | Total |  |
| Total              | 733                      | 670   | 982             | 2385  |  |
| High risk          | 317                      | 386   | 554             | 1257  |  |
| Safe               | 416                      | 284   | 428             | 1128  |  |

Source: 1992 Survey Data

This population represents potential water polluters to the drains. Since travel times within the drainage channels are short, very little microbial die-off is likely to occur with transport to the sea. Thus, potential drain polluters are potential bay polluters.

In the two southernmost catchments, namely tourist and mixed, water quality degradation is mainly from the tourist sector (Table 7.6). In the northern catchment, water quality degradation is due almost entirely to the local population which comprise 98 % of the population within the high risk zone.

#### 7.3.3 Water Consumption Patterns

There is concern about the ability of the National Water and Sewerage Authority to satisfy the demand for water by the tourism industry located mainly in Grand Anse watershed. The perception is that an inordinately large portion of the scarce water commodity is being supplied to the tourist sector and that local residents are not being adequately served (Grenadian Voice, May 1993). The analysis that follows examines the water consumption patterns within the Grand Anse watershed.

The results reveal that of the 195,000 gallons supplied each day to the Grand Anse watershed, 63 % is used to service the tourist sector (Table 7. 7). The tourist population is estimated at 39 % of watershed's population at any time during August (see Table 7.4). That is to say, for every one gallon of water demanded by the local residents, 2.6 gallons will be demanded by a visitor.

Table 7.8 provides a profile of the daily per capita water consumption for the various tourist accommodation types within the watershed. It reveals that there are significant differences in daily water consumption by visitors using different accommodation types. The Grenada Renaissance Hotel the largest hotel on the island (with 14% of available rooms) has



# TABLE 7.6 POPULATION DISTRIBUTION BY SECTOR WITHIN THE HIGH RISK ZONE.

| Population<br>Type | Population per catchment |       |             |       |
|--------------------|--------------------------|-------|-------------|-------|
|                    | Tourist                  | Mixed | Residential | Total |
| Tourist            | 247                      | 301   | 9           | 557   |
| Non-tourist        | 70                       | 85    | 545         | 700   |
| Combined           | 317                      | 386   | 554         | 1257  |

Source: 1992 Survey Data

## TABLE 7.7 WATER USE BY SECTOR WITHIN THE GRAND ANSE WATERSHED.

| Population<br>Type | Water use per catchment (gallons/d) |       |             |        |
|--------------------|-------------------------------------|-------|-------------|--------|
|                    | Tourist                             | Mixed | Residential | Total  |
| Tourist            | 67237                               | 54369 | 902         | 122508 |
| Non-tourist        | 6250                                | 17750 | 48000       | 72000  |
| Total              | 73487                               | 72119 | 48962       | 194568 |

Source: 1992 Survey Data

a daily per capita consumption of 165 gallons and accounts for approximately 43% of the water demanded by the accommodation sector. The medium size hotels also show a high daily water use per capita, averaging 125 gpd. Visitors using the smaller accommodation types (particularly the apartments/villas and guest houses) are very efficient users of water, often using less than 85 gpd. Daily per capita water consumption is also highest during the drier months (January to May).



In light of low density building regulation, the larger hotels usually contain many acres of well maintained gardens and open spaces, more swimming pools, "jacusies" and other water consuming devices, therefore, are expected to use more water per capita during the drier months than the small establishments. Another factor that will help to explain both the variation in per capita water use by season and accommodation size is the type of visitor attracted. As indicated earlier visitors using the smaller accommodation types are generally more active and outgoing, therefore, will spend less time at the hotel facility than users of larger hotels.

When water consumption by individual properties are considered many interesting patterns emerge. The most striking revelation is the uniquely low per capita water consumption by guests at the Siesta - a middle-sized hotel. This hotel uses only 78 gallons water per visitor day, which is even below the average water use for small hotels (81 gpd). The water savings have been accomplished by the use of a diligent water conservation system. The Siesta is the newest addition to the stock of hotels within this watershed and is managed and owned by a conservation-conscious individual who is an engineer by profession. During an interview with the manager/owner it was revealed that some of the most efficient water saving devices presently available have been installed throughout the establishment.

The results of this analysis have shed some light on a hotly debated issue frequently raised in the local media; newspapers, radio, and television programmes. That is a debate about the importance of the tourism industry to the island's economic development effort and how much the locals must be willing to sacrifice towards that end. It is clear that the severe water shortages not only irritate the tourists but also irritate the local population who have made the issue a frequent topic discussed within the local media.

Locals are beginning to think that their domestic water problem is a direct result of the growth in the tourism industry, and that when water must be rationed the water authority gives
### TABLE <u>7.8</u> DAILY PER CAPITA WATER CONSUMPTION BY VISITORS AT DIFFERENT ACCOMMODATION TYPES (IMP GAL) 1991

| MONTH                 | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEPT | ост             | NOV | DEC | WEIGHTED<br>AVERAGE |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----------------|-----|-----|---------------------|
| Accommodation<br>Type |     |     |     |     |     |     |     |     |      |                 |     |     |                     |
| Large<br>Hotels       | 277 | 199 | 151 | 194 | 163 | 164 | 210 | 184 | 206  | 1 <del>94</del> | 192 | 162 | 165                 |
| Mid-size<br>Hotels    | 151 | 113 | 92  | 121 | 113 | 121 | 102 | 150 | 110  | 102             | 135 | 120 | 125                 |
| Small<br>Hotel        | 134 | 62  | 76  | 127 | 104 | 77  | 100 | 64  | 76   | 59              | 79  | 51  | 81                  |
| Apt/Villa             | 63  | 65  | 40  | 64  | 44  | 49  | 49  | 61  | 89   | 55              | 86  | 74  | 56                  |
| Guest<br>House        | 36  | 35  | 27  | 41  | 16  | 34  | 26  | 44  | 72   | 67              | 64  | 58  | 45                  |
| Weighted<br>Average   | 136 | 98  | 80  | 108 | 88  | 95  | 97  | 108 | 102  | 90              | 102 | 104 | 98                  |

Source: NAWASA

1 GALLON = 4.546 LITERS

priority to first supplying the needs of the tourism industry, especially the accommodation sector. Some people have also argued that because most domestic households are assessed instead of metered, they pay a disproportionate share of the cost of providing that water. The results of this analysis tend to support this position. It is observed that the estimated daily water shortages experienced within the parish of St. George's, principally within what is known as Zone 1 (Figure 4.3), are about equal to the total daily consumption of the tourist industry. In 1992, St. George's parish water demand was estimated at 2.75 mgd and projected to increase to 3.05 mgd, by the turn of the century (NAWASA, 1993). The supply for the same area and period was estimated at only 2.55 mgd a shortage of approximately 200,000 gallons per day during the month of May, the driest month (NAWASA, 1991). This analysis found that the average daily water demand by tourists within the Grand Anse watershed is 122508 gallons or 65% of the area's total water demand. This can justifiably be interpreted as the peak daily water demand by the accommodation sector.

In reality the shortage within the tourist belt is probably much worse, since supply is measured at the intakes and demand is determined using gross estimates for different user categories. The National Water and Sewage Authority (NAWASA) estimates the water demand using the following assumptions about service levels:

- (a) For consumers having a private service connection, 50 gallons (net) per capita per day.
- (b) For public standpipe users, 20 gallons per day.
- (c) Tourist population uses 100 gallons per capita per day. and
- (d) Industrial and Commercial demand is actually metered while for Agricultural uses the estimate used is 15 percent of domestic demand (De Waal, 1987).

This research has discovered through analysis of the demand data and confirmed through interviews with senior officials of the water authority and hotel owners, that the water demand is actually much greater than is estimated by the water authority. It was discovered that the accommodation types classified as large (165 gpd) and medium (125 gpd) (containing more than 50% of available rooms) demand an average of 145 gallons per guest night as compared to 100 gpd used in the estimates.

Secondly, it may be safely assumed that losses through leaks are extremely high and probably much higher than the 40% currently assumed (Roberts, 1986). This is because the oldest pipes on the island, some being in the ground for over 100 years, are along the lines to St. George's en route to the tourist belt. In addition, the output of the main intakes (Vendome and Annandale systems) cannot easily be improved over the short term, particularly during the drier months since there has been a constant decrease in water production within the catchment over the past decade (Roberts, 1986).

It is widely agreed that the long term solution to the island's water shortage problem is to tap into more reliable sources of surface water, the closest being the Concord river about 16 kilometers further away than the present intake (Figure 4.3 above). This system was estimated to cost approximately U.S. \$10m in 1990 (NAWASA, 1990). Although this project has been submitted for grant and loan funding to the major international and bilateral donor agencies including the World Bank, USAID, CIDA and BDD, there is no firm commitment by any agency to fund the proposed project. In light of the Authority's inability to raise the necessary finances for the development of this major water improvement and distribution project, it is obliged to continue to seek temporary short term solutions.

Understandably, the Grenada Hotel Association is dissatisfied with the quality of service provided by the National Water Authority. This frustration has driven one of the well established "medium size" properties along Grand Anse beach to sink a well on its premises to pump underground water for its exclusive use. This has proven to be very costly and relatively unreliable, nevertheless, the management thinks that its investment is justified. In spite of the cost the hotel management claims that it has no other alternative in light of NAWASA's inability to satisfy their dry season water needs over the short and medium term. This situation has also resulted in a reluctance by members of the hotel association to pay their water bills on time. Some members have even tried to recover the cost of trucking water to the properties from the water authority.

The two short term solutions now considered by the water authority are to increase the dependence on the borehole source of supply and to extract the overflow water from the Grand Etang lake. The former was considered to be the most feasible solution by De Waal in 1987. Today however, it is recognized that the yields are lower than projected and the water quality leaves much to be desired. The high operational cost of pumping water from underground wells together with the technical difficulties experienced in the past have contributed also to a shift in emphasis away from underground wells as the main source of additional short term water supply.



The alternative short term solution is to redirect the overflow from the Grand Etang lake in the central mountains, back into the Annandale system (Figure 4.3). This option has met fierce opposition from environmental and community groups. This debate became particularly fierce because the Grand Etang lake is the central attraction on which the Grand Etang National Park, one of the most visited tourist attractions, is based. Some claim that this development is an attempt to kill the goose that lays the golden eggs, since many are convinced that many visitors are motivated to visit Grenada not only because of its excellent beaches but because of its diversity of attractions including the natural rainforest experience offered. This perception is supported by the tourist demand findings presented in Chapter 5.

The water debate revolves around two exclusive options: (I) whether to supply the resorts in the tourist belt with fresh water from the Grand Etang lake, or (ii) whether to continue to provide a pleasing outdoor experience in a natural rainforest setting for both tourists and locals. It is also interesting to note that the results from the 1988 visitor survey indicated that over 75% of all tourists visited and spent more than 30 minutes at the Grand Etang National Park. The National Park was second only to the Grand Anse beach as the most appreciated and enjoyed attraction visited by tourists (Table 5.9).

Considering the many arguments for and against the proposals, it was finally decided by the cabinet that a compromise position should be adopted (National Science and Technology Council, 1993). This involves a redesign of the original project to ensure that the national park and particularly the Grand Etang lake is protected while only the overflow water from the lake would be extracted in the dry season. This decision, it is hoped, will not destroy the tourist experience nor the resources at the Grand Etang National Park, while at the same time provide some relief to the water problems experienced by visitors at their accommodation.

It has long been recognized that a leak detection program needs to be established however, it was not politically expedient to pursue that course of action vigorously at the time when soft loan and grant funding were easily available (Roberts, 1986). In spite of the present global recession and the reduced allocation of development assistance particularly from USAID, there is an urgent need to begin a leak reduction program as soon as possible. This must be undertaken in addition to the short term solutions discussed above.

Other problems according to De Waal (1987) include the topography over which the water must be distributed; the many steep inclines along the supply routes and lack of controlled pressure zones are major constraints to the efficient distribution of the limited available water. In fact, De Waal (1987) indicated that tourism and wastage are perceived as being the most significant factors determining the demand for water in years ahead. Given the projected increases in tourism demand and the inability of NAWASA to build new and upgrade existing facilities, it is clear that NAWASA will find it very difficult to satisfy the growing demand for fresh water particularly in the short term. Using the most pessimistic estimate of tourist arrivals and waste reduction it will require an increase of approximately 30 percent of current supplies by the year 2000 to satisfy the projected demand (DeWaal, 1987).

It is hoped that the results of this analysis will lead to a better understanding of the water resource allocation problems facing the Government of Grenada. It is also hoped that this report will encourage Grenada's planning authority to take a more holistic approach to tourism development.

### 7.3.4 Estimate of Pollution

The results reported here are for the most critical period when the assimilative capacity of the soils for faecal coliform (FC) is lowest because of soil saturated conditions. Therefore, the resulting buffer zone is likely to include all potential hazards. At this time, loadings are also greatest because of the high hotel occupancy rates due to an influx of visitors for the Carnival season in August. Each catchment has an outfall which drains its run-off directly into the sea. These outfall positions are shown in Figure 7.1. Water samples have been taken about fifteen meters offshore within the vicinity of these outfall since 1988 as a part of the Central Water Commission Beach Monitoring Project. These are collected monthly and are analyzed for total coliform, faecal coliform (FC) and faecal streptococci. Since there appears to be little movement of contaminants and very slow mixing of water along the Grand Anse bay (Hunte, 1989), it is reasonable to assume that these sample points truly represent measurements of pollution contributions originating within the adjacent catchments and coming specifically from the properties within the high risk zone identified (Figure 7.4).

The results of the analysis of the seawater samples from these points indicate that faecal coliform (FC) levels were greater than World Health Organization (WHO) acceptable water standards (<200 CFU/100 ML). During the period January 1991 and December 1992, FC levels were found to be elevated above the acceptable levels at all sample points along the beach front (Figure 7.8a).

The higher pollution levels appear to be directly related to higher monthly rainfall amounts (Figure 7.8b). The faecal coliform counts recorded acceptable levels between the months of January and April 1991 however, at the beginning of the heavy rainfall in May, the levels far exceeded what is considered acceptable. It must be noted that the figures for the mixed catchment were by far the greatest. In August of that same year the residential catchment showed the highest contribution while during November a bloom appeared at the sample site representing the tourist catchment. In 1992 however, the year for which the statistics were collected, there appeared to be serious contamination from the residential catchment during the month of February, while during the month of June when the rains began all catchments contributed equally to the faecal coliform pollution. It is not surprising that given the sloping topography of the land and the soil texture (Figure 7.3) the FC levels were highest in both years at the beginning of the wet season during the month of June. This pattern confirms the results obtained

## FIGURE 7.8A SEASONAL VARIATION IN OBSERVED SEAWATER POLLUTION



### FIGURE 7.8B MONTHLY RAINFALL VARIATION AT THE POINT SALINES INTERNATIONAL AIRPORT 1991-1992



by previous studies undertaken by the Bellairs Research Institute (1989).

Preliminary calculations to estimate water quality at the outfall were performed for each catchment. The calculations were done for a typical tropical storm event of ten hour duration and 1 in/hr intensity. The information in Table 7.7 above was utilized for estimating the pollution loading (see Appendix 13).

For the tourist catchment, faecal coliform concentrations at the outfall were estimated to be 2 x  $10^4$  MPN/100 ML. Similar calculations which were performed for the resident and mixed catchments estimated the pollution at the outfall points to be 5 x  $10^4$  and 3 x  $10^4$ MPN/100 ML. These estimates indicate that pollution counts from the catchments were within not significantly different from each other.

This suggests that, if all conditions were equal, water quality would be within the same range with respect to FC levels at each catchment outfall. Although there was considerable variability in observed pollution levels, generally water quality was the same in the vicinity of the three outfalls at the beginning of the rains.

The calculated pollution levels were larger than observed values. Although several reasons may account for the overestimation, missing information prevents any more meaningful comparisons. For example, information is required about the sample collection schedule in relation to the occurrence of storm events. This time difference is important for assessing bacterial levels which generally decrease with time. Also, information on the factors governing dilution at the sampling points, fifteen meters offshore, must be known in order to compare FC levels there with levels at the drain outfall. Thirdly, the quality of the septic tank effluent reaching the drain was taken as  $5 \times 10^7$  MPN/100 ML. That is, no allowance was made for pollution attenuation in the course of movement from the septic tank to the drain. Thus, unless information becomes available for assessing the above effects, due caution must be exercised in

using these estimates. In spite of these problems there appears to be some relationship between population within the high risk zone and the associated faecal coliform measurements.

From the recommendations of the many consultants' reports, which clearly indicate the nature of the effluent, it was agreed that the most effective mitigatory measure is the installation of a central sewage collection system. This, it is hoped, will collect and discharge the waste water from the hotel/residential areas immediately around the Grand Anse Bay. Thereafter, the system should be extended to connect to the St. George's sewer system.

It was thought that the Grand Anse area should be dealt with as a priority because of its importance to Grenada's tourism industry and its economy, and the urgent need to avoid damaging overseas publicity (Archer, 1989: 75). The elevated concentration of nutrients in the near-shore areas close to healthy coral reefs and the increased rate of beach erosion estimated over the past years at the rate of 0.3 m/annum are further reasons for concern (Cambers, 1984).

Despite the need and urgency to find a solution to the area's pollution problem there is continual debate on the method of treatment and disposal of the sewage generated in the Grand Anse area. The treatment alternatives considered were: an aerated lagoon treatment system; extended aeration treatment system; facultative lagoon treatment system; and sewage disposal by outfall, the latter being at least half the cost of any of the other options. An independent consulting firm (Berger, Barnard and Thomas Eng., 1990) evaluated the cost and effectiveness of the options presented and recommended that the Extended Aeration Treatment System together with an ocean outfall should be constructed in the Grand Anse area. The funding agency nonetheless, decided that it can only afford the cost of disposal by outfall.

The decision to dispose of the sewage without treatment, by an ocean outfall, was therefore based solely on the financial limits imposed by the main funding agency. In light of this financial constraint, a further study was commissioned to evaluate the best location for the





proposed outfall. Emphasis was therefore placed on identifying a location where there is a fast and consistent offshore current. It was recommended that an outfall of 350m in length be constructed offshore from Point Salines, the southwestern-most point of the island.

It is argued that since the effluent will be carried offshore preliminary treatment was necessary. It also was considered a viable and feasible option to be included. The Bellairs Institute (1989) report further stressed that none of the outfall locations looked at will, by themselves, remove nutrients and hence eliminate the coastal eutrophication problem in the Grand Anse bay. In spite of these arguments and recommendations, the sewer system was built without a preliminary treatment facility.

Although the sewer system alignment has already been determined and the construction almost completed, this section serves to evaluate the appropriateness and effectiveness of this alignment. It is possible to consider how the collection system might impact seawater quality by determining whether the chosen alignment passes in close proximity to the buildings within the high risk zone (Figure 7.9). Further analysis can also explore the suitability of the alignment with respect to the environment through which it passes (ph of the soil, salinity etc) so that required protection and maintenance costs can be predicted.

The sewer alignment is in close proximity to the hotels within the "tourist" catchment. Without information other than the topographical maps and aerial photographs, it appears that a more effective alignment would have been the section of the road within the "Tourist" catchment, immediately south (further away from the beach) of the existing alignment (Figure 7.9). This assumes that no other physical factors prevent the implementation of this option. With this alignment, hook-up lines to the trunk line would be shorter, making the cost of connections lower and the likelihood of hooking-up to the system much greater.

It is reasonable to assume from the alignment that improved water quality may ensue at

the two southern-most outfalls once the hotels are hooked-up and sufficient time has elapsed for the contaminated soil to be 'flushed'. With respect to the local resident-occupied catchment, the analysis shows that the sewer system will not effectively serve the purpose since the sewer lines are located far away from the major polluters. It is assumed that the cost of connecting to the system by local residents will be much higher than that of the hotels in light of the greater distances. This is therefore a major disincentive to the locals. It is clear that an extension of the network into the catchment will help reduce the connection cost per household within the "resident" catchment. A buffer at 30 meters (100 feet) from the sewer alignment 'captured' not more than 50% of the buildings within the high risk zone. Only when the sewer network has been expanded to service these buildings is there likely to be any significant improvement in seawater quality around this catchment outlet.

In summary, it is clear from the analysis that water demand from tourists (especially those staying at larger accommodation establishments) far outstrips per capita domestic demand. The water demand by visitors using the large hotel is far higher than that associated with apartment, cottage and guest house accommodation.

The results also provided an assessment of the source of the pollution within the Grand Anse watershed. However, until the assumptions can be verified and the necessary additional information obtained, due caution must be exercised in the interpretation of the FC levels estimated from this study.

The urgent implementation of a leak prevention program in association with a conservation campaign targeting the large and medium size hotels should help to temper the problem in the short term. In the longer term additional water storage capacity will have to be built. The question that remains, however, is whether the National Water and Sewage Authority in association with the Government of Grenada can find the necessary funding at concessional rates to construct the needed facility. This does not seem likely over the short term since the

prospects for economic recovery, on which the credit agencies' funding is based, are questionable.

Also questionable is the ability and willingness of the tourism industry to pay the "true" cost of providing an adequate supply of water year round. The water authority has only recently begun to consider the option of water desalination in light of the growing water supply shortages. Preliminary estimates indicate that the cost to the consumer will be at least twice the present rate per gallon (Smith, 1994). These are some of the policy issues that will have to be considered in the near future in light of the optimistic growth projected in visitor arrivals and associated increase in accommodation facilities to house the growing number of tourists.

# CHAPTER 8 SUMMARY AND CONCLUSIONS

### 8.3 INTRODUCTION

This chapter begins with a synthesis of Grenada's present economic situation and the future growth and development prospects facing the island's tourism industry. A brief summary of the tourism market is presented together with a review of both the economic and environmental impacts associated with the industry's development. Thereafter the appropriateness of the methodology and theoretical framework adopted in the thesis are evaluated, followed by a discussion of the applicability of the research findings to the development of tourism policy in small island states. I conclude with some recommendations on future policy development and provide a tentative research agenda for those studying tourism development in island microstates.

### 8.1 TOURISM AND GRENADA: SYNTHESIS OF KEY FINDINGS

Grenada has for many years depended solely on the production and export of primary agricultural commodities to underwrite economic growth and development. Over the past decade, however, efforts have been made to reduce dependency on primary products with both manufacturing and tourism seen as key means of diversification. In spite of the incentives offered, Grenada has failed to attract significant investment in export oriented manufacturing although there has been some growth in activity geared towards import substitution. Severe balance of payments, trade balance, debt servicing and unemployment problems only compound the need for a growth sector to help restore the islands credit worthiness. It is the opinion of many policy makers that tourism can provide this stimulus. It is also recognized that the growth and development of the island's tourism industry over the past decade has been in large part dependent on the fact that people are still friendly and welcoming and that the natural resource base and environment are still relatively pristine.

Nevertheless it has been established that Grenada is "suffering from serious environmental degradation which will be difficult to reverse and may harm its prospects for economic development" (World Bank, 1992: 31). The island's natural resources are under pressure from both the local population and tourists. There is need for government intervention in natural resource management since the use of natural resources often gives rise to negative externalities and markets do not always adequately reflect the true social and economic costs (World Bank, 1992).

With these themes in mind this research attempted to evaluate the economic and environmental impact of possible tourism development options. This integrated approach permits a detailed look at both the economic and environmental impacts. To better understand the impacts it is necessary to look at the market potential through both segmentation analysis and the discrete choice techniques. The results have shown that for sustainability evaluation the Discrete Choice Experiment (DCE) is an adequate tool.

To establish the demand for the tourism product as presently designed and packaged a market segmentation analysis was conducted. It revealed three separate and distinct market segments: (i) rest and relaxation; (ii) active water-based; and (iii) new-age, soft-adventure types. The research revealed a definite shift in the role that these specific groups play in the overall market mix. The soft-adventurers are the fastest growing segment, while those interested in limited activity and rest and relaxation have become significantly less important. The vast majority of visitors come to Grenada for an active water-oriented vacation. The growth of the soft adventure segment seem to mirror the changes in consumer habits, taste and preferences discussed in chapter 3. The steady growth in Grenada's tourism over the past five years results partly from the island's diversification efforts and the promotion of Grenada as an "undiscovered" destination using the advertising campaign slogan " Grenada the 'original



Caribbean' ". The survey clearly shows the destination as a low density, winter beach destination whose visitors are predominantly non-package users in search of a diversified holiday experience.

The discrete choice experiment is shown to be a useful tool for assessing the destination's market potential, principally because of the scale and flexibility of the analysis. Since the technique allows one to measure the marketability of yet undeveloped tourism products it is critical to the evaluation of a destination's sustainability. Likewise, it allows for the measurement of the utility of distinct destination types since probabilities are estimated at the attribute level. For example, destinations can be evaluated on the basis of whatever combination of attributes one chooses to use to define the tourism product.

The results of the DCE show that despite the technique's rather restricted use in this study, it has considerable potential for projecting consumer choice (and thus future demand) for changing tourism products. Consistent with the results of the market segmentation analysis, the results of the discrete choice experiment further highlight the importance of the following features; being on the beach, getting good value for money, living in an appropriate style and type of accommodation located within an uncrowded or semi-isolated setting.

The results of the economic impact study demonstrate that despite its weaknesses neo-Keynesian multiplier approaches are appropriate for evaluating tourism impacts - especially at the firm level. The use of the multiplier model within this research provides a valuable insight into the ways in which the Grenadian economy was affected by the spending behaviour of stay-over visitors in 1992. The local income generated from tourist expenditure is only a fraction of the total expenditure of tourists. The "average tourist" in 1992 spent his/her money in such a way that 29 cents in every dollar became direct local income. The U.S. \$36m injected into the economy by tourist spending, therefore generated U.S. \$10.4m worth of direct local income. Various tourist types exhibited differing propensities to generate income with their expenditure. Those tourists who stayed in large hotels generally spent their money in establishments that tend to have fewer linkages with the local economy than tourists staying at small sized accommodation. The analysis shows that tourist staying in mid-size and small hotel accommodation consistently generate higher direct levels of income than those staying in other accommodation types. This is particularly so when small and medium-sized hotels are occupied by guests originating from Europe or other Caribbean islands.

Tourist expenditure also generated approximately 1051 direct standardized jobs within the Grenadian economy, 665 of these within the accommodation and restaurant sectors. One of the highlights of the results is tourism's ability to create employment in the informal sector. This stresses the need to enhance and support the many budding entrepreneurs who may be presently 'lying idle' on the island. Although the government receives very little revenue from these self employed individuals within the tourist industry they provide valuable income for the economy.

The multiplier analysis also revealed that for every dollar spent by tourists 23 cents flows directly to the government, producing approximately U.S. \$8.0 million in 1992. Thus tourism is a substantial contributor to government coffers.

The GIS package Arc/Info proved to be an appropriate tool for assessing the environmental impacts of different forms of tourism development. The results of the water impact assessment study suggest that tourists and local residents contribute almost equally to seawater degradation in the Grand Anse bay area. Pollution at the northern-most end of the bay is due primarily to local residents, while it is caused mainly by the tourist sector at the southern end.

The relative contribution to beach pollution by different tourist accommodation types appears to be directly related to the size of the accommodation operation, distance to streams or drains, distance to the beach, and the quantity of water used (assuming that all properties use a septic tank collection system). My findings suggest that large and medium hotels can be expected to contribute most to coastal zone contamination. When one considers the fact that only 247 tourists reside within the high risk zone as compared with 545 local residents and yet the pollution measurements at the two catchments are within the same range it can be deduced that the tourist contribution per capita to beach contamination is somewhat higher than that of the locals. There is clearly more detailed work that must be conducted on the environmental impacts associated with different tourist types.

The buffer width approach is able to identify possible polluters and can also assist in determining where resources should be targeted to eliminate or reduce pollution hazards. In this case, the water authority may be able to design their schedule of buildings for connection to the sewer collection system so that water quality can be improved in the shortest possible time. In addition, the most effective sewer alignment to serve the most likely polluters can be evaluated relatively easily.

In simple terms Arc/Info is an adequate tool for the examination of the differential environmental impacts (water) associated with different tourism accommodation types. The technique is very useful in examining the water demand and supply within unique geographic spaces. For example, it allows one to look at water use from the level of the watershed, the catchment, the street and down to the individual property. Similarly, because it can be used in association with relational data bases, it is possible to measure water demands by accommodation types within specific locations. Within this study it was possible to determine the water demands for five different accommodation types within the watershed. As emphasized throughout this study this type of dissaggregated approach is imperative to the understanding of the issues of tourism destination sustainability.

The application of the buffer width approach to delineating potential polluters has also

been shown to be useful in understanding the percentage contribution of different accommodation types to the beach pollution problem. Arc/Info can be effectively used for many other natural resource assessment applications including: natural resource data storage and presentation purposes; water flow network analysis; cost estimates for construction purposes; assessment of sewer, water lines and road alignments and most importantly tourism destination data base management and tourism marketing and promotion.

It can be concluded that the many analytical tools and research techniques employed within this study are appropriate to achieve the micro-scale evaluation, essential to help us better understand the evolution of microstates' tourism development processes. Grenada, and other destinations at this stage of development, must carefully examine the nature and type of tourism that is being developed, in light of the need for sustainability, not only of demand but also of the fragile resource base. To fully understand the implications of pursuing different development options, it is necessary to examine the process in an integrated fashion with a focus on the micro-level of analysis.

The holistic and integrated methodology employed in this research provides a useful and appropriate framework through which to assess the sustainability of different approaches to, or types of, tourism development. In addition the dissaggregated approach used throughout the study allows for the creation of a more nuanced typology of tourism development. Thus instead of being forced to use poorly defined concepts like "mass/conventional", "alternative" "ecotourism" we are able to examine destination types in terms of the attributes and levels which make up the vacation experience.

This case study evaluated the potential attractiveness of four different destination types along a continuum from "conventional/mass" to "alternative " tourism development styles (see chapter 5). It is instructive to observe that destinations 1 and 3 are in many ways (with few exemptions) comparable to the tourist product offered on the island of Grenada and other Eastern

Caribbean island destinations. Destination 3, a semi-isolated destination with few activities, is the most preferred among those examined, in spite of the marginally higher vacation cost. It is not coincidental that destinations like Grenada, Anguilla and Montserrat have, over the past five years, registered a growth in arrivals while the "high activity" more mature destinations have experienced limited growth and in many cases sharp declines in tourist arrivals. This indicates that there is a growing demand for semi-isolated, exclusive destinations. It has been shown that the relatively crowded, high density accommodation types, although located on the beach and relatively in-expensive, are less preferred than ones in semi-isolated locations.

The major advantage of this integrated approach is that it also allows us the flexibility to evaluate the likely economic impacts of these or similar destinations. This facilitates a better and more thorough understanding of the destinations' potential, not only their marketability but also, the income, employment and government revenues likely to be generated.

The economic impact results reveal that smaller accommodation types contribute significantly more to the Grenadian economy than their larger counterparts. It also reveals that a larger proportion of the dollar spent by Europeans, who tend to prefer the smaller accommodation types, is turned into direct income within the local economy. It is interesting to discover that the most sought after accommodation types (small and medium-sized) tend to be the ones offering the greatest economic benefit in terms of income and government revenue generation. Similarly, the type of visitor using this accommodation is more likely to spend a higher proportion within the rural economy.

In the case of Grenada, however, the most preferred destination type contributes marginally less to employment generation, probably as a result of greater labour productivity and management practices. Again, the visitors who show greater preference for the high density accommodation (associated with package tours) although more active, spend proportionally less on the island. This can be accounted for by the inclusive nature of the packages purchased and the associated discounts obtained.

This integrated approach outlines very clearly the policy options available and the implications of the policy direction taken on the destination's economic sustainability. When a conscious decision is taken to markedly increase visitor numbers, through the provision of incentives for large scale hotel construction within limited land space, the impacts of this action can be fairly accurately predicted. The destination is very likely to become more like destination 4 than 3 (see Table 5.19). This implies that not only will the destination become more difficult to sell at the present rates, but that the local income and government revenue generated from each dollar of expenditure will be reduced. Armed with this information, the policy maker is shown the impacts of moving towards a more "mass/conventional" destination - increasing visitor numbers but a more limited per capita economic contribution.

Policy makers may choose to emphasize a small scale, incremental development path in which the accommodation and activities are locally owned and operated. The results of the study point out that there is, for example, great potential within the yachting area, particularly the servicing sub-sector. If policies are promoted that allow for the organized growth of this sector allowing special concessions on land availability, tax exemptions and technical assistance to local entrepreneurs, the chances of increased income and employment generation will be greater in the long run. The potential of improved shopping for quality spices and crafts is another area with good income generation potential. The provision of these facilities together with a focus on the provision of quality goods and services within them augers well also for improved linkages within the economy.

The integrated, holistic approach taken in this research allows the policy maker to further incorporate an evaluation of the impacts of these development options on water demand and associated beach pollution potential. In the case of Grenada, it is found that the water consumption patterns are influenced by both the size and composition of the accommodation

facilities and the water conservation practices employed. To implement policies and programmes to attract large scale resort development without the enforcement of strict water conservation measures will put undue pressure on the island's water resources in the short term, destroying the image, marketability and eventual profitability of resort operations.

The results of the water pollution analysis further highlight the real problems of trying to achieve economic growth and development through mass tourism while at the same time maintaining the integrity of the resource base. It is revealed by the DCE that the preferred vacation destination is at a beach side location, within a small to medium size villa or cottage style accommodation in a lower density resort area. The environmental impact analysis has, however, indicated that in addition to the type and size of the accommodation developed the most significant factor determining the water pollution potential of a resort is its distance away from the streams and beaches. The attractiveness of a destination is greatly improved when beach front accommodation can be provided, however, this development option also poses the greatest pollution potential. The study points out that the accommodations located on the beach front of the Grand Anse beach are in part contributors to the pollution problems experienced in the area, and thus the reduced attractiveness of this once pristine resource. This is surely a case of the tourism industry being the "engineer of its own destruction".

This situation, as discussed earlier, creates land use conflicts. In Grenada, beach front land for resort development is scarce and expensive and is therefore often affordable only to foreign multinationals and expatriates. On the other hand, the demand for cottage and villa style small boutique hotels, located on the beach front, is very high. It is not always practical to develop certain styles of resorts on the beach front, given the high price of such land on the open market.

These are some of the critical issues that policy makers and planners must address when planning for both economic and environmental sustainability. This author is of the opinion that to adequately address the issues of microstate tourism sustainability this level of integrated analysis is mandatory. Armed with this information, plus additional information on environmental and socio-cultural factors, it is hoped that planners and policy makers will promote programmes, develop guidelines, and produce workable plans to realistically evaluate the long term sustainability of island or resort destinations.

#### 8.2 THEORETICAL IMPLICATIONS

Much of the discussion in this thesis has focused on the evolving nature of tourism, and has raised some important questions about the ability of dependency and diffusionist based approaches to come to terms with the realities of microstate tourism development. Despite the predictions of this type of model, many Caribbean island tourism industries have not yet emerged as traditional 'mass tourism' destinations despite considerable growth during the past decade. Thus, Grenada has maintained a high level of local ownership and control in its tourism industry; only over the past two years have we witnessed the introduction of 'foreign' ownership in the accommodation sector.

Perhaps most importantly the dependency model largely fails to acknowledge the fact that local governments and people can play a significant role in managing and guiding the development of their tourism industries (Milne, 1995; Grekin, 1994). As we have seen, the Grenada government has placed national development objectives at the center of recent tourism development plans - stressing the need to foster small, locally owned tourism businesses while at the same time controlling future development in a sustainable fashion (USAID, 1995).

The "new" political economy approach adopted in this research and initially introduced to Caribbean tourism studies by Poon has been shown to represent a useful theoretical advance. The framework explicitly acknowledges the fact that tourism development is not 'unidirectional' and that local governments and communities can play an important role in defining a course for

tourism development which meets broader economic, societal and environmental objectives. By providing a detailed understanding of processes of change in the tourism industry Poon's model is also able to provide concrete policy prescriptions for microstates that want tourism development but do not wish to be caught up in the inexorable move toward mass tourism.

While small island states, with their unique and relatively unspoiled tourism products, have the ability to attract alternative tourists, they must be able to tap into the marketplace more effectively. Poon (1990b) argues that one solution to the high cost of joining a CRS is to explore the potential of networking small businesses so that they are able to share access. Such an approach also opens up new opportunities for creating 'packages' which include an array of locally owned activities. The focus on small business is important because this is where indigenous ownership is most highly concentrated and where linkages with the local economy are often greatest. In addition the focus on the micro-scale of analysis is equally important because, as seen in this research, it is only at this scale of analysis that a true understanding of the impacts can be gained.

Regional cooperation is also vital (Poon, 1990b: 120). The ability to tap into international tourist flows will be enhanced if islands can link into 'multi-destination' holidays. Cooperation between different islands in the region has always existed to some degree. Perhaps the time is now ripe to build upon these mechanisms in an attempt to develop more multi-island packages that can allow visitors to sample the 'specialized' offerings of a range of different destinations.

Poon also stresses the need for government's to look closely at the development of improved competitive strategies for tourism, especially the creative use of new technologies. One wonders whether some of the international aid that plays such a prominent role in these microstates might be best directed toward the development of local (or regional) destination databases that could then be 'switched' into international CRSs. The Grenada Board of Tourism, with assistance from USAID, has only recently contracted the services of a U.S. firm to develop

a destination database to facilitate the board's marketing efforts (Marryshow, 1995).

Despite the many strengths of Poon's model, it does feature some short-comings as a tool for informing policy development. Its most serious weakness is that by splitting tourism into 'old' and 'new' components, attention tends to be focused on the latter at the expense of the former. This is problematic because mass tourism is clearly not dead (Butler, 1990). It remains a major feature of many Caribbean island tourism industries, often co-existing with alternative, small scale, activities.

Since many islands do not have the option of completely turning their back on mass tourism, a major policy issue is how one can 'add value' to more traditional forms of tourism in order to maximize economic benefits while reducing negative impacts. In this respect the continued encouragement of mixed accommodation types and the development of local activities that can be integrated into mass or mini-mass tourism packages is essential. The eventual answer may lie in the adoption of strategies that allow for the co-existence of different forms of tourism. As Pearce (1992, 30) notes:

"By considering a broader spectrum of possible development paths, by relating more closely demand to supply, impact to process, then it may be possible to avoid some of the excesses which have provoked the explicit alternative tourism policies in the past, to cope with tourist pressures, and, indeed, derive some benefits from tourism"

It flows from this that a clear policy objective must be to achieve a better understanding of the nature and potential impacts of alternative tourism development. While alternatives such as ecotourism appear to offer a potential path toward more sustainable development, we cannot be sure what their long term influence will be. Some argue, for example, that the growing interest in local cultures and increasing emphasis on 'authenticity' may prove to be highly disruptive - bringing about a tendency to 'museumize' ethnic groups so that "deviation from the touristic cultural ideal" is reduced (MacCannell 1992, 179).

A better understanding is also required of the ways in which communities are involved in tourism development strategies. There is still not enough research on the degree to which local people really feel they have some input into and control over the future development of the industry. Such research should define ways in which participation could be maximized - a vital factor in creating an industry that meets the needs and desires of the majority of the local population (Murphy, 1985).

The increasing technological dependence of the industry and processes of industrial concentration are, at least in the short term, likely to lead to the further strengthening of large enterprises, especially multi-national chains, and to make it increasingly difficult for small firms to remain competitive (Milne, 1992). The use of networking and strategic alliances will become increasingly important. For small firms this will provide opportunities to overcome the disadvantages (most notably access to technology) associated with their size. Larger operations will also enter into increasingly broad ranging alliances developed from CRS and 'frequent flyer' programs. This is also likely to work against smaller operators and small island destinations within the industry.

At the same time all estimates show that international travel flows will continue to grow during the next decade. The development of new market niches and the introduction of new technologies and management approaches have the potential to open a range of new opportunities for Caribbean destinations. Clearly the question is now problems of size and potential lack of international competitiveness can be overcome? and how Grenada can improve its level of competitiveness in the future?

Aside from the new market segments that are growing due to demographic change, it is clear that fundamental shifts in consumer demand may have a major impact on the attractiveness

of different types of tourist destination. New forms of demand (exhibited even by so-called 'mass travellers') may well encourage tourist flows toward new destinations and away from those that have successfully catered to 'traditional' forms of activity. Thus at a global scale we may witness some decline in 'sun-lust' locations that cater for mass-package tourism and a growth in areas that are able to provide alternative, higher quality forms of experience. While mass tourism will continue to be a dominant force and will co-exist next to these new 'alternative' forms of travel, it is likely that its own nature will also change as new technologies and organizational strategies make it possible to offer more sophisticated travel at a lower price.

The growth of new, more flexible, forms of travel will not only place pressure on individual enterprises to restructure their operations but will also require destination areas to alter their own organizational structures. There is likely to be an increased need to improve levels of cooperation between different elements of the tourist industry to ensure effective participation in new, more flexible forms of travel. It is likely that key industry suppliers and sub-contractors will also be called upon to improve their performance in order to meet the new demands of the tourism industry. Cooperation at a regional and local level in order to improve overall tourism performance will be a key issue in the 1990s.

If controlled and managed properly, the tourism industry can become a non- or lowconsumptive utilizer of resources and can operate on a sustainable basis. However, if developed beyond the capacity of the environment, the resource base and the local population to sustain it, it ceases to be a renewable resource industry and it instead becomes a boom-bust enterprise. Such comments apply equally to mass tourism and to alternative tourism" (Butler, 1992: 34).

When the sustainability of different forms of tourism is examined, it must be remembered that, at least potentially, alternative forms of tourism penetrate further into the personal space of residents, expose often fragile resources (environmental and cultural) to greater visitation, and may result in greater political change in terms of control over development than traditional or mass tourism (Butler, 1992: 39). The main problems with specifically focusing on "alternative tourism" include: identifying the market, reaching only it, and maintaining it at an acceptable size for a long time (Butler, 1992: 46).

Despite the many criticisms, the difficulty of operationalizing the concept, and the scarcity of examples to indicate the practicality of the idea, this research shows that attempts at achieving sustainable tourism development should not be dismissed out of hand. As Wheeler (1992) admits, the concept needs to be operationalized from the level of the individual project. This study provides an adequate framework for understanding the micro-level impacts associated with the development of different types of tourist destinations. Drawing from the results of this research and a review of the literature one can develop some guidelines for the development of sustainable tourism.

### 8.3 RECOMMENDATIONS AND RESEARCH AGENDA

In summary the tourism industry is being forced to become leaner, more technologically advanced and competitive - to survive in this competitive environment it is essential that small island destinations begin to adopt some of the strategies outlined below.

Grenada should construct marketing information and statistical time series data on the 'types' of holiday being taken by consumers. The emphasis should not just be on where tourists travel to/from and what they do, but should also focus on changing tastes and demands. The cheapest and most efficient way to collect this type of data may be to encourage, through the use of subsidies, the different sectors of the industry to get involved in a wider range of data collection activities. While this may be seen by some as an onerous task it will clearly benefit the industry in the long term.

Grenada and other Caribbean Islands will also have to pay more attention to the changing structure of the industry and in particular the growing concentration of ownership in certain key sectors. Grenada is a small player on the tourism stage and it will have to fight hard to build an international image in the age of mega-CRSs and increased international competition (Milne, 1992a; Vincent et al 1993). The current attempt by CHARMS aimed at improving the Caribbean's profile in CRSs is a step in the right direction but perhaps more effort also needs to be placed in the area of encouraging small business to form effective competitive networks. Evidence of this move is seen in many islands where small hotels are beginning to cooperate through marketing and promotion alliances.

The issue of performance is an important one - it would be useful to develop indices of sectoral performance and to view their progress against certain regional and national benchmarks - for example, how is Grenadian 'tourism productivity' developing in comparison with other Caribbean or other nations? (see Milne, 1992a). It is important to look at indicators such as labour turnover, labour costs/employment levels per hotel bed-night etc. These types of approaches allow early signs of declining competitiveness to be detected and hopefully rectified.

Environmental pressures and the 'greening' of travel are already influencing the industry. Companies are realizing that improved environmental performance can not only win customers but also cut costs. Leading firms in the hotel and airline industry are incorporating recycling programs in their operations and improving energy efficiency, while restaurants are being forced to look carefully at areas such as packaging and waste disposal. A good example of this approach is that of the Siesta hotel operations. In addition to reducing water demand by the use of efficient water saving devices, the firm has reduced its cost of operations and is attracting a growing number of conservation conscious customers. This, in association with other cost saving strategies, allows the hotel to offer more competitive room rates, thus maintaining a better than average occupancy than the competitors. The growth of Grenada's tourism over the past five years might also be directly related to the diversification of the product and the promotion of its conservation and preservation efforts within its advertising campaign.

Increasing numbers of firms actively market the fact that they are responding to environmental concerns. Hotels within the Caribbean region or in Grenada in particular can use their water, electricity and other conservation efforts as a sales and marketing pitch after an effective conservation strategy is developed. The Grenada Hotel Association GHA), in association with the National Water and Sewage Authority (NAWASA) are hoping to launch a water conservation campaign within the coming months.

Tourism is a potent economic activity which brings tangible benefits to the host community as well as to the visitor; however, tourism is not a panacea and must form part of a balanced economy. The physical and cultural environments have intrinsic values which outweigh their values as tourism assets; their enjoyment by future generations and long-term survival should not be prejudiced by short-term considerations. Any tourism development should capitalize on the unique features of the island or country in order to make maximum use of local resources.

The scale and the pace of tourism development should respect the character of the area. In order to reduce the adverse impacts of tourism, careful thought must be given to the mix of tourists to be attracted. For example a mixture of mass and individual types of tourism might allow greater local participation in the ownership of the industry.

The goal of optimum long-term benefit to the community as a whole should be pursued, rather than short-term speculative gain for only a few. Tourism should be planned on an integrated basis with other sectors, taking account of social, economic, and environmental objectives and constraints. Private sector profits and budget surpluses arising from tourism should not necessarily be ploughed straight back into further tourism development. It should be used to secure a sectorally, regionally, and socially balanced pattern of investment and development (Milne, 1990a). Planning of new tourism projects in particular areas should be integrated with the planning of additional local services and facilities, including water supply and sewage treatment infrastructure, housing, health, and educational facilities, for the existing local population and for the additional population attracted by the development.

Where possible, development should occur in areas where land-use conflicts will be minimized. The Discrete Choice Experiment (DCE) has shown that the existing demand is for tourism accommodations and facilities on or close to the beaches. It is well established that other land uses (manufacturing, housing and agriculture) all endeavour to be located on reasonably flat land close to the city and the sea port. Given also, the fact that the only available flat lands are along the beach front, the use of the limited land space has always been an area of contention. In this setting land use conflicts become political battles and prudent planning decisions are frequently overturned. These land use conflicts occur not only in Grenada but in many other Eastern Caribbean islands that focus on resort tourism development. This study serves to emphasize the need for coordination among different agencies to ensure not only the formulation and implementation of sound planning strategies but also that the resulting plan and strategies are efficiently implemented.

Government should ensure that all resources, such as beaches, parks and monuments remain in the public domain and that their use for tourism should not unduly alienate these resources from local residents. Governments should also carry out thorough environmental, socio-cultural, and economic impact studies of tourism projects before approving them. Government or aid agencies should provide assistance (promotional, technical, financial, etc.) for small, locally run tourism enterprises to allow them to compete more effectively.

A tourist threshold should be established and reviewed on a regular basis. In all cases the establishment of goals and targets related to numbers and types of visitors should be clearly defined. In the case of Grenada, projections and targets should be set, not only, on a five year

basis but should be reviewed and adjusted annually. In this way the impacts can be closely monitored and regulations put in place to encourage or discourage the observed patterns. In association with this an efficient and flexible planning regime should be developed that can review incentives, planning procedures and if necessary set new goals and objectives. This should be done not only for the stay-over visitor sector but also for the cruise ship, yachting and returning nationals secgments to ensure coordinated and balanced growth.

Effort should be devoted to building up local competence in planning. Host populations should be actively consulted and involved in tourism plans for their areas and have a voice in determining the extent and nature of developments. Tourism development should be sensitive to the needs and aspirations of the host population. It should provide for local participation in decision making and the employment of local people.

Where possible, industry supplies should be obtained locally. This will help to create greater linkages with the local productive sector and increase the regional income coefficient (RIG). The reasons forwarded for the purchase of foreign goods over that produced locally are, inconsiste \* supply, poor standards of the product and frequent variation in quality. It is recommended that government, through the national standards bureau, work closely with suppliers of raw material and the tourism industry to ensure that each understands the standards and business practices expected of the other. Thereafter the bureau can provide technical assistance to the suppliers to ensure that a consistent quantity and quality of produce is maintained. Tourism projects should include extensive technical assistance, and credit schemes to maximize the ability of local people to link into the industry's demand structure. Whenever use must be made of foreign investors, every effort should be made to ensure that such enterprises make maximum use of local inputs and personnel.

There is a willingness on the part of visitors to explore local cuisine. It is important that restaurants strive to be innovative with their use of local food-stuffs and recipes. A

diversification of local food offerings improves linkages with local agriculture. Another theme that emerges is that tourists would often have liked to spend more money on souvenirs, crafts and other goods but that the range and quality of products available did not tempt them to part with their money. There is a need to look more closely at just what is available for tourists and how their needs can be catered to.

As competition becomes progressively more acute, the need for professionalism in tourism management will increase accordingly. Those destinations that will flourish over the next decade will be those that are able to identify consumer trends in travel correctly, and succeed in marrying them to the national interest in a comprehensive yet flexible plan. Such destinations must also find a way to bring together the multiple public and private sector tourism components to implement the plan effectively. To develop or preserve competitive advantage, it is essential to optimize rather than maximize profits, applying tools such as quality and operating cost controls, and flexible segmentation, across a range of areas, including food supplies, communications system and customer services (Gayle and Goodrich, 1993: 239).

Future development of the accommodation sector in Grenada should emphasize a mixture of a few large resort developments with high quality mid-size and 'boutique' type small scale accommodation (see also Milne 1987c). This will provide the industry with enough rooms to attract more scheduled carriers but at the same time allow Grenada the flexibility to build for and capture new markets that may emerge in the short and medium term. Development approvals should be guided by the analysis of market trends and the associated economic and environmental impact analysis.

The development of all-inclusive holidays in larger hotels must be looked a carefully especially from the viewpoint of tourism's linkages with the rest of the economy and the ability of smaller operators to link into these types of developments. I would argue that a sole focus on large scale 'all-inclusive' resorts would be counterproductive for the industry and would certainly



not differentiate the product from what is already available in the region. The environmental analysis conducted during the research also tends to show that this type of development may be the most harmful in terms of watershed pollution.

The quality of accommodation and associated price value received by visitors using small inns and hotel accommodation was a major source of dissatisfaction for a number of tourists. The poor quality and high price of these hotels and guest houses are a reflection of the financial difficulties faced by this sector. Firstly, all of these smaller accommodation types are located far away from the beach and have no marketing strategy to cater to any specific segment of the market. Another major source of difficulty is the poor management skills of the owners who are normally the managers. In light of their low occupancy rates very few can afford to employ skilled personnel nor afford to train their staff. The Grenada Board of Tourism has arranged some assistance in this regard. It is recommended that more attention be paid to location, management capabilities and accommodation style and type when development in this sector is being considered. The need for training at all levels (worker through manager) cannot be overemphasized.

Tourists expressed considerable dissatisfaction with the 'value for money' provided by restaurants. The quality and  $ty_{k}$  of food being served seems to be less of a problem than the level of service. If service levels are to be boosted training programs will have to be introduced for both staff and management. It is vital that management look closely at their own practices in order to see where improvements might be made.

Another critical recommendation is the development and enforcement of a accommodation classification scheme preferably by a regional and international tourism agency. This has been a major area of discontent within the Grenada Hotel Association (GHA) because many properties are being advertised as hotels, when in fact they are no more than bec and breakfast accommodation. It is important that international standards be set so that rooms can be classified



and sold as what they really are. This will help to prevent 'false advertising' and all of the negative consequences that stem from it. In addition continual efforts must be made to upgrade and maintain the quality of the present accommodation plant.

The results of this study show that the attractiveness of the Grenada product rests on its well maintained (educational) cultural and scenic natural attractions and the island's friendly people. It is recommended that these aspects of the product be maintained, developed and promoted more aggressively both within and outside the country. Given that the majority of visitors are active water oriented individuals the development of marine parks and other underwater attractions and activities must be seriously considered. Diving is a potentially lucrative market to pursue but the issue of quality is important, for example, are people likely to be interested in reefs that are under stress or partially destroyed?

While there was considerable dissatisfaction expressed with the availability of nightlife it does not appear to have adversely affected the overall holiday experience of the majority of vacationers. The majority of visitors do not come to Grenada for discotheques and casinos, however there is definitely potential to improve the availability of cultural and educational attractions. For example, presentations on the island's or region's history could be provided in addition to a broader range of cultural presentations.

The study also revealed that yachting visitors are very high spenders and that they are among the tourists who are most interested in pursuing land-based activities (tours etc). It is important to provide yachts-people with the ability to link into these land tours. The study further revealed that yacht servicing as opposed to charter operations has great potential for income and employment generation. It is recommended that support be provided by the government, through tax and duty concessions, provision of additional land space (particularly in Carriacou), to the yacht services facilities already operating on the island and that the government actively pursue additional investment in this area. However, one worrying theme
that raised its head in the survey was that of security - it appears that yachts are one of the easiest targets for burglars and petty thieves. Attempts must be made to nip this potential problem in the bud.

Although this research was primarily focused on stay-over tourists the results also serve to highlight the existing tension between stay-over and cruise visitors. A number of respondents stated that cruise-ship arrivals will clearly disrupt the 'normal' life of downtown St George's and that they found crowding of certain attractions (mainly beaches) a major problem. The study points to the need to strike a careful balance between the level of cruise ship and stay-over visitor arrivals. It is shown that high density or crowded destinations are less favored by stayover tourists than places with few visitors. Although these are day visitors, when things reach the stage where an average of three cruise ships (with a total of 5000 passengers) visit daily, the effects on the image of a destination are not difficult to imagine.

The industry should not bank too heavily on rapid improvements in the economic situation within its major markets - especially given the continued high levels of unemployment in North American and European. In this respect some of the current industry growth projections may well be over optimistic. A key long term strategy is to emphasize the need to develop a flexible, quality product, that caters to both "active water-focused" and "new age-soft adventure" visitor types. Greater emphasis needs to be placed on 'product development' that will satisfy the needs of the latter visitor segment. I argue that Grenada should focus very hard on how to increase the percentage of high spending (not necessarily high income) clientele and increase the range of possible areas for people to spend money once they arrive in the country. This is, in some ways, a more important objective than simply boosting overall visitor levels.

Aside from the fact that they are high spenders the 'new-age' segment is also (because of its educational and employment profile) the most likely to be resilient to recessionary pressures. Indeed I argue that this segment has largely been responsible for Grenada's continued



growth during the recessionary period. Because of their special interests this group may also be ideal candidates for more targeted marketing campaigns including direct marketing approaches.

Grenada should cooperate with other island nations in the region to produce and offer a more diversified product. The creation of 'flexible' packages - utilizing various components of the product will become increasingly important. Grenada should pursue the idea of developing local 'all-inclusive' packages that network smaller individual businesses (hotels, restaurants, tours etc). This approach requires the establishment of a local 'database' or inventory of activities; it also requires the industry to put aside petty differences in order to work for the 'common good'.

It is clear that increasing international competition raises the need for coordinated marketing strategies. Grenada should continue its efforts at joint marketing with regional and international agencies while at the same time embark on a direct marketing campaign. However, unlike past efforts the impacts of these marketing, advertising and promotional campaigns should be closely monitored.

Government's role should be to aid in the coordination of private sector efforts to mold the tourism product and to assess the effectiveness of current marketing strategies. Competing 'products' are becoming increasingly sophisticated in their product development and marketing approaches and Grenada must monitor these trends carefully.

Grenada should also look closely at the potential implications of continued airline industry deregulation and industry concentration. In the current environment airlines are being forced to become leaner and as a result are cutting many unprofitable routes. The nation should prepare itself for potential changes in this area and consider how best to deal with them.

Future attempts at developing a sustainable tourism product should marry product development more effectively with the changing needs of the market place. Such approaches must be based on a more thorough understanding of both market and product dynamics and visitor impacts. To this end it is essential that a research program be established to give ongoing and comparable information on the changing competitive environment.

There needs to be the development of a 'constant monitoring' program - based on tourists surveys to continually monitor changing visitor characteristics, changing visitor needs and economic and environmental impacts. It is recommended that the following information be collected on a regular basis: tourist satisfaction, activities undertaken, visitor psychographic and demographic information, tourist expenditure studies.

Information on the demands of potential visitors from different markets and what is needed (in terms of product) to attract them from competing destinations can be generated relatively cost effectively through use of the type of 'discrete-choice' experiments used in this research.

The theme of industry performance is also important. Regular attempts should be made to measure the ability of the tourism sector to link into other components of the economy. Economic impact studies similar to that conducted in this research project could be conducted relatively simply if the industry is willing to cooperate in the data collection process.

Thorough environmental and socio-cultural impact studies of tourism projects should always be completed before approval for their development is granted. It is advocated that the physical planning division of the Ministry of Finance urgently develop a land information system, that can be used to scientifically assess development applications using the Geographic Information System package Arc/Info. This research has proven that the package is helpful for measuring the impacts of water use and pollution contribution by different hotel types. It can likewise be programmed to evaluate impacts of proposed tourism development applications.

It is further recommended that additional research be undertaken to examine the use of Arc/Info GIS in association with the SAS statistical package to develop an interactive software model for the assessment of tourism's sustainability using a framework similar to that adopted in this study. Early indications are that with a little programming an interface can be created between the two software packages whereby information can be analyzed and the results shared.

In the future, the legacy of the past will be less significant in ensuring competitiveness and survival in the tourism industry than will control and management of the tourist product and its quality, and realistic and accurate marketing of truly unique features of the destination. Islands which do not succeed in this regard will decline in tourist appeal and will be indistinguishable from each other or, in other words, become 'placeless' (Butler, 1993: 89). It is hoped that this thesis has gone some way toward presenting a mode of analysis that can be adopted by Grenada (and other small island states), in order to improve the long term sustainability of the tourism industry and prevent the vicious cycle of uncontrolled mass tourism development from creating yet another 'placeless' destination.

## REFERENCES

- Aglietta, M. 1979. <u>A Theory of Capitalist Regulation: The U.S Experience</u>. London: New Left Books.
- Ajzen, I. and M. Fishbein, 1980. <u>Understanding Attitudes and Predicting Social</u> <u>Behavior.</u> Englewood Cliffs, NJ: Prentice Hall.
- Amin, A. 1989. Flexible specialisation and small firms in Italy: myths and realities. Antipode 21(1): 13-34.
- Amins, A. and K. Robins, 1990. The re-emergence of Regional Economies? The Mythical Geography of Flexible Accumulation. <u>Environment and Space D:</u> <u>Society and Space</u> 8: 7-34.
- Archer, A. 1984. Regional Sewage Disposal and Coastal Conservation Studies. Volume II. A USAID funded project.
- Archer, B. H. 1977. <u>Tourism Multipliers: The State of the Art</u>. Bangor Occasional Papers in Economics No. 11, Bangor: University of Wales Press, Bangor.
- Archer, B. H. 1982. The Value of Multipliers and their Policy Implications. <u>Tourism</u> <u>Management</u> 3(4): 236-241.
- Archer, B. H. 1987. "Demand Forecasting and Estimation." in <u>Travei, Tourism, and</u> <u>Hospitality Research: A Handbook for managers and Researchers</u>, J.R Brent Ritchie and C.R Goeldner. (eds) New York: John Wiley and Sons.
- Archer, B. H. 1988. Tourism and Island Economic Impact Analysis. In <u>Progress in</u> <u>Tourism, Research and Hospitality Management</u> Vol. 1: 125-134.
- Archer, B. H. 1989. <u>The Bermudian Economy: An Impact Study</u>. Ministry of Finance: Bermuda.
- Archer, B. H. 1993. Tourism multipliers revisited, <u>Teoros International</u> 1(1): 83-88.
- Archer, B. H. and J. Fletcher 1987. Demand Forecasting and Estimation. In <u>Travel</u> <u>Tourism and Hospitality Research: A Handbook For Managers and Researchers.</u>
  J. R. Brent Ritchie and C. D Goeldner (eds.). New York: John Wiley Press.

Archer, B. H. and J. Fletcher. 1988. The tourist multiplier. Teoros 7(3), 6-9.

Archer, B. H. and C. B. Owen 1971. Towards A Tourist Regional Multiplier. Regional

studies 5 (4):289-294.

- Archer, E. 1985. Emerging environmental problems in a tourist zone: the Case of Barbados, <u>Caribbean Geography</u>, 2(1): 45-55.
- Barbier, E. B. 1987. The Concept of Sustainable Economic Development. London: Allen and Unwin.
- Barbier, E., Burgess, J. C. and D. W. Pearce, 1991. The Environment and Sustainable Development. In Girvan, N and S. Simmons (eds), <u>Caribbean Ecology and</u> <u>Economy.</u> Caribbean Conservation Association, Barbados.
- Barnabe, C. 1993. Tourist and Tourism in the Caribbean. Dissertation in partial fulfilment of MBA, Cardiff Business School: University of Whales.
- Bartino, J. 1990. Wanted Co-Pilots for Reservation Systems. <u>Business Week</u>, April, 9:78-9.
- Bastin, R. 1981. <u>Images of Tourism: An Historical Perspective. Jamaica and Barbados</u>. Institute of Social and Economic Research. University of the West Indies.
- Bastin, R. 1984. Small Island Tourism: Development or Dependency? <u>Development</u> <u>Policy Review</u> 2(1): 79-90.
- Bellairs Research Institute, 1989. Sewage treatment and disposal for the Grand Anse area of Grenada. A report prepared for United States Agency for International Development and the Organization of American States.
- Ben Akiva, M and S. R. Lerman, 1985. <u>Discrete Choice Analysis: Theory and</u> <u>Application to Travel Demand.</u> Cambridge, MA: The MIT Press.
- Benko, G. and M. Dunford (eds.) 1991. <u>Industrial Change and Regional Development:</u> <u>the transformation of New Industrial Spaces</u>, London and New York: Belhaven Press.
- Best, P. 1991. Idyll Pleasures: What happens When A Huge Resort Descends on a Small Island. <u>Destination</u>. December, 1991.
- Berger, Barnard and Thomas, 1990. Grand Anse Sewage Collection System.USAID, Washington.

Bjorklund R. A. and B King, 1982. A Consumer Based Approach to Assist in the Design

of Hotels. Journal of Travel Research, 20(2):45-52.

- Bjorklund, R. A. 1977. <u>A New Product Design Model: The Case of A Caribbean Resort</u> <u>Destination</u>, Ph.D. Thesis, Indiana University, Dept of Marketing.
- Blockstein, D. 1991. Population Declines of the Endangered Endemic Birds on Grenada, West Indies. <u>Bird Conservation International.</u>
- Boatswian, A. 1992. Personal Communication. Macro-Planner, Ministry of Finance, St. George's, Grenada.
- Bodlender, J. 1990. Managing the future. In <u>Horwath Book of Tourism</u>, M. Quest (ed.), MacMillan Press Ltd.: London, 247-257.
- Bond, M. E. and J. R. Ladman 1980. International Tourism: an instrument for third world development. In <u>Dialectics of Third World Development</u>, I. Vogeler and A.R. de Souza (eds.). Montclair NJ: Allanheld, Osmun and Co., Inc., 231-240.
- Bowen, G. 1994. Personnal Communications: Manager Grenada Electricity Services Ltd. St. Georges, Grenada.
- Braverman, H. 1974. <u>Labour and Monopoly Capital: The Degradation of Work in The</u> <u>Twentieth Century.</u> New York: Monthly Review Press.
- Briassoulis, H. 1991. Methodological Issues in Tourism Input-Output Analysis. <u>Annals</u> of <u>Tourism Research</u> 18 (3): 485-495.
- Britton, R. A. 1977. Making tourism more supportive of small state development: the case of St. Vincent. <u>Annals of Tourism Research</u> 6(5): 168-78.
- Britton, S. G. 1982. The political economy of tourism in the Third World. <u>Annals of</u> <u>Tourism Research</u> 9 (3): 331-358.
- Britton, S. G. 1983. <u>Tourism and Underdevelopment in Fiji</u>. Canberra: The Australian National University. Development Studies Centre. Monograph no. 31.
- Britton, S. G. 1987 Tourism in Pacific Island States: Constraints and Opportunities. In Britton and Clarke (eds), <u>Ambiguous Alternatives: Tourism in Small Developing</u> <u>Countries</u>. Suva: Institute of Pacific Studies, USP. pp. 113-139.
- Britton, S. G. 1991. Tourism, Capital and Place: Towards a Critical Geography of Tourism, <u>Environment and Planning D: Society and Space</u>, 9: 451-478.



- Britton, S. G and W. C. Clarke, (eds) 1987. <u>Ambiguous Alternative: Tourism in small</u> <u>Developing Countries</u>. Suva: University of the South Pacific.
- Brizan, G. 1986. Grenada Island of Conflict: From Amerindiams to Peoples Revolution, 1948-1979.
- Browett, J. G., 1979. Development, The Diffusionist Paradigm and Geography. <u>Progress</u> in Human Geography 4: 57-79.
- Bryden, J. 1973. <u>Tourism and Development : A Case Study of the Commonwealth</u> <u>Caribbean</u>. Cambridge Uni. Press, London.
- Burr, E. 1988. Architectural Design Guidelines for St. George's, Grenada, W.I. Report prepared for Grenada Government by TVA/USAID with assistance from the Grenada National Trust.
- Butler, James, R., Hvenegaard, G and D.K Krystofiak 1992. Economic Values of Bird Watching At Point Pelee National Park, Parks Canada, Canada.
- Butler, R. W. 1980. The concept of a tourist area cycle of evolution and implications for management. <u>The Canadian Geographer</u> 24:5-12.
- Butler, R. W. 1990. Alternative Tourism: Pious Hope or Trojan Horse. <u>Annals of</u> <u>Tourism Research.</u> 16 (2).
- Butler, R. W. 1992 Alternative Tourism: the thin end of the wedge In V. Smith and W. R. Eadington (eds) <u>Tourism Alternatives</u>, U. of Penn. Press, Philadelphia, 31-46.
- Buttle, F. 1986. <u>Hotel and Food Service Marketing. (A Managerial Approach)</u>. Holt, Rinehart and Winston.
- Cambers, G. 1984. Beach Erosion Study at Grand Anse, Grenada: Beach Dynamics. Report Prepared for OAS and World Bank.
- Cambers, G. 1986. Grenada Coastal Awareness Programme. August 1985 to August 1986. Prepared for OAS, Washington D.C.
- Cambers G. 1988. An Evaluation of the Grenada Coastal Monitoring Programme -January 1987 to June 1988.
- Canadian International Development Agency, 1988. Caribbean Environmental

Programming strategy. Final Report Vol # 3: Solid and Liquid Waste Disposal p2-61.

- Caribbean Conservation Association and Islands Resource Foundation, 1991. Grenada Environmental Profile. Prepared for USAID/RDO/C.
- Caribbean Development Bank, 1992a Grenada: Country Economic Review, CDB, Barbados.
- Caribbean Development Bank, 1992b. Report on Technical Assistance Mission. To Grenada INNS and Beach Club Ltd. CTCS, Barbados.
- Caribbean Tourism Organisation(CTO), 1989. <u>Caribbean Tourism Statistical Report</u> <u>1988</u>, CTO: Christchurch, Barbados.
- Caribbean Tourism Organisation(CTO), 1990. <u>Caribbean Tourism Statistical Report</u> 1989, CTO: Christchurch, Barbados.
- Caribbean Tourism Organisation (CTO), 1992. <u>Caribbean Tourism Statistical Report</u> <u>1991</u>. Christchurch, Barbados: CTO.
- Caribbean Update, 1992. Caribbean Hotel Association and Airlines Together Promote The Region. <u>Caribbean Update.</u> New York: Februrary Pg 2..
- Cater, E. 1993. Ecotourism in the Third World: Problems for Sustainable Tourism Development. <u>Tourism Management</u> 14 (2): 85-90.
- Cattin, P. and D. R. Wittink, 1982. Commercial use of Conjoint Analysis: A Survey. Journal of Marketing Research, 46:44-53.
- Cazes, G. H. 1989. Alternative Tourism: Reflections on an ambiguous concept. In <u>Towards Appropriate Tourism</u>, T. V. Singh, H. L. Thens, and F. M. G0 (eds.). 117-26. Frankfurt am Main: Peter Lang.
- Cherman, R. 1992. Per. Communication. Chairman Grenada Board of Tourism, Grenada.
- Chib, S. N. 1980. Tourism and the Third World. <u>Third World Quarterly</u> 2(2): 283-294.
- Chilcote, R. H. 1974. A critical synthesis of dependency literature. <u>Latin American</u> <u>Perspectives</u> 1(1): 4-29.

- Choy, D. J. L. 1991. Tourism Planning: The Case for "Market Failure", <u>Tourism</u> <u>Management</u> 12 (4) 313- 330
- Choy, D. J. L. 1992. Life Cycle Models for Pacific Island Destinations. Journal of <u>Travel Research</u> 30(3): 26-31.
- Christaller, W. 1964. Some Consideration of Tourism in Europe. The Peripheral Regions-Underdeveloped Countries- Recreation Areas. Regional Science Association Papers 12: 95-103.
- Connell, J. 1988. Soverignity and Survival: Island Microstates in the Third World. Research Monograph No. 3, Departmant of Geography, University of Sydney, Sydney.
- Christopherson, S. 1989. Flexibility in the U.S. Service Economy and the Emerging Spatial Division of Labour. <u>Transactions</u>, Institute of British Geographers, 14: 131-43.
- Clement, H. D. 1961. <u>The Future of Tourism in the Pacific and the Far East</u>. Checchi and Coy, Washington DC.
- Coffey, W. J. 1992. The role of producer services in systems of flexible production. In <u>Regional Development and Contemporary Industrial Response: Extending Flexible</u> <u>Specialisation</u>, H. Ernste & V. Meier (eds.), Belhaven Press:London, UK., 133-146.
- Cogger, C. G., Hajjar, L. M., Moe, C. L., and M. D. Sobsey 1988. Septic system performance on a coastal barrier island, J. Environmental Quality, 17(3):401-408.
- Cohen, E. 1978. Impact of Tourism on the Physical Environment. <u>Annals of Tourism</u> <u>Research</u> 5(2): 215-37.
- Cohen, E. 1972. Towards a Sociology of International Tourism. <u>Social Research</u> 39: 154-182.
- Cohen, E. 1989. Alternative tourism: A critique. In <u>Towards Appropriate Tourism:</u> <u>The Case of developing countries.</u> In T. V. Singh., H. L. Theuns and F.M. Go (eds.). 127-42. Frankfurt. The AM Main: Peter Lang.
- Cohen, S. and J. Zysman 1987. <u>Manufacturing Matters: The Myth of thePost-Industrial</u> <u>Economy</u>. Basic Books Inc.: New York.

- Collier, D. 1989. Expansion and development of CRS. <u>Tourism Management</u> 10(2).86-88.
- Commonwealth Secretariat, 1987. Long Term Prospects and Policies for Caribbean Tourism. Consultancy Report Prepared by Dr. Auliana Poon, June. london: Commonwealth secretariat.
- Conlin, M. V. 1994. Sustainable Tourism Development in Bermuda. A presentation for the International Institute for Peace Through Tourism (IIPTT), Second Global Conference: Building a Sustainable World Through Tourism. September, Montreal, Canada.
- Cooper, C. and S. Jackson 1989. Destination life cycle: the Isle of Man case study. Annals of Tourism Research 16: 377-398.
- Corbridge, S. 1986a. Capitalism, Industrialization and Development. <u>Progress in Human</u> <u>Geography</u>, 10 (1): 48-69.
- Corbridge, S. 1986b. Capitalist World Development: A Critique of Radical Development Geography. London: McMillan.
- Corbridge, S. 1990a. Post-Marxism and Development Studies; Beyond the Impasse. World Development, 18 (5): 55-79.
- Corbridge, S. 1990b. Development Studies: Progress Report. <u>Progress in Human</u> <u>Geography</u>.
- Cu-Uy-Gam, 1991. Big Demand for Small Getaways. Financial Post, Feb. 25: 33.
- Da Breo, S. 1991. Excreta Disposal and Water Distribution in Rural Grenada. Masters Thesis, University of the West Indies, Jamaica.
- Dahl, A. L. 1980. Conservation Planning and Environmental Monitoring for Tourism. In <u>Tourism in The South Pacific</u>, D. Pearce (ed.), University of Canterbury, Christchurch. New Zealand.
- Daly, H. 1986. Thermodynamics and Economic Concepts as related to Resource use policies. Land Economics 62(3): 319-322.
- Daly, H. 1991. Notes towards an Environmental Macroeconomics. In Girvan, N and S. Simmons (eds), <u>Caribbean Ecology and Economy</u>. Caribbean Conservation Association, Barbados.

- Dann, G. S. 1988. Tourism Research on the Caribbean: An Evaluation. <u>Annals of</u> <u>Tourism Research</u>, 16 (1).
- Dann, G. M. S. 1991. Host community involvement in tourism communications. In <u>World Travel and Tourism Review</u> Vol. 1, D.E. Hawkins, J.R.B. Ritchie, F. Go, and D. Frechtling, (eds.), Wallingford: C.A.B. International, 180-182.
- Dann, G., S. Nash and P. Pearce 1988. Methodology in Tourism Research. <u>Annals of</u> <u>Tourism Research</u> #15:1-28.
- Darbeau, J. 1992. Country Environmental Review: A paper produced in preparation for the Rio conference. Ministry of Health, Government of Grenada,
- Darden, W. R. Perreault. W. D and M. T. Troncalli 1975. Psychographic Analysis of Vacation Innovators. Review of Business and Economic Research. Vol.11(2): 1-18.
- Davis, J. C. 1987. Number of hotel operators continues to decline; segmentation, new technology are leading trends, <u>National Real Estate Investor</u>, 29 (13): 69-88.
- De Waal, L. 1987. Grenada Water Supply Sector Plan 1987-1997. U.N Technical Coorperation for Development, Bridgetown, Barbados.
- Debbage, K. D. 1990. Oligopoly and the Resort Cycle in the Bahamas. <u>Annals of</u> <u>Tourism Research</u> Vol. 17(4):513-527.
- Debbage, K. D. 1991. Spatial Behaviour in a Bahamian Resort. Annals of Tourism Research 18(2): 251-268.
- deKadt, E. 1979. The encounter: changing values and attitudes. In <u>Tourism: Passport</u> to <u>Development?</u> E. de kadt (ed.). 50-67. New York: Oxford University Press.
- deKadt, E. 1989. <u>Making the Alternative Sustainable: Lessons from Development of</u> <u>Tourism</u>. Paper presented at the First Meeting of the of the International Academy for the study of tourism, Poland, August 1989.
- Demas, W. 1965. <u>The Economics of Development in Small Countries</u>. Montreal: McGill University.
- Demas, W. 1991. <u>The West Indian Commission: Towards West Indian Survival</u>. Occasional Paper No.1. Barbados: The West Indian Commission Secretariat.



- Dernoi, L. 1981. Alternative Tourism-towards a new style in North-South Relations. Journal of travel Research 2 (4): 253-264.
- Din, K. H. 1990. Bumiputera Entrepreneurship in the Penang-Langkawi Tourism Industry. Ph.D dissertation, University of Hawaii, U.S.A.
- Dixon, J. A and P. B. Sherman 1993. Economics of protected Areas: A new Look at benefits and Costs. Washington D.C: East-West Center.
- Dixon, J.A., L.F. Scura and Tom Van't Hof 1993. <u>Meeting Ecological and Economic Goals: Marine Parks in the Caribbean</u>. Paper prepared for the Second Conference on the Ecology and Economics of Biodiversity Loss of the Beijer Institute, July 29-31: Stockholm.
- Djokic, D., Maidment, D. R. 1993. Application of GIS network routines for water flow and transport. J. Water Resource Planning and Management 119(2):229-245.
- Dos Santos, T. 1970. The Structure of Dependence. <u>American Economic Review</u> 60(2): 231-236.
- Doxey, G. V. 1976. When enough's enough: the natives are restless in Niagara. Heritage Canada, 2(2): 26-7.
- Drake, S. 1991. Local participation in ecotourism projects. In T. Whelan (ed) <u>Nature</u> <u>Tourism</u>, Island Press, Washington D.C. 132-163.
- DuBois, R. 1984. Survey of the Nearshore Benthic Communities of Grand Anse, Grenada., W.I. for OAS.
- Duggal, V. 1990. Planning for Tourism in the 90s, in Grenada, Carriacou and Petit Martinique. Grenada Board of Tourism, St. George's Grenada.
- Eastern Caribbean Natural Area Management Programme, 1982. Survey of Conservation Priorities in the Lesser Antilles - Final Report. ECNAMP. St. Croix, USVI.
- Economist Intelligence Unit, 1990. Hotels/Accommodation, CRS Development and the Hotel Sector, EIU <u>Travel and Tourism Analyst</u> No.s 1&2: London.
- Economist Intelligence Unit. 1993a. Travel and Tourism Analyst Database Canada. <u>Travel and Tourism Analyst</u> 3, 86-90.



Economist Intelligence Unit, 1993b. <u>Travel and Tourism No. 4</u>. International Tourism report: Jamaica. EIU, London.

Economist Intelligence Unit, 1994a. Travel and Tourism Analyst No.4. EIU, London.

- Economist Intelligence Unit, 1994b. Transportation: The Strategic Importance of CRSs in the Airline Industry. <u>Travel and Tourism Analyst</u> No. 4. EIU, London
- Edwards, C. 1992. Personal Communication, Chief Environmental Health Officer, Government of Grenada.
- Erisman, H. M. 1983. Tourism and Cultural Dependency in the West Indies. <u>Annals</u> of <u>Tourism Research</u> 10(3): 337-62.
- Evans, Champy 1992. Personal Communication, Manger Spice Island Mariners. Lance aux Epines.
- Everitt, R. R., von Rabanau, B. Walters, C. and J. Zimmermann, 1991. A Sustainable Ecological Economic Development Model. In Girvan, N and S. Simmons (eds), <u>Caribbean Ecology and Economy</u>, Caribbean Conservation Association, Barbados.
- Farrell, B. H. 1970. Resort Planning and Development. <u>Cornell H. R.A. Quarterly</u>, Feb:34-7.
- Fayos-Sola, E., Marin, A., and C. Meffert, 1994. The strategic role of Tourism Trade Fairs in the New Age of Tourism. <u>Tourism Management</u> 15(1):9-16.
- Ferrance, W. and D. Russel 1990. <u>Nelson's dockyard National Park</u>, <u>Antigua</u>, <u>WI: A</u> <u>Case Study in Economic Diversification</u>. ARA, Consultancy report. St. John's Antigua.
- Finney, B. R. and A. Watson (eds.) <u>A New Kind of Sugar: Tourism in the Pacific</u>. East- West Center, Honolulu.
- Fitzgibbon. J. R. 1987. Marketing Segmentation Research in Tourism and Travel. In <u>Travel, Tourism and Hospitality Research</u>, Ritchie, J.R.B and Goeldner. C.R. eds. pp 179-187. Wiley: New York.
- Fleming, W. and L. Toepper 1990. Economic Impact Studies: Relating the Positive and Negative Impacts To Tourism Development. Journal of Travel Research 29 (1):35-41.





- Fletcher, J. E. 1939. Input-Output Analysis and Tourism Impact Studies. <u>Annals of</u> <u>Tourism Research</u> 16 (4): 514-529..
- Fletcher, J. E. and B. H. Archer. 1991. The Development and Application of Multiplier Analysis. In Progress in Tourism, Recreation and Hospitality Management, Volume Three, C.P. Cooper (ed.), 28-47. London: Belhaven Press.
- Fletcher, Sonja, 1994. Tourism Officer, Grenada Tourism Office, London, England. Personal Communication.
- Food and Agriculture Organization (FAO), 1984. Land Capability Evaluation for Rainfed Agriculture in Grenada. FAO and Government of Grenada.
- Fortune Magazine, 1993. Airline Profitability. <u>The Fortune Magazine</u> December 12, 1993.
- Frank, A. G. 1972. <u>Lumpenbourgeoisie</u>, <u>Lumpendevelopment</u>. London: Monthly Review Press.
- Frechtling, D. C. 1987. Key issues in tourism futures: the US travel industry. <u>Tourism</u> <u>Management</u> 8(2): 106-111.
- Frederick, F. 1987. An Evaluation of Physical/Environmental Planning and Development Control in Grenada,1955 - 1985. M.A. Thesis, University of Nottingham, Inst. of Planning Studies.
- Gayle D. J. and J. N. Goodrich 1993. <u>Tourism Marketing and Management In The</u> <u>Caribbean</u>, London: Oxford University Press.
- Geoghegan, T. 1992. <u>Financing Wildland Systems in the Insular Caribbean</u>. Paper prepared under contract to IUCN as a contribution to the IVth World Congress on National Parks and Protected Areas Caracas, Venezula.
- Geoghegan, T., I. Jackson, A. Putney and Y. Renard 1984. Environmental Guidelines for Development in the Lesser Antilles. <u>Technical Paper #2</u>, <u>ECNAMP</u>: St. Croix
- Gertler, M. S. 1988. The limits to flexibility: comments on the Post-Fordist vision of production and its geography. <u>Transactions of the Institute of British Geographers</u> 13: 419-432.
- Gertler, M.S. 1989. Ressurecting flexibility? A reply to Schoenberger, Transactions,

Institute of British Geographers, 14, 109-112.

- Gertler, M. S. 1992. Flexibility revisited: districts, nation states, and the forces of production. <u>Trans. Inst. British Geographers NS</u> 17, pp. 259-278.
- Girvan, N. 1973. Foreign Capital and Underdevelopment in Jamaica. Institue of Social and Economic Research, University of the West Indies.
- Girvan, N. P. 1991. Economics and the Environment in the Caribbean. In <u>Caribbean</u> <u>Ecology and Economics</u> N. P Girvan and D. A Simmons (eds). Institute of Social and Economic Research, UWI.
- Globe and Mail, 1994. New Investor reported For Air Jamaica,. Monday June 20. Toronto.
- Go, F. 1987. Towards a new century. Canadian Hotel and Restaurant, Aug. 8-18.
- Go, F. 1989a. Meeting employee expectations. Canadian Hotel and Restaurant, July, 56
- Go, F. 1989b. Industry outlook. Canadian Hotel and Restaurant, Sept. 12-21.
- Go, F. 1990. The labor crunch continues. <u>Canadian Hotel and Restaurant</u>. Aug., 14.
- Goodrich, J. N. 1980. Benefit Segmentation of U.S International Travelers: An Empirical Study with American Express. In <u>Tourism Marketing and Management</u> <u>Issues</u>, Hawkins, D. E., Shafer, E. L., and J. M. Rovelstad (eds) pp133-147. Washington D.C.
- Goodwin, G. 1990. Tourism Within the Caribbean Nations-Current and future trends. Paper Prepared for Seminar on Planning for Tourism in the 90's. Grenada August 27-31th.
- Gormsen, E. 1981. The Spatio-Temporal-Development of International Tourism. Centre des Hautes Etudes Touristiques. Aix-en-Provence, France.
- Gouirand, P. 1993. Le tourisme international à l'horizon 2000: quantité ou qualité. Teoros, 12 (2), 22-26.
- Government of Grenada, 1946. The Grenada Handbook and Directory. Advocate Co. Ltd., Barbados.

Government of Grenada, 1989. Annual Statistical Report. Government of Grenada, St.

George's Grenada.

- Government of Grenada, 1990a. Tourism sector Analysis and Plan. 1991-1995. Government of Grenada, St. George's, Grenada.
- Government of Grenada, 1990b. <u>Annual Statistical Report</u>. Government of Grenada, St. George's, Grenada.
- Government of Grenada. 1990c. Feature address delivered by Ms. Joan Purcell, the Minister of Tourism, at the opening of the First Tourism Planning Seminar, August, St. Georges.
- Government of Grenada, 1991a. <u>Annual Statistical Report</u>. Government of Grenada, St. George's, Grenada.
- Government of Grenada, 1991b. <u>National Census Report: Grenada: 1990</u>. Government of Grenada, St. George's Grenada.
- Government of Grenada, 1991c. National Physical Development Plan: Sectoral Issues Papers - Draft. Physical Planning Unit, Ministry of Finance, Planning and Industry. Prepared for UNCHS/UNDP.
- Government of Grenada, 1991d. Grenada Review of the Economy 1991. Statistical Department, Ministry of Finance, St. George's, Grenada.
- Government of Grenada, 1991e. St. George's Development Plan, Physical Planning Unit, Ministry of Finance, Planning and Industry. Prepared for UNCHS/UNDP.
- Government of Grenada, 1992. <u>Annual Statistical Report</u>. Government of Grenada, St. George's, Grenada.
- Government of Grenada, 1993. <u>Annual Statistical Report</u>. Government of Grenada, St. George's, Grenada.
- Government of Grenada, 1994. <u>Annual Statistical Report</u>. Government of Grenada, St. George's, Grenada.
- Government of Grenada, 1995. <u>Annual Statistical Report</u>. Government of Grenada, St. George's, Grenada.
- Greaves, C and J. Prince 1987. <u>Input/Output Analysis: Its Method and Application in</u> <u>Tourism Planning and Policy Making In The Caribbean</u>. Prepared at Symposium



Hosted By The Caribbean Tourism Research and Development Center, Barbados.

- Green, H., C. Hunter and Moore. 1990. Assessing the environmental impact of tourism development: use of the Delphi technique. <u>Tourism Management</u> 11 (2): 111-120.
- Green, P. 1984. Hybrid Models of Conjoint Analysis: An Exploratory Review. Journal of Marketing Research, 21:155-169.
- Green, P. and V. Rao, 1971. Conjoint Measurement for Quantifying Judgement Data. Journal of Marketing Research, 8:355-365.
- Green, P. and V. Srinivasan, 1978. Conjoint Analysis in Consumer Research: issues and outlook. Journal of Consumer Research, 5:103-123.
- Grekin, J. and S. Milne, 1995. Tourism Structure Tourism Development: The Case of Pond Inlet, N.W.T. In Butler, R. and T. Hinch (eds) <u>Indigenous Tourism</u>, Routledge Ltd. London.
- Grekin, J. 1994. Understanding of the Community-level Impacts of Ecotourism: the case of Pond Inlet, NWT. unpub. MA Thesis, Department of Geography, McGill University.

Grenada Board of Tourism, 1990. Annual Statistical Report, St. Georges

Grenada Board of Tourism, 1991. Annual Statistical Report, St. Georges

Grenada Board of Tourism, 1992. Annual Statistical Report, St. Georges

Grenada Board of Tourism, 1993. Annual Statistical Report, St. Georges

Grenada Board of Tourism, 1995. Annual Statistical Report, St. Georges

Grenada Today, 1993. Good Media Coverage for Grenada. St. George's, Friday October 29.

Grenadian Voice Newspaper, 1992. Grenada's Tourism: Doom or Boom. Sept. 12th.

Grenadian Voice, 1993. Water: Who Uses and Who Pays. May 14, 1993.

Gunther, W. D and Mary Fish 1994. Stability of Caribbean Countries: The Case of Tourist-Oriented Economies. <u>Tourism Recreation Research</u> Vol. 19(1): 12-17.

- Hagedorn, C., McCoy, E. L., and T. M. Rahe 1981. The potential for groundwater contamination from septic effluents. J. Environmental Quality 10(1): p1-8.
- Haider, W. 1990. <u>The Discrete Choice Experiment as a Research tool of Sustainable</u> <u>Development</u>. Paper Presented at the AAAG Annual General Meeting, April 19-22,1990. Toronto.
- Haider, W and Ewing, G. 1990. A Model of Tourism Choices of Hypothetical Caribbean Destinations. <u>Leisure Sciences</u>, 12: 33-47.
- Haider, W. 1991. Choice Behavior of Caribbean Winter Beach Tourists. Ph.D Thesis, McGill University, Montreal.
- Haider, W., Anderson, D. and J. J. Louviere, 1993. The Choice Behaviour of Remote Tourists in North Algoma, Ontario: An Experimental Research Approach. Paper Presented at The 7th. Canadian Congress on Leisure Research, Winnipeg, Manitoba, May 13-15, 1993.
- Hair, J. F., Anderson, R. F and R. L Tatham. 1987. <u>Multivariate Data Analysis. 2nd.</u> ed. New York: MacMillan Publishing Company.
- Haley, R. J. 1968. Benefit Segmentation: A Decision-Oriented Research Tool. Journal of Marketing. Vol. 32: 30-35.
- Hall, C. M. 1994a. Is Tourism Still the Plantation Economy of the South Pacific: The Case of Fiji. <u>Tourism Recreational Research</u> 19(1): 1994:41-48.
- Hall, C. M. 1994b. Ecotourism in Australia, New Zealand and the South Pacific: Appropriate Tourism or a New Form of Ecological Imperialism In <u>A Sustainable</u> <u>Option</u> E. Cater and G. Boswman(eds). London: John Wiley & Sons.
- Harker, T. 1990. Sustained Development for the Caribbean. <u>CEPAL Review</u>, No. 41, August, 55-72.

Harvey, D. 1989. The Conditions of Postmodernity. Oxford: Blackwell.

- Hawk, D. 1984. Grenada: A Marketing Plan for North America. CDB:CTCS, Barbados.
- Hawkes, S. and P. Williams, 1993. <u>The Greening of Tourism: From Principles to</u> <u>Practise</u>. Centre for Tourism Policy Research, Simon Frazer University and Tourism Canada, Ottawa.

- Haywood, K. M. 1986. Can the tourist-area life-cycle be made operational? <u>Tourism</u> <u>Management</u> 7(3): 154-167.
- Haywood, K. M. 1988. Responsible and responsive tourism planning in the community. <u>Tourism Management</u> 9(2): 105-118.
- Haywood, K. M. 1991. Revisiting Resort Cycle. <u>Annals of Tourism Research</u> 19(2): 251-354.
- Heidtke, T. M., and M. T. Auer 1993. Application of a GIS-based nonpoint source nutrient loading model for assessment of land development scenarios and water quality in Owasco Lake, New York. <u>Wat. Sci. Tech</u> 28(3-5):595-604.
- Henderson, M. and R. I. Cousins, 1975. The Economic Impact of Tourism. A Case Study in Greater Tayside. Tourism and Recreation Research Unit, Research Paper No. 13. Edingbough: Scottish Tourist Board.
- Hills, T. L. and J. Lundgren 1977. The Impact of Tourism in the Caribbean: a Methodological Study. <u>Annals of Tourism Research</u>, 4 (5): 248-67.
- Hinaman, K. C. 1993. Use of a Geographic Information System to assemble input-data sets for a finite-difference model of groundwater flow. <u>Water Resource Bulletin</u> 29(3): 401-405.
- Hirst, P. and J. Zeitlin. 1991. Flexible Specialisation versus Post-Fordism: theory, evidence and policy implications. <u>Economy and Society</u> 20(1): 1-56.
- Hoivik, T. and T. Heiberg. 1980. Centre-Periphery Tourism and Self-Reliance. International Social Science Journal 32: 69-98.
- Holder, J. 1988. Patterns and Impact of Tourism on the Environment in the Caribbean. <u>Tourism Marketing</u> 9(2):119-127.
- Holder, J. 1992. The need for Public-Private Sector Cooperation in Tourism. <u>Tourism</u> <u>Management.</u> Vol 13 (2).
- Holder, J. 1993. The Caribbean Tourism Organization's Role in Caribbean Tourism Development Towards the Year 2000. In Gayle D. J. and J. N. Goodrich <u>Tourism Marketing and Management In The Caribbean.</u> London: Oxford University Press.
- Hoare, A. G. 1985. Industrial Linkage Studies. In Progress in Industrial Geography, M.

Pacione. ed. pgs 40-81, london: Croom Helm.

- Horwarth & Horwarth Ltd. 1987. The Hotel Industry in The 21st. Century, Background Paper for International Hotel Association, H & H, London.
- Hovinen. G. R. 1981. A tourist cycle in Lancaster County, Pennsylvania. <u>Canadian</u> <u>Geographer</u> 15: 283-286.
- Hudak, P. F., Loaiciga, H. A., and F. A. Schoolmaster 1993. Application of Geographic Information Systems to groundwater monitoring network design. <u>Water Resource Bulletin</u> 29(3):383-390.
- Hudson, R. 1989. Labour Market Changes and New forms of Work in Old Industrial Regions: maybe flexible for Some but not Flexible Accummulation. <u>Environment</u> and Planning D: Society and Space 7: 5-30.
- Hunte, W. 1987. A survey of Coral Reefs near Grand Anse, Grenada. Report prepared for the OAS, Washington.
- Husbands, W. 1981. Centres, Peripheries and Socio-political Development. <u>Ontario</u> <u>Geography</u> 17: 37-59.
- Husbands, W. C. 1984. <u>Pattern. Structure and Formation of Activity Space in Hinterland</u> <u>Resorts</u>, PhD thesis, London: Department of Geography: University of Western Ontario.
- I.M.F. 1990. Staff Report For The 1990 Article IV. Consultation. International Monetary Fund.
- Inskeep, E. 1991. Tourism Planning: an Integrated and Sustainable Development Approach. New York: Van Nostrand Reinhold.
- Ioannides, D. 1992. Tourism Development Agents: The Cypriot Resort Cycle. <u>Annals</u> of Tourism Research 19(4): 711-31.
- Ishmael, L. 1991. <u>Eco-Tourism: The Planning Process</u>. Paper presented at the First Conference on Eco-Tourism. Belize, June 1991. Sponsored by the Caribbean Tourism Organisation and The Government of Belize.
- Jackson, I. 1984. <u>Enhancing the positive impact of tourism on the Built and Natural</u> <u>Environment</u>, Vol. 5, Reference guidelines for enhancing the positive sociocultural and environmental impacts of Tourism. Organization of American States,

Washington.

- Jackson, I. 1986. Carrying Capacity for Tourism in Small Tropical Caribbean Islands. <u>UNEP Industry and Environment</u> 9(1):7-10.
- Jackson, I. 1990. Management of Sectoral Linkages between Tourism, Agriculture and the Environment. Prepared for the OECS Secretariat and European Centre for Development Ploicy Management (ECDPM). St. Lucia.
- Jackson, I. 1990. Tourism and sustainable development in the Caribbean. In <u>Sustainable Development in the Caribbean</u>. J. Cox and C. (Sid) Embree (eds.), 127-38. Nova Scotia: Institute for Research and Public Policy.
- Jackson, I. and Torres, L. 1983. Integrated Development Plan for Tourism, Zone 1. Grenada. OAS, Washington D.C.
- Jafari, J. 1982. Understanding the structure of tourism an *avant propos* to studying its costs and benefits. In <u>Interrelations Between Benefits and Costs of Tourist</u> <u>Resources</u>, 51-67. Berne: Association internationale des experts scientifiques du tourisme.
- Jarviluoma, J. 1992. Alternative Tourism and the Evolution of Tourism Areas. <u>Tourism</u> <u>Management</u> 13(1):118-120.
- Jenkins, C. L. 1982. Thee effects of scale in Tourism Projects in Developing Countries. Annals of Tourism Research, 9 (2): 229-249.
- Jenkins, C. 1990. Tourism: is future demand changing? In <u>Horwath Book of Tourism</u>, (ed.) M. Quest, MacMillan, London, 46-55.
- Jessop, B. 1992. Post-Fordism and flexible specialisation: Incommensurable, contradictory, complementary, or just plain different perspectives? In <u>Regional</u> <u>Development and Contemporary Industrial Response: Extending Flexible</u> <u>Specialisation</u>, H. Ernste & V. Meier (eds.), Belhaven Press: London, UK., 25-43.
- Johnson, P and B. Thomas, 1992 (eds). <u>Perspectives on Tourism Policy</u>, Mansall Pub. Ltd.: London.
- Jones, C. B. 1992. Destination databases as keys to effective marketing. <u>Economics</u> <u>Research Associates Issue Paper Series #11</u>. San Fransisco.



- Juelg, Felix 1993. Tourism Product Life Cycles in the Central Eastern Alps: A Case Study of Heiligenblut on the Grossglockner. <u>Tourism Recreation Research</u> Vol. 18(1):20-26.
- June, L. P. and S. L. J. Smith, 1987. Service Attributes and Situational Effects on Consumer Preferences for Restaurant Dining. <u>Journal of Travel Research</u>, 26:7-20.
- Jurowski, C., Uysal, M. and F. P. Noe, 1993. U.S Virgin Islands National Park: A Factor-Cluster Segmentation Study. <u>Journal of Travel and Tourism</u> <u>Marketing</u>, Vol. 1(4): 3-31.
- Kaynak, E. and Yavas, U. 1981. Segmenting the Tourism Market by Purpose of Trip. <u>Tourism Management</u> Vol. 2(2):105-112.
- Keller, C. P. 1987. Stages of peripheral tourism development Canada's Northwest Territories. <u>Tourism Management</u> 8(1): 20-32.
- Kenney, M. and R. Florida, 1988. Beyond Mass Production: Production and The labour process in Japan. <u>Poitics and Society</u> 16(1): 121-58.
- Keogh, B. 1990. Public participation in community tourism planning. <u>Annals of</u> <u>Tourism Research</u> 17 (3): 449-465.
- Kottle, M. 1988. Estimating Economic Impacts of Tourism. <u>Annals of Tourism Research</u> 15 (1):122-133.
- Krippendorf, J. 1982. Towards new tourism policies The Importance of Environment and Socio-Cultural Factors. <u>Tourism Management</u>, 3(3): 135-148.
- Krippendorf, J. 1987. Ecological Approach to Tourism Marketing. <u>Tourism</u> <u>Management.</u> 8: 174-176.
- Lash, S and J. Urry 1987. The end of organised capitalism. Cambridge: Polity.
- Lashley, D. 1993. Report Submitted for Annual Tourism Planning Meeting. Grenada, Sept. 3rd.
- Laventhol & Howarth Ltd., 1989. Finding the Right Market Niche- Gone are the Days of Multi-purpose Hotel. June, L&H, Toronto.

Lavery, P. 1993. Outbound Markets: U.K. Outbound. EIU: Travel and Tourism Analyst



No.3.

- Lawerence, K. 1992. Sustainable Tourism Development. Paper Presented at the IV th. World Congress on National Parks and Protected Areas. Caracas, Venezula. Feb. 1992.
- Lea, J. 1988. Tourism and Development in the Third World. London: Routledge.
- Leborgne, D. and A. Lipietz A. 1988. New Technologies, New Modes of Regulation, some spatial Implications. <u>Environment and Planning D: Society and Space</u> 6: 263-80.
- Leborgne, D. and A. Lipietz 1991. Two social strategies in the poduction of new industrial spaces. In <u>Industrial Change and Regional Development: The Transformation of New Industrial Spaces</u>. Benko, G. and M. Dunford (eds.), Belhaven Press: London.
- Leisure Consultants, 1990. What's The Attraction- Success in the Market for Places to Visit. Leisure Consultants, Sudbury.
- Levitt, K. and I. Gulati, 1970. Income Effects of Tourism Spending: Mystification Multiplied: A Critical Comment on the Zinder Report. <u>Social and Economic</u> <u>Stuidies</u>, 19(3): 326-343.
- Lickorish, L. 1987. Trends in Industrialized Countries. <u>Tourism Management</u> 8(2): 92-95.
- Lickorish, L. 1990. Tourism facing change. In <u>Horwath Book of Tourism.(ed)</u>. M. Quest, MacMillan, London, 108-23.
- Lieber, S. R. and D. J. Alton, 1983. Modeling Trail Area Evaluations in Metropolitan Chicago. Journal of Leisure Research, 9: 184-203.
- Lindberg, K. 1991. Policies For Maximizing Nature Tourism's Ecological and Economic Benefits. World Resource Institute.
- Lipietz, A. 1986. New tendencies In International Divisions of labour: Regimes of Accummulation and modes of Social Regulation. In A. J Storper and M. Scott (eds) <u>Production. Work. Territory: The geographical Anatomy of Industrial</u> <u>Capitalism.</u> Boston, Allen and Unwin, 16-40.

Lipietz, A. 1987. Mirages and Miracles : The Crisis of Global Fordism. London: Verso.



- Lipietz, A. 1993. The local and the global: regional individuality or interregionalism? <u>Transactions of the Institute of British Geographers</u> 18(1): 8-18.
- Liu, J., and T. Var. 1982a. Differential Multipliers for the Accommodation Sector. International Journal Of Tourism Management 3(3):177-187.
- Liu, J., and T. Var 1982a. Differential Multipliers for the Accommodation Sector. <u>Tourism Management</u> 3 (3):177-187.
- Louviere, J. J. 1988a. <u>Analysing Decision Making- Metric Conjoint Analysis</u>. Newbury Park, CA: Sage Publications Ltd.
- Louviere, J. J. 1988b. An Experimental Design Approach to the Development of Conjoint-Based Choice Simulation Systems With an Application to Forecasting Future Retirement Migration Destination Choices. In Golledge, R. and Timmermans, H. (eds) <u>Behavioural Modelling in Geography and Planning</u>. Beckenman, England: Croom helms Ltd.: 325-355.
- Louviere J. J. and H. Timmermans, 1990a. Stated Preference and Choice Models applied to recreation research: a review. <u>Leisure Sciences</u>, 12:9-32.
- Louviere J. J. and H. Timmermans, 1990b. Preference Analysis Choice Modelling and demand forcasting. O'Leary, J. T., D. R. Fesenmaier, T. Brown, D. Stynes, and B. Driver (eds) In <u>Proceedings of the National Outdoor Recreation Trends</u> <u>Symposium 111</u>. Indianapolis, Indiana. March 29-31, 1990. pp 52-64.
- Louviere, J. J. and G. Wocdworth, 1983. Design and Analysis of simulated consumer choice or allocation experiments: an approach based on aggregate data. Journal of Marketing Research, 20:350-367.
- Lovering, J. 1990. Fordism's Unknown Successor: A comment on Scott's Theory of Flexible accummulation and the reemergence of regional economies. <u>International</u> <u>Journal of Urban and Regional Research</u> 14(1): 159-174.
- Luce, R. D. 1959. Individual Choice Behaviour. New York: John Wiley.
- Lundberg, D. E. 1974. Caribbean Tourism: Social and Racial Tensions. <u>Cornell H. R.A.</u> <u>Ouarterly</u> 15(1): 82-7.
- MacCannell, D. 1976. <u>The Tourist: A New Theory of Leisure Class</u>. New York: Schoken Books.

- MacCannell, D. 1992. <u>Empty Meeting Grounds. The Tourist Papers</u>. London: Routledge.
- MacGregor, C., 1987. Grenada Ocean Outfall Sewer Project, Investigations of Ocean Conditions -Summary Report. Prepared for CIDA and Grenada Government by Seatech Investigation Services Ltd., Nova Scotia, Canada.
- MacNaught, T. J. 1982. Mass Tourism and the Dilemmas of Modernization in Pacific Islands communities, <u>Annals of Tourism Research</u>, 9: 358-381.
- Manning, E. W and T. D Dougherty 1994. Carrying Capacity for Tourism in Sensitive Ecosystems. Paper presented at Second Global Conference: Building a Sustainable World Through Tourism. Montreal, Quebec Sept. 12-15.
- Mansfeld, Y. 1987. Destination-Choice and Spatial Behaviour: Evaluating the Potential of Psychological-Geographical Collaboration in Geography of Tourism Research. L.S.E Geography Discussion Papers, New Series No. 21.
- Mansfeld, Y. 1992. From Motivation to Actual Travel. <u>Annals of Tourism Research</u> Vol. 19:399-419.
- Markussen, C. P. 1985. <u>Profit Cycles, Oligopoly and regional development.</u> Cambridge: MIT Press.
- Marryshow, A. 1995. Personal Communication, Senior Marketing Officer at the Grenada Board of Tourism, St. George's.
- Marshall, J. N. and P.A. Wood. 1992. The role of services in urban and regional development: recent debates and new directions. <u>Environment and Planning A</u> 24(9): 1255-1270.
- Martinelli, F. and E. Schoenberger. 1991. Oligopoly is alive and well: notes for a broader discussion of flexible accumulation. In <u>Industrial Change and Regional</u> <u>Development: the transformation of New Industrial Spaces</u>, G. Benko and M. Dunford (eds.), 117-133. London and New York: Belhaven Press.
- Maslow, A. H. 1987. Motivation and Personality. Macmillan: London.
- Massey, D. 1978. Regionalism: some current issues. <u>Capital and Class</u> 6: 106-25.
- Massey, D. 1983. Industrial Location and The Economy: Considerations on Space and Class. London: MaMillan Press.



Massey, D. 1984. Spatial Divisions of Labour. MacMillan: London.

- Massey, D. 1991. The political place of locality studies. <u>Environment and Planning</u> <u>A</u> 23(2): 267-281
- Mathieson, A. and G. Wall 1982. <u>Tourism: Economic, Physical and Social Impacts</u>. London: Longman.
- Mather, S. and G. Todd. 1993. tourism in the Caribbean: Special Report No. 455. London:EIU
- McDougall, L. 1990. Canadians off the beaten track. Travel-log 9(1): 5-6.
- McDougall, L. and Davis, C. 1991. Older Canadians: a market of opportunity. <u>Travel-log</u> 10(4) Ottawa, Statistics Canada.
- McEachern. J. and E. L. Towle 1974. <u>Ecological Guidelines for Island Development</u>. International Union for the Conservation of Nature. Morges.
- McElroy, J. and K. de Albuquerque 1986. The Tourism demonstration effects in the Caribbean. Journal of Travel Research, 25(2): 31-4.
- McElroy, J. and K. de Albuquerque 1989a. <u>The Impact of Retirement Tourism in</u> <u>Montserrat: Provisional Evidence</u>. A Paper presented to the Caribbean Studies Association Meetings in Barbados. May.
- McElroy, J. and K. de Albuquerque 1989b. <u>Tourism styles and policy response in the</u> <u>Open Economy - Closed Environment Context</u>. A Paper presented at Conference on Economics and the Environment Nov. 6-8, 1989. Barbados.
- Medlik, S. and V. T. C. Middleton, 1974. The Tourism Product and its Marketing Implications. International Tourism Quarterly. pp 28-35.
- Middleton, V. T. C. 1989. Marketing Implications for Attractions. <u>Tourism Management</u> 10 (3): 229-232.
- Middleton, V. T. C. 1991. Whither the package Tours.. <u>Tourism Management</u> 12 (3): 185-192.
- Millman, R. 1989. Pleasure seeking vs the "greening of the world. <u>Tourism</u> <u>Management</u>, 10(4): 275-8.



Milne, S. 1987a. Differential Multipliers. <u>Annals of Tourism Research</u> 14 (4),499-515.

- Milne, S. 1987b. The Cook Islands Tourist Industry: Ownership and Planning. <u>Pacific</u> <u>Viewpoint</u> 28 (2): 119-138,
- Milne, S. 1987c. The Economic Impact of Tourism in the Cook Islands, Department of Geography, Occassional Publication No. 21, University of Auckland.
- Milne, S. 1988. <u>The Economic Impact of International Tourism on the National</u> <u>Economy of Tonga.</u> United Nations Development Programme (U.N.D.P) and World Tourism Organisation Publication, W.T..O, Madrid.
- Milne, S. 1990a. The Impact of Tourism Development in Small Pacific Island States. <u>New Zealand Journal of Geography</u>, 89, April:16-21.
- Milne, S. 1990b. Tourism and Economic Development in Vanuatu. <u>Singapore Journal</u> of Tropical Geography, 11(1): 13-26.
- Milne, S. 1990c. The Economic Impact of tourism in Tonga. <u>Pacific Viewpoint</u>, 31(1), 24-43.
- Milne, S 1992a The State of Tourism, McGill Tourism Research Group Occassional Working Paper No. 1, MTRG McGill University
- Milne, S. 1992b. Tourism and Development in South Pacific Island Microstates. <u>Annals</u> of Tourism Research, 19 (2) 191-212.
- Milne, S. 1995. Beyond the Vicious Cycle? Tourism, dependency and South Pacific Microstates., In D. G. Lockhart and D. Drakakis-Smith (eds) <u>Island Tourism</u> Mansell Ltd. London. (Forthcoming)
- Milne, S. and S. Tufts 1993. "Industrial Restructuring and the future of the small firm: the case of Canadian microbreweries", <u>Environment and Planning A</u> 25: 847-861.
- Mings, R. C. 1985. International Tourism in Barbados, Caribbean Geography 2(1):2-5.
- Mings, R. C. 1988. Assessing the Contribution of Tourism to International Understanding. Journal of Travel Research No. 15.
- Miosecc, J. M. 1976. Elements pour une theorie de l'espace touristique. Centre des

Hautes Etudes Touristiques. Aix-en-Provence, France.

- Morsey, N, and S. McCool, 1990. The Benifit Segmentation: Expenditure Connection. <u>TTRA: Proceedings</u>. pps 375-381.
- Mullins, P. 1991. Tourism urbanisation International Journal of Urban and Regional Research, 15 (3): 326-342.
- Murphy, P. E. 1985. Tourism and Environmental Research: A Review. International Journal of Environmental Studies 25(4): 247-55.
- Murray, J. H., Partner, The Randolph Group 1991. <u>Applied Tourism Economic Impact</u> <u>Analysis: Pitfalls and Practicalities</u>. Paper Prepared for the 22nd Annual Conference of the Travel and Tourism Research Association.
- Nash, D. 1989. Tourism as a Form of Imperialism. In <u>Hosts and Guests</u>, V. L. Smith (ed.), 37-52. Philadelphia: University of Pennsylvania Press.
- National Science and Technology Council, 1991. An Assessment of the Potential of Beaches Surveyed for the Removal of Sand Deposits. National Science and technology Council, St. George's, Grenada.
- National Science and Technology Council, 1993. A Assessment of the impacts on Grand Etang Lake from the Proposed Dam Construction. A Paper Presented by National Advisory Council to the Cabinet. National Science and technology Council, St. George's, Grenada.
- NAWASA, 1990. A Summary of Existing Water Storage and Treatment Facilities on Grenada. NAWASA, St. George's, Grenada.
- NAWASA, 1993. National Water and Sewage Authority Annual Report 1992. St. George's, Grenada.
- Nettleford, R. 1990. Heritage Tourism and the Myth of Paradise. <u>Caribbean Review</u>, Vol 2:6-7.
- Noel, R. 1992. General Manager, National Water and Sewage Authority (NAWASA). Personal Communication
- Norcliffe, G. 1993. The regulation of Gerland: from mass production to flexible production in Tony Garnier's 'Cité Indutrielle'. <u>International Journal of Urban</u> and Regional Research, 17 (2), 195-212.

- OECS-NRMU, 1991. Report of Workshop on the Harmonization of Environmental Legislation in Coastal Zone Management and Environmental Impact Assessment. Working Paper 13.
- Olladottir, L. 1992. The Economic Impact of International Tourism on Iceland. M.A Thesis, Dept of Geography, McGill University, Montreal.
- Olsen, M. D. 1993. International Growth Strategies of Major Hotel Companies. <u>EIU:</u> <u>Travel and Tourism Analyst</u> No.3.pg 62-64.
- Oppermann, M. 1992. Another View on "Alternative Tourism in Dominica" <u>Annals of</u> <u>Tourism Research</u> 19(4):784-791.
- Oppermann, M. 1993. Tourism Space in Developing Countries. <u>Annals of Tourism</u> <u>Research</u> 20(3): 535-556.
- Organization of American States 1977. <u>Grenada Tourism Development Plan</u>. Reports and Studies Series #26. OAS, General Secretariat:Washington D.C.
- Organization of American States (OAS), 1986. Task force Report on: A short term Action Programme for the Development of Tourism in Grenada-1986-89. OAS, Washington D.C.
- Organization of American States(OAS), 1988. Plan and Policy for a System of National Parks and Protected Areas. <u>Department of Regional Development</u>OAS, Washington, D.C.
- Orly, C. 1988. Quality circles in France. <u>Cornell H.R.A. Otly</u> Nov., 50-57
- Pantin, D. A. 1991. The Role of Economic Analysis/ Policy in Sustainable Development: A Market Incentive Approach. In <u>Caribbean Ecology and</u> <u>Economics</u> Girvan, N. P. and D. A Simmons (eds). Institute of Social and Economic Research, UWI.
- Pavaskar, M. 1982. Employment Effects and The Indian Experience. Journal of Travel Research 21: 32-38.

Pearce, D. G. 1980. Tourism in the South Pacific. Canterbury Press, New Zealand.

Pearce, D. G. 1981. Tourist Development. London: Longman.

- Pearce, D. G. 1986. Tourism and Environmental Research. International Journal of Environmental Research, 25: 247-55.
- Pearce, D. G. 1987. Tourism Today: A Geographical Analysis. Longman, New York: Harlow and John Wiley.
- Pearce, D. G. 1989. <u>Tourism Development</u> 2nd (ed). New York: John Wiley & Sons Inc.
- Pearce, D. G. 1992. Alternative tourism: concepts, classifications, and questions. In <u>Tourism Alternatives</u> V.L. Smith and W.R. Eadington (eds.) Philadelphia: University of Pennsylvannia Press, 15-30.
- Perez, L. A. 1975. Tourism in the West Indies. <u>Journal of Communications</u>, # 25:,136-43.
- Phillips, J. D. 1989. An evaluation of the factors determining the effectiveness of water quality buffer zones. Journal of Hydrology 107:133-145.
- Piore, M. J. and Sabel, C. F. (1984), <u>The Second Industrial Divide: Possibilities for</u> <u>Prosperity.</u> New York: Basic Books.
- Pitt, J. DeVere, 1994. Principal, Grenada National Community College, St. Georges, Personal communication.
- Pizzey. J. 1989. <u>Economic Analysis of Sustainable Growth and Sustainable</u> <u>Development</u>. World Bank, Working Paper No.15.
- Planisck, S.L. 1989. Caribbean Basin Initiative's Impact on Tourism. <u>Annals of Tourism</u> <u>Research</u>, 15.pp 466-69.
- Plog, S. C. 1973. Why Destination Areas Rise and Fall in Popularity. <u>Cornell Hotel</u>, <u>Restaurant and Administration Quarterly</u> 14: 13-16.
- Pohlmann, C. 1994. The Restructuring of Montreal's Tourism Industry: A sector Analysis. M.A Thesis, McGill University, Montreal.
- Pohlmann, C. and S. Milne. 1993. Montreal Travel Agents: Challenges and Opportunities Industry Report. <u>McGill Tourism Research Group. Department of</u> <u>Geography:</u> McGill University.
- Poon, A. 1988. Tourism and information technologies- Ideal Bedfellows?. Annals of



Tourism Research 15(4): 531-549.

- Poon, A .1989a. "Strategies for Tourism". In <u>Caribbean Affairs</u> 11(2):73 Trinidad Express Newspaper Ltd. Trinidad.
- Poon, A. 1989b. Competitive strategies for a 'new tourism'. In <u>Progress in Tourism</u>. <u>Recreation and Hospitality Management</u>, ed. C.P. Cooper, London, Belhaven press, 91-102.
- Poon, A. 1990a. Prospects and policies for Caribbean tourism to the year 2000. Commonwealth Secretariat, London.
- Poon, A. 1990b. Flexible specialization and small size: the case of Carribean tourism. World Development 18(1): 109-123.
- Poon, A. 1993. <u>Tourism technology and Competitive Strategy</u>. CAB International: London.
- Poon, A. 1994. The "New Tourism" Revolution. Tourism Management, 15 (2): 91-2.
- Potter, B. 1988. Management of Natural Resource Information For the Virgin Islands National Park and Biosphere Reserve. Special Biosphere Reserve Report. Island Resource Foundation, St. Thomas, USVI.
- Preister, K. 1989. The theory and management of tourism impacts. <u>Tourism Recreation</u> <u>Research</u> 14(1): 15-22.
- Price, D.G. and A.M. Blair 1989. <u>The Changing Geography of the Service Sector</u>. Belhaven Press: London.
- Renard, Y. 1991. <u>Strategies for increasing community involvement in Ecotourism</u>. Paper Presented at the first Caribbean Eco-tourism conference, Belize, July. 1991.
- Reneau, R. B (Jr). 1978. Influence of artificial drainage on penetration of coliform bacterial from septic tank effluents in to wet tile drained soils. <u>J. Environmental</u> <u>Ouality</u> 7(1):29.
- Reneau, R. B., Elder, J. H., Pettry, D. E., and C. W. Weston 1975. Influence of soils on bacterial contamination of a watershed from septic sources. <u>J. Environmental</u> <u>Ouality</u> 4(2):249-252.

- Reneau, R. B., Hagedorn, C., and M. J. Degen 1989. Fate and transport of biological and inorganic contaminants from on-site disposal of domestic wastewater. <u>J.</u> <u>Environtal Quality</u> 18(2):135-144.
- Repetto, R. and W. B. Magrath. 1988. Natural Resources Accounting. <u>World Resource</u> <u>Institute</u>, Washington D.C.
- Rice, F. 1993. U.S Hotels Beginning to prosper. <u>The Fortune magazine</u> October 4, 1993.
- Riley, C. 1983. The contribution of Research to New product Development in Package Tour Operating. <u>E.S.O.M.A.R. Seminar on the Importance of Research in the</u> <u>Tourism Industry, Helsinki 1983</u>, Amsterdam netherlands: European Society for Opinion and marketing Research.
- Roberts, A. and Taylor, L. 1988. The Grenada Dove. Expedition Report. University of Reading.
- Roberts, H. 1986. A model for leak detection within the St. George's water distribution network. M.Sc thesis, University of South Hampton.
- Romeril, M. 1989. Tourism and Environment Accord and Discord? <u>Tourism</u> <u>Management</u> 10 (3) : 204-208.
- Rostow, W. 1960. <u>The stages of economic growth: a non-communist manifesto</u>. Cambridge: Cambridge University Press.
- Ryan, C. 1991a. U.K. package holiday industry. <u>Tourism Management</u> 12(1): 76-77.
- Ryan, C. 1991b. <u>Recreational Tourism</u>. London: Routledge.
- Ryel, R. and T. Grasse. 1991. Marketing Ecotourism: Attracting the elusive ecotourist. In <u>Nature Tourism</u>, T. Whelan (ed.), 164-186. Washington: Island Press.
- Sadler, B. 1987. Sustaining tomorrow and endless summer; on linking tourism and Environment in the Caribbean. In <u>Environmentally Sound Tourism Development</u> in the Caribbean, F. Edwards (ed.). Calgary: University of Calgary Press.
- Sayer, A. 1989. Postfordism in question. <u>International Journal of Urban and Regional</u> <u>Research</u> 13(3): 666-693.
- Sayer, A. and R. Walker 1992. The New Social Economy: Reworking the Division of

Labor. Blackwell: Cambridge, Mass.

- Scheslinger, L. and Heskett, J. 1991. The service-driven service company. <u>Harvard</u> <u>Business Review</u> 69(5): 71-82.
- Schlüter, R.G. 1993. Tourism and development in Latin America. <u>Annals of Tourism</u> <u>Research</u> 20(2): 364-367.
- Schoenberger, E. 1988. From Fordism to flexible accumulation: technology, competetive strategies, and international location. <u>Environment and Planning D:</u> <u>Society and Space</u> 6: 245-262.
- Schoenberger, E. 1989. Thinking about flexibility: a reply to Gertler. <u>Transactions</u> of the Institute for British Geographers. 14: 98-108.
- Scocozza, M. 1989. Deregulation- A recipe For Prosperity. IATA Review, No.1, 8-11.
- Scott, A. J. 1988. Flexible production systems and regional development: the rise of new industrial spaces in North America and western Europe. <u>International Journal of Urban and Regional Research</u> 12(2): 171-186.
- Scott, A. J. 1989. <u>New Industrial Spaces: Flexible Production Organisation and Regional</u> <u>Development in North America and Western Europe</u>. Pion, London.
- Scott, A. J. and M. Storper 1992. Regional development reconsidered. <u>Regional</u> <u>Development and Contemporary Industrial Response: Extending Flexible</u> <u>Specialisation</u>, H. Ernste and V. Meier (eds.), 3-24. London: Belhaven Press.
- Scudamore, P. 1991. Selling holidays in an inflationary climate. Accountancy (U.K.), 107(169): 56-57.
- Seatech, 1987. Grenada ocean outfall sewer project: Investigation of ocean conditions. A report to the Canadian International Development Agency.
- Seward, A.B. and B.K. Spinard (eds.) 1982. <u>Tourism in the Caribbean: The Economic</u> <u>Impact</u>. International Development research Centre, Ottawa.
- Shoemaker, S. 1989. Segmentation of the Senior Pleasure Travel Market. Journal of <u>Travel Research</u>. 18(1):455-472.
- Sinclair, M. T. 1991a. Economics of Tourism In progress in Tourism recreation and Hospitality Management, C.P. Cooper (ed.) Vol.3 New York: Belhaven Press.

- Sinclair, M.T. 1991b. The tourism industry and foreign exchange leakages in a developing country: the distribution of earnings from safari and beach tourism in Kenya. In <u>The Tourism Industry: an International Analysis</u>, M.T. Sinclair and M.J. Stabler (eds.). Wallingford: CAB International.
- Sinclair, M. T., P. Alizadeh and E. A. A. Onunga 1992. The structure of international tourism and tourism development in Kenya. In <u>Tourism and the Less Developed</u> <u>Countries</u>, D. Harrison (ed.). London: Belhaven Press, 47-63.
- Singh, N. 1991. Balancing the Budget Between Nature and Society: Environmental Consideration in Economic Activity and waste Management. In Girvan, N and S. Simmons (eds), <u>Caribbean Ecology and Economy</u>. Caribbean Conservation Association, Barbados.
- Smith, R. A. 1992. Beach Resort Evolution: Implication for Planning. Annals of Tourism Research 19(2):304-322.
- Smith, S. L. J. 1989. Tourism Analysis: A Handbook. Longman. England.
- Smith, S. L. J. 1994. The Tourism Product. <u>Annals of Tourism Reserach</u> Vol. 21(3): 582-595.
- Smith, V. 1977. <u>Host and Guests: The Anthropology of Tourism</u>. Philadelphia: Pennsylvania Press.
- Smith, V. 1989. <u>Host and Guests: The Anthropology of Tourism.</u> 2nd. ed. Philadelphia: Pennsylvania Press.
- Smith, V and W. R. Eadington 1992 (eds). <u>Tourism Alternatives.</u> U of Penn. Press, Philadelphia.
- Smith, T. 1994. Personal Communication, General Manager, National Water and Sewage Authority (NAWASA), St. George's.
- Storper, M. 1985. Oligopoly and the Product Cycle, Essentialism in Economic Geography. <u>Economic Geography</u> 61(3): 260-282.
- Storper, M. 1990. Industrialization and the regional question in the third world: lessons of postimperialism; prospects of post-Fordism. <u>International Journal of Urban and Regional Research</u> 14(3): 423-444.

- Taylor I. 1987. Grand Anse Beach East Drainage Study. Department of Regional Development, OAS, Washington.
- Taylor, M. 1986. The product-cycle model: a critique. <u>Environment and Planning A</u> 18: 751-761.
- Teague, P. 1990. The political economy of the regulation school and the flexible specialization scenario. Journal of Economic Studies 17(5): 32-54.
- Ternan, J., Williams, A., and C. Francis, 1986. Land Capability Calassification in Grenada, West Indies. Mountain Research and Development 9(1):71-82.
- Teye, V. B. 1994. Environmental Considerations in Tourism Development on Island Microstates: The Case of Bermuda. <u>Tourism Recreational Research</u> Vol. 19(1):18-24.
- The Economist, 1989a. The business of going away. April 15: 73.
- The Economist, 1989b. Package-tour operators: spoiling their holidays Oct. 28, 63-64.
- The Gazette, 1993. Travel Report: Multiple Destinations Holidays on The Rise. Montreal Gazette, Feb.27. Montreal.
- Thomas, A. 1986. Report on The Regional Sector Study Workshop, St. George's, Grenada.
- Thomas, A. 1991. Report on Findings from TFAP Agricultural Districts Workshops held in Grenada, Carriacou and Petit Martinique. Ministry of Agriculture, Forestry and Fisheries, Grenada.
- Thomas, A. 1994. Forestry Officer, Forestry Department, Government of Grenada. Personal Communication.
- Thomas, T. 1994. Personal Interview with "Minister of Tourism, Grenada" St. George's.
- Thurot J. M., 1973. Le Tourisme Tropical Balneaire: Le Model caribe et ses extensions. Thesis, Aix-en-Provence. Centre des Hautes Etudes Touristiques, France.
- Tickell, A. and J. A. Peck 1992. Accumulation, regulation and the geographies of post-Fordism: missing links in regulationist research. <u>Progress in Human</u> <u>Geography</u> 16(2): 190-218.
- Timmermans, H. 1984. Decompositional Multiattribute Preference Models in Spatial Choice Analysis: A review of some Developments. <u>Progress in Human</u> <u>Geography</u>, 8 (2):189-221.
- Timmermans, H. and R. Golledge, 1990. Applications of Behavioural Research on Spatial Problems 11: Preference and Choice. <u>Progress in Human Geography</u>. 14(3):311-354.
- Todd, D. K. 1980. <u>Groundwater Hydrology. 2nd Edition</u>. John Wiley and Sons, New York.
- Tourism Canada, 1990. Tourism on the Threshold. ISTC, Ottawa.
- Travis A. S. 1982a. Managing the Environment and Cultural impacts of Tourism and Leisure Development. <u>Tourism Management</u>, 3 (4):256-62.
- Tremblay, S. 1990. Les systemes informatises de reservations dans l'industrie touristique <u>Teoros</u> 9(3): 14-21.
- Turner, L. and J. Ash 1975. <u>The Golden Hordes: International tourism and the Pleasure</u> <u>Periphery</u>. London: Constable.
- U.S Congress, 1989. 101, Amendment H.R. 1233, 1st. Session March, Washington D.C.
- United Nations, 1989. <u>Sustainable Development: A Conceptual Framework</u>. Working Paper No. 13. Department of International Economic and Social Affairs, U.N.
- Urry, J. 1988. Cultural Change and Contemporary Holiday Making. <u>Theory, Culture</u> and Society 5:35-45.
- Urry, J. 1990. <u>The Tourist Gaze: Leisure and Travel in Contemporary Society</u>. London: Sage.
- USAID, 1995. Grenada's Tourism Policy Statement. Draft prepared for discussion by The Caribbean Centre for Policy development with funding from USAID.
- Van'T Hof, T. 1989. Making Marine Parks Self-Sufficient: The Case of Saba. Barbados: Caribbean Conservation Association.
- Vanhove, N. 1989. Tourist Market Segmentation in Wittard, L. Moutinho, eds. <u>Tourism</u> <u>Marketing and Management</u>. Prentice Hall: 563-568.

- Ventura, S. J.; and Kim K. 1993. Modeling urban nonpoint source pollution with a Geographic Information System. <u>Water Resource Bulletin</u> 29(2):189-198.
- Vernon, G. 1966. International Trade and International Investment in the Product Cycle. <u>Ouarterly Journal of Economics</u>. May: 190-207.
- Vincent, G. 1989. A Report on the Proposed Levera National Park, Grenada. Vol. 1, ECNAMP, St. Croix V.I.
- Vincent, G. and S. Milne 1993. <u>Towards a Framework for Assessing Sustainability: The</u> <u>Case of Grenada, W.I.</u> Unpublished paper presented to the Annual Meeting of the Canadian Association of Geographers, Ottawa: May 30-June 3.
- Vincent, G. Milne, S. and E. Sarigollu, 1993. Grenada's Tourism Product: Exploring The Development Options. A Paper Presented to The Grenada Tourism Forum "Planning for Tourism In The Ninties- Part 11". Grand Anse, August 30 - Sept 3, 1993.
- Viraraghavan, T. 1978. Travel of microorganisms from a septic tile. <u>Water Air and Soil</u> <u>Polluton</u> 9:355-362.
- Vlitos-Rowe, I. 1993. " Market Segments: The European Market for Very Expensive Holidays" <u>EIU Travel and Tourism Analyst</u> No.2.
- Wall, G. 1992. <u>Marketing Tourism Destination: A Strategic Planning Approach</u>. longman: New York
- Wall, G. 1993. <u>Ecological Reserves and Protected Areas: the Challenge of Ecotourism</u>. Paper presented at the Seminar on the Environment of the Academic and Scientific Community of Mexico, National Association of Mexican Universities and Inter-American Organization for Higher Education, Toluca, Mexico.
- Watson, G. and J. P. Kopachevsky 1990. Reflections upon Tourism, Commoditization, and the Fetishism of Commodities. A paper presented to the 15th Annual Conference of the Caribbean Studies Association, Port of Spain. Trinidad May 22-26.
- Weaver, D. B. 1986. The Evolution of a Heliotropic Landscape: the Case of Antigua, PhD thesis, London: Department of Geography, University of Western Ontario.



- Weaver, D. B. 1988. The Evolution of a "Plantation" tourism landscape on the Caribbean island of Antigua. <u>Tijdschrift Voor Economische en Sociale Geografie</u> 29(5):127-46.
- Weaver, D. B. 1991a. Alternative to Mass Tourism in Dominica. <u>Annals of Tourism</u> <u>Research</u> 18(3): 414-32.
- Weaver, D. B. 1991b. Grand Cayman Island and the Resort Cycle. <u>Journal of Travel</u> <u>Research</u>. Vol. 29(2): 9-15.
- Weaver, D.B. 1993. Ecotourism in The Small Caribbean Islands. <u>GeoJournal</u> 31 (4):457-65.
- Weaver, D.B. 1994. Ecotourism in the Caribbean and Central America. in E. Carter and G. Lowman (eds.) Ecotourism: A Sustainable Option?, London: John Wiley.
- Weaver, P. A., McCleary, K. W., Lepisto, L., and L. T. Damonte, 1994. The Relationship of Destination Solution Attributes to Psychological, Behavioral and Demographic Variables. Journal of Hospitality and leisure Marketing\_Vol 2(2).
- Weber, S. 1989. Psychographic Segmentation. In <u>Tourism Marketing and Management</u> <u>Handbook</u>. Witt, S. F. and Mountinho I., eds pp 341-344. Prentice Hall.
- Weber, S. 1992. Trends in Tourism Segmentation Research. <u>The Journal of the</u> <u>European Society for Opinion and Marketing</u>. Vol.2 No.2.
- Welihan, W. and Chon, K. 1991. Resort Marketing Trends of the 1990s. <u>Cornell HRA</u> <u>Otly</u> Aug: 56-59.
- Weiler, B. 1992. Nature-Based Tour Operators: are they Environmentally Friendly or are they Faking It? <u>Tourism Management</u>, 8: 174-176.
- Weiler, B. and C. M. Hall. 1992. Special Interest Tourism. London: Bellhaven Press.
- Wenzel, G. and S. Milne. 1990. Tourism development in Clyde River: problems and prospects. A report prepared for the Tourism Committee, Hamlet of Clyde River. Montreal: McGill University.
- Western, D. 1993. Defining ecotourism. In: <u>Ecotourism: A Guide for Planners and</u> <u>Managers</u>. K. Lindberg and D.E. Hawkins (eds.), 7-11. North Bennington, Vermont: The Ecotourism Society.

- Wetzler, B. 1994. Getting of the Beach into the Hills. The Gazette, Montreal, Saturday Jan. 22.
- Wheeler, B. 1991. Tourism's Troubled Times: Responsible Tourism is not the Answer. Tourism Management, 12(2): 91-96
- Wheeler, B. 1992. Responsible Tourism. Tourism Management, 11(3): 262-263.
- Wight, Pamela. 1993. Eco-Tourism: Ethics or Eco-Sell? <u>Journal of Travel Research</u>, Vol#31, Winter, pgs 3-9.
- Wilkinson, L. 1979. Test of Significance in Stepwise Regression. <u>Psychological Bulletin</u>, 86:168-174.
- Wilkinson, Paul, F. 1987. Tourism in small island nations: A fragile dependence, Leisure studies 6(2): 127-14.
- Wilkinson, P.F. 1989. Strategies for Tourism Development in Small Island Microstates. <u>Annals of Tourism Research</u>. 16 (2):153-177.
- Wilkinson, P. F. 1994. <u>Anguilla: A Tourism Success Story</u>? Paper presented at the Second World Conference: Building a Sustainable World Through Tourism. Montreal, Quebec.
- Williams, A. and Shaw, G. 1988. Tourism and Development: Introduction, In <u>Tourism</u> <u>and Economic development</u>, A.Williams and G.Shaw (eds) London: Belhaven Press: 1-11.
- Wolf, C. P. 1977. Social Impact Assessment: The state of the art updated. <u>SIA</u> <u>Newsletter</u> #29:3-23.
- Wood, P. 1991a. Conceptualising the role of services in economic change. <u>Area</u>, 23 (1): 66-72.
- Wood, P. 1991b. Flexible accumulation and the rise of business services, <u>Transactions</u> <u>Institute of British Geographers</u>, 16, 160-172.
- Wood, R. E. 1984. Ethnic Tourism, the State, and Cultural Change in Southeast Asia. Annals of Tourism Research, 11 (3): 353-374.
- Wood, S. 1988. Between Fordism and Flexibility? the Case of The U.S. Car Industry.

In Hyman, R. and Streeck, W (eds), <u>New Technology and Industrial Relations</u>, Oxford: Basil Blackwell, 101-27.

Wood, S. 1990. Club Med's Global Village. Business (UK) Jan. 64-71.

- World Bank, 1989. World Tables: 1988-1989. The John Hopkins Univ. Press, Baltimore.
- World Bank, 1990. Grenada: Updating Economic Note. Report no.8270-GRD.
- World Bank, 1992. Grenada: Country Environmental Memorandum, March 31st.
- World Commission on Environment and Development 1987. <u>Our Common Future</u>. Oxford University Press. ["The Bruntland Report"].
- World Tourism Organization, UNDP and USAID, 1986. The Contribution of Tourism to the National Economy, Jamaica. WTO: Madrid, Spain.
- World Tourism Organisation, 1989. Statistical Report 1989. W.T.O. Madrid.
- World Tourism Organization 1990. <u>Tourism to the Year 2000. Qualitative Aspects</u> <u>Affecting Global Growth.</u> Discussion Paper. Madrid, WTO.
- World Tourism Organization. 1992. <u>Tourism and the Environment: Guidelines for the</u> <u>Development of National Parks and Protected Areas for Tourism</u>. WTO UNEP-IE/PAC Technical Report Series #13.
- World Tourism Organisation, 1993. <u>Measuring Sustainable Tourism Development:</u> <u>Problems and Achievements.</u> In Round Table on Planning For Sustainable Tourism Development. 10th. General Assembly, Bali Sept 30 - Oct 9, Indonesia.
- World Travel and Tourism Review, 1991. Indicators Trends and Forecasts- Caribbean Tourism Realities. No. 1. WTTC. London
- Wrigley, N. 1985. <u>Categorical Data Analysis for Geographers and Environmental</u> <u>Scientist</u>, Longman Inc. New York.
- Xiang, W., and W. L. Stratton 1993. A GIS-based decision support system for stream buffer policy formulation and evaluation. <u>Geographic Information Systems and Water Resources. Proceedings</u> from an AWWA sponsored Symposium, Mobile Alabama, March 1993.

- Yee, J. G. 1993. <u>Economic Impact Assessment of the Travel and Tourism Industry:</u> visitor expenditures, tourism multipliers, input-output analysis and case studies. <u>A Selected Bibliography</u>, Pacific Asia Travel Association, San Francisco.
- Ziffer, K. A. 1989. <u>Ecotourism: The Uneasy Alliance</u>. Washington: Conservation International. Working paper.
- Zinder, H. 1969. <u>The Future of Tourism in the Eastern Caribbean</u>. Zinder and Associates, Washington, D.C.
- Zurick, D. N. 1992. Adventure travel and sustainable tourism in the peripheral economy of Nepal. <u>Annals of the Association of American Geographers</u> 82 (4): 608-628



# GRENADA BOARD OF TOURISM & McGILL UNIVERSITY ECONOMIC IMPACT SURVEY

# CONFIDENTIAL.

We are currently carrying out a study of the economic and environmental impacts of tourism development in Grenada, the results of which will be useful for the future planning of the tourist industry and the national economy. An integral part of this important study is a survey of businesses that directly or indirectly serve visitors to our country.

We hope that you will be willing to assist us in this survey. We must stress that everything you write will be treated in the strictest confidence.

(PLEASE PROVIDE INFORMATION FOR THE MOST RECENT FINANCIAL YEAR)

### I. EMPLOYMENT

How many people do you employ ? \_\_\_\_\_

Please indicate breakdown by category in box below. Categories could include; management, accounting, cleaning, sales person, typist etc.

| CATEGORY | MA           | MALE         |              | FEMALE       |  |
|----------|--------------|--------------|--------------|--------------|--|
|          | Full<br>time | Part<br>time | Full<br>time | Part<br>time |  |
|          |              |              |              |              |  |
|          |              |              |              |              |  |
|          |              |              | <u> </u>     | <u> </u>     |  |
|          |              |              |              |              |  |
|          |              |              |              | <u> </u>     |  |

How many of your employees require a work permit?

If any, what positions do they hold?

2. STAFF COST (including expatriates).

| Wages           |  |
|-----------------|--|
| Salaries        |  |
| Staff Benefits  |  |
| Pension Fund    |  |
| Other Insurance |  |
| IOTAL           |  |

### 3. DUTIES, TAXES AND LICENSES

\_\_\_\_\_

| Import Duty    | <u> </u> |
|----------------|----------|
| Stamp Duty     |          |
| Other Duties   |          |
| <b>V.A.T</b> . |          |
| Property Tax   |          |
| Water Tax      |          |
| Other Taxes    |          |
| Licenses       |          |
| evenuele, etc. |          |

101531

## 4. DETAIL COST OF GOODS AND SERVICES BOUGHT

| CATEGORIES   | GOODS BOUGHT DIRECTLY: |                         |                                  |
|--|------------------------|-------------------------|----------------------------------|
| GOODS:   | IN<br>GRENADA<br>(A)   | FROM<br>OVERSEAS<br>(B) | WHAT %<br>OF (A)<br>IMPORTE<br>D |
| -Goods purchased for resale in the same condition as bought.         |                        |                         |                                  |
| -Foods: meat, vegetables,etc.  | -                      |                         |                                  |
| -Drinks: alcohol, soft drinks and<br>other beverages or ingredients. |                        |                         |                                  |
| -Building materials purchased.                                       |                        |                         |                                  |
| -Repair and maintenance<br>(charged to current expenditure)          |                        |                         |                                  |
| -Other goods   |                        |                         |                                  |
| TOTAL  |                        |                         |                                  |
| SERVICES:  |                        |                         |                                  |
| -Communications<br>(telephone, telex, postage etc.)                  |                        |                         |                                  |
| -Insurance   |                        |                         |                                  |
| -Bank charges  |                        |                         |                                  |
| -Rent<br>(not for owner-occupier property)                           |                        |                         |                                  |
| -Commissions   |                        |                         |                                  |
| -Entertainers (not on staff)   |                        |                         |                                  |
| -Advertising and Promotions  |                        |                         |                                  |
| -Business Services   |                        |                         |                                  |
| -Other Services  |                        |                         |                                  |
| TOTAL  |                        |                         |                                  |

# 5. GROSS CAPITAL EXPENDITURE

•

| CATEGORY  | GOODS BOUGH  | T DIRECTLY:   |                                 |
|---|--|---|---------------------------------|
|   | IN GRENADA<br>(A)  | FROM<br>OVERSEAS<br>(B)   | WHAT % OF<br>(A) IS<br>IMPORTED |
| -For repairs and maintenance<br>(recorded as capital assets)  |  |   |                                 |
| -For new buildings and extensions   |  |   |                                 |
| -Capital equipment<br>i.e vehicles, equipment, etc.   |  |   |                                 |
| -Furniture and fittings   |  |   |                                 |
| -Other Capital goods  |  |   |                                 |
| TOTAL   |  |   |                                 |
| Capital Expenditure   | - T  | OTAL  |                                 |
| Capital Expenditure<br>TOTAL<br>WHAT ARE YOUR REVENUE PRO<br>S Yr<br>WHAT STRATEGIES DO YOU PLA   | T<br>T<br>JECTIONS FOR THE N<br>S<br>N TO USE TO INCRE             | OTAL<br>/hat (%) of the inco-<br>indicated above com<br>tourism?.<br>VEXT TWO FINAL<br>Yr<br>ASE REVENUE ?.                         | ome<br>cs<br>NCIAL YEARS        |
| Capital Expenditure<br>TOTAL<br>. WHAT ARE YOUR REVENUE PRO<br>S Yr<br>. WHAT STRATEGIES DO YOU PLA<br>. WHAT STRATEGIES DO YOU PLAN<br>. HOW DO YOU PLAN TO IMPROV | T<br>T<br>V<br>I<br>IECTIONS FOR THE N<br>S<br>N TO USE TO INCRE.  | OTAL<br>/hat (%) of the inco-<br>indicated above com<br>om tourism?.<br>NEXT TWO FINAL<br>Yr<br>ASE REVENUE ?.<br>VER THE NEXT T    | NCIAL YEARS                     |
| Capital Expenditure<br>TOTAL<br>WHAT ARE YOUR REVENUE PRO<br>S Yr<br>WHAT STRATEGIES DO YOU PLA<br>WHAT STRATEGIES DO YOU PLAN<br>IN HOW DO YOU PLAN TO IMPROV      | T<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T<br>T | OTAL<br>/hat (%) of the inco-<br>idicated above com<br>om tourism?.<br>IEXT TWO FINAL<br>Yr<br>ASE REVENUE ?.<br><br>VER THE NEXT T | NCIAL YEAR:                     |

•

11. HOW HAS THE DEMAND FOR THE GOODS AND/OR SERVICES YOU PROVIDE \_ CHNCED OVER THE PAST TWO YEARS?

12. DO YOU THINK THERE SHOULD BE A LIMIT THE TOURISM GROWTH IN GRENADA?. WHAT SHOULD THAT LIMIT BE ,AND WHY IS A LIMIT NECESSARY?.

131. DO YOU THINK THAT TOURISM HAS HAD A NEGATIVE IMPACT ON GRENADA'S ENVIRONMENT, WHY?.

13b. DO YOU SEE THIS AS A MAJOR PROBLEM IN THE FUTURE, IF YES, HOW CAN THE ASSOCIATED PROBLEMS BE AVOIDED?

14. ARE THERE ANY OTHER COMMENTS OR ISSUES THAT YOU WOULD LIKE TO RAISE?.

•

\_\_\_\_\_

•

.

MANY THANKS FOR YOUR COOPERATION, WI WIND YOU CONTINUED SUCCESS



1

1

# GRENADA TOURIST BOARD

#### VISITOR EXPENDITURE AND MOTIVATION

#### SURVEY

We hope that your stay in Grenada was a pleasant and rewarding experience.

Before you leave, we would like you to complete this Questionnaire as accurately as you can. The information you give will help us to better plan and develop our Tourism Industry.

Only one person from each family or spending party should complete a Questionnaire.

# Confidential

This Survey is being carried out together with the Caribbean Tourism Research and Development Centre.

......We do not require your name ......

### BACKGROUND INFORMATION (please tick the appropriate box)

| 1. "Where do you live?       |                                     |
|------------------------------|-------------------------------------|
| . U.S.A 🗖                    | State                               |
| Canada 🗖                     | Province                            |
| U.K 🗖                        |                                     |
| Other Europe                 |                                     |
| Caribbean 🔽                  |                                     |
| Øfter                        |                                     |
| 2. PURPOSE OF VISIT?         |                                     |
| Vacation                     |                                     |
| Business                     |                                     |
|                              |                                     |
| Other 🖸                      | Specify                             |
| 3. Is this your first visit! | 2                                   |
| Vet 🕅                        | •                                   |
| No 🗖                         |                                     |
| If no, how many times t      | ctore?                              |
| 4. Type of accommodation     | N?                                  |
| (a) Name                     | *********************************** |
| (b) Type (tick approx        | riste box)                          |
| Hotel 🚺                      | Apartment/Villa                     |
| Guest                        |                                     |
| House                        | Friend/Relative 🗖                   |
| Other                        | Specify                             |
| 5. IN WHICH AGE GROUP AT     | NE YOU?                             |
| Less than 20 📋               | 35 — 39 🗖                           |
| 20 - 24 🛄                    | 40 49 💟                             |
| 25 29 🗖                      | 50 — 64 🔲                           |
| 30 — 34 🔲                    | 65 and over                         |
| E EXACTLY HOW MANY NO        | THIS DED YOU                        |

2

| MOTIVATION  | EXPENDITURE  |
|---|--|
| (please tick appropriate box)   | (please tick appropriate box)  |
| 7. WHAT WAS YOUR MAIN SOURCE OF INFORMATION IN<br>PLANNING THIS TRIP? | When answering the questions below, please<br>always state the currency units you are using to<br>express your expenditure e.g. USS, Can.S, E.C. |
| Friends/Relations   |  |
| Tourist Board   | 12. DID YOU TRAVEL ON A FRE-FAID PACKAGE?  |
| Travel Agent/Brochure   |  |
| Newspaper/Magazine/TV   |  |
| Tour Operator   | 13. IF YOU CAME ON A PACKAGE:  |
| Previous visit  | (a) Name of the package?   |
| Other   | (b) Total cost of the package?<br>(per person)   |
| 8. WHAT ATTRACTED YOU TO GRENADA AS A<br>DESTINATION?                 | (c) WHAT DID THE PACKAGE INCLUDE?<br>(Uck appropriate boxes)   |
| 4== = = = = = = = = = = = = = = = = = =                               | Air transport  |
| •••••••••••••••••••••••••••••••••••••••                               | Accommodation — Give plan<br>with room   |
|   | Other 门 meals only   |
| 9. How important were each of the following in                        | Specify  |
| YOUR DECISION TO VISIT? .<br>Important] Unimportant                   | 14. If you did not come on a package, did you mak<br>any advance payments before coming to<br>Grenada?   |
| Climate   | Yes 🛄 (i) How much?  |
| Peace and quiet   | (ii) To whom?  |
| Tropical setting  |  |
| Sailine   | 15. (a) WHAT WAS YOUR TOTAL EXPENDITURE  |
| Generally inexpensive   | (exclude the amounts covered in Ou. 13 & 14 above)   |
| Business  | -lease state correct   |
| Came before   | (A) How MICH OF THIS MONTH DO YOU CROW ON  |
| 0. How far in advance did you plan your trip?                         | (b) HOW NOCH OF THIS MONET DID TOO SPEND ON  |
| Less than I week  | (including meals & drinks)   |
| 1 — 2 weeks   | * * Other meals & drinks   |
| 2 weeks to 1 month  | • • Yacht charter  |
| 1 — 3 months []<br>3 months or more []                                | • • Taxis/Car rental/Tours   |
|   | • • Entertainment/Recrestion   |
| 11. DID YOU VISIT ANY OTHER ISLANDS DUTING YOUR<br>STAY IN GRENADA?   | • • Shopping   |
| Yes M   | • • Other  |
| No 🗖  | (include Departure Tax)  |
| If yes, where did you go?   | 16. HOW MANY PEOPLE DID THIS EXPENDITURE<br>COVER?   |
|   | ****************************   |
| 3   | 4  |

1

•

į

#### SATISFACTION

#### (please tick appropriate box)

| 17. | How  | MOULD   | YOU | RATE  | THE | FOLLOWING | ASPECTS OF | , |
|-----|------|---------|-----|-------|-----|-----------|------------|---|
|     | YOUR | STAY IN | GR  | INADA | ?   |           |            |   |

| ٨œ  | 7555                  | Very<br>satisfied | Average | Not<br>satisfied |
|-----|-----------------------|-------------------|---------|------------------|
|     | Airline connections   | ٦                 |         |                  |
|     | Immigration           | δ                 |         | 6                |
|     | Customs               | 고                 |         |                  |
| Qu  | LITY                  |                   |         |                  |
|     | Accommodation         | 핀                 |         |                  |
|     | Restaurants           | J                 |         |                  |
|     | Night life -          |                   |         | 6                |
|     | Yachting              |                   |         |                  |
|     | Beaches               | <b>M</b>          |         |                  |
|     | Water Sports          |                   | Ξ       |                  |
|     | Taxi/Hired cars       |                   |         |                  |
|     | Day trips/Excursions  |                   |         | <u>11</u>        |
|     | Post Cards            | 8                 |         |                  |
| Cos | ਸ                     |                   |         |                  |
|     | Overall cost of visit |                   |         |                  |
|     | Price of accommodatio | <del>n</del> 🖸    |         |                  |
|     | Price of Meals/Drinks |                   |         |                  |
| 72  | WOULD YOU RECOMME     |                   |         |                  |

## Would you reconnend Grenada to a friend? (tick appropriate box)

| Definitely     |   |
|----------------|---|
| Probably       |   |
| Probably not   |   |
| Definitely not | 0 |
|                |   |

# Any other points

Please indicate below any additional comments you may wish to make about your stay in Grenada.

| *************************************** | }********************** |
|---|-------------------------|
| ******************                      | *****                   |
|   | *****                   |
| **************                          | ******                  |
|   | *******                 |

5

•

#### APPENDIX

| (1) | What outdoor activities did you personally engage<br>in while visiting Grenada? (Check all that apply). |
|-----|---|
|     | Swimming  |
|     | Bird Watching   |
|     | Snorkeling  |
|     | Sightsceing   |
|     | Nature Hiking   |
|     | Nature Photography  |
|     | Scuba Diving  |
|     | Other Outdoor Activities  |
|     | (Please list below)   |
|     |   |

(2) Which, if any, of the following prevented you from participating in a desired outdoor activity while here?

(Check all that apply)

.

| ************      | Lack of Time                             |
|-------------------|--|
|                   | Too Expensive                            |
|                   | Insufficient Transportation              |
| ***************** | Lack of Instruction/Guides               |
|                   | Foor Facilities for Existing<br>Activity |
|                   | No Information on Existing<br>Activity   |
| *********         | Your Prefered Activity not<br>Available  |

(3) Which of the following places did you visit in Grenada? (Check all that apply). How long did you spend at each place?

| St. George's   | ************ |
|--|--------------|
| Ft. George   | ************ |
| Bathway Beach  | *=========== |
|  | ***********  |
|  |              |
| Lake Antoine   | ****         |
| A 18. 51.1   |              |
| Grand Etang National   | Park         |
| Grand Etang National   | Park         |
| Grand Etang National<br>Grand Anse Beach   | Park         |
| Grand Etang National<br>Grand Anse Beach<br>Fort Frederick   | Park         |
| Grand Etang National<br>Grand Anse Beach<br>Fort Frederick<br>Annandule Falls                              | Park         |
| Grand Etang National<br>Grand Anse Beach<br>Fort Frederick<br>Annandale Falls<br>Levera Pond               |              |
| Grand Etang National<br>Grand Anse Beach<br>Fort Frederick<br>Annandale Falls<br>Levera Pond<br>La Sagesse | ······       |

6 ·

| (4) | What place in Grenada did you most enjoy visiting?   |      |  |
|-----|--|------|--|
|     |  |      |  |
| (5) | Approximately how much time did you spend visiting the National Parks of Grenada?  |      |  |
|     | Did not visit any National Park  |      |  |
|     | 0 to 30 minutes  |      |  |
|     | Between 30 minutes and 1 hour  |      |  |
|     | Between 1 and 4 hours  |      |  |
|     | Between 4 and 24 hours (1 day)   |      |  |
|     | Between 1 and 2 days   |      |  |
|     | More than 2 days   |      |  |
| (6) | How did you first find out about the places to visit<br>in Grenada? (Check one blank)  |      |  |
| -   |  |      |  |
|     | Magazines  |      |  |
|     | Travel Agent   |      |  |
|     | Friends  |      |  |
|     | Cruise Tour Director   |      |  |
|     | Tourist Office in your Country   | :    |  |
|     | Grenada Tour Guide   | •    |  |
|     | Grenada Guide Book   | ł    |  |
|     | Taxi Drivers   | •    |  |
|     | Hotel Activity Hostess   |      |  |
|     | Information in Notel Room  | •    |  |
|     |  | :    |  |
| (7) | What can you suggest that the Grenada Department<br>of Townism do to imprive the experience of tourists<br>visiting Grenada? |      |  |
|     |  | N, C |  |
|     | *****  | •    |  |
|     |  |      |  |
|     | 7  | •    |  |

.

# THANK

# YOU

# COME AGAIN!

·

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your last vacation.

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as 🚽 your last vacation.

| A8.                            | DESTINATION_A   | DESTINATION B   |
|--------------------------------|---|---|
| ACCOMMODATION :<br>Type        | A Family home (creole style cooking)  | A Family home (creole style cooking)  |
| Feature                        | All tactuctus- unlimited food/drinks (no tips)  | All Inclusive- unlimited food/drinks (ne tips)  |
| Price (\$ Can.)                | \$ 1,500  | \$ 2,250  |
| Location (to beach)            | Across 2-lane main read from beach  | On beach  |
| Location (to National<br>Park) | 15 min drive to astional park   | On edge of national park  |
| Surroundings                   | Mostly natural landscape, few houses<br>(local residences) and an hotels within 10<br>min, walk | Mostly natural landscape, few houses<br>(local residences) and an hotels within<br>10 min, walk |
| ACTIVITIES ;                   |   |   |
| Attractive biking trails       | One-hear walk on even path through wildlife sanctuary   | Two-hour welk (half uphill) to vista of islands and ocean                                       |
| Cultural events                | Weekly alght-time street festival (Tourist participation)                                       | Weekly outdoor cultural shows and local<br>music (Tourist observation)                          |

I will choose (check [X] one only): Destination A \_\_\_\_\_ Destination B \_\_\_\_\_

| A9.                            | DESTINATION A   | DESTINATION B  |
|--------------------------------|---|--|
| ACCOMMODATION :<br>Type        | A 30-40 room "collage style" hotel<br>complex                       | A 200+ room hole1  |
| Festure .                      | All Inclusive- unlimited food/drinks (no<br>tips)                   | All lactustie- unlimited food/drinks (no<br>tips)                        |
| Price (S Can.)                 | \$ 2,250  | \$ 2,250   |
| Location (to beach)            | Across 2-lane main road from beach                                  | Across 2-lane main road from beach                                       |
| Location (to National<br>Park) | 45 min, drive to national park                                      | No national park on island   |
| Surroundings                   | Natural landscape, no other development<br>within 10 min. walk      | Six - 4 storey hotels and apartment<br>buildings within 10 min, watk     |
| ACTIVITIES :                   |   |  |
| Attractive hiking trails       | Ose-hour walk on level ground through virgin forest                 | Two-bowr walk (half uphill) to<br>waterfall and natural pool             |
| Cultural events                | Weekly outdoor cultural shows and local music (Tourist observation) | Weekly outdoor cultural shaws and local<br>music (Tourist participation) |

I will choose (check [X] one only): Destination A \_\_\_\_\_

Destination B

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your fast vacation.

| Weekly outdoor cultural shows and local<br>music (Tourist observation) | Weekly night-lime street festIval (Tourist<br>participation) | Cultural events                |
|--|--|--------------------------------|
| Ose-hour walk on level ground through virgin forest                    | Two-bour walk (half uphill) to elsta of<br>islands and ocean | Attractive Siking trails       |
| <b>*</b><br>640  |  |                                |
|  |  | ACTIVITIES:                    |
| within 10 min. walk  | walk   |                                |
| Natural landscape, no other development                                | Six + 10 storey hotels within 10 min.                        | Surroundings                   |
| 45 mla, drive to national park   | Os edge of national park                                     | Location (to National<br>Park) |
| On hill, averlooking beach, 5 min. wolk<br>away                        | Across 2-lant main road from beach                           | Location (to beach)            |
| \$ 2,250   | \$ 2,000   | Price (S Can.)                 |
| All leciesise- volimited food/drinks (no<br>lips)                      | All laclaste- unlimited food/drinks (no<br>tips)             | Festure                        |
|  |  | Туре                           |
| A Rented villa (catered)   | A Rented villa (catered)                                     | ACCOMMODATION :                |
| DESTINATION B  | DESTINATION A  | A10.                           |

I will choose (check (X) one only): Destination A \_\_\_\_\_ Destination B \_\_\_\_\_

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather siland vacation. Flease check the alternative you will most likely choose, assuming you take it with the same people as ' your last vacation.

| Cultural events We   | Attractive bibing trails Or                              | ACTIVITIES: | Surroundings M<br>(kc  | Location (to National 49<br>Park)     | Location (to beach) 10                                      | Price (S Can.) 5 | Feature · A                                      | АССОММОРАТІОН І А<br>Туре          | ۸٦.           |
|--|--|-------------|--|---------------------------------------|---|------------------|--|------------------------------------|---------------|
| ickly outdoor celtural shews and local<br>isle (Tourist observation) | ie-hour walk on level ground through<br>"gin forret      |             | osily astural landscape, few bewee<br>cal residences) and ee bolel within 10<br>in. walk | i <b>mie</b> . drive to assions) park | issed, 20 min. walk to beach,<br>pricoking forest and ocean | 1,350            | merican plan - raies include three<br>eais/day   | Family home (creole style cooking) | DESTINATION A |
| Weebly night-time street fettinal<br>(Tourist partkipation)          | Oss-hour walk on even path through<br>wildlife sancturry |             | Six - 10 storey botels within 10 min.<br>walk  | 45 mie. drive te national park        | On beach  | \$ 1,100         | American plan - rates include three<br>meats/day | A Realed villa (citered)           | DESTINATION B |

I will choose (check [3] one only): Destination A \_\_\_\_\_ Destination B \_\_\_\_\_

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather Island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your last vacation.

| A4.                            | DISTINATION_A   | DESTINATION B  |
|--------------------------------|---|--|
| ACCOMMODATION :<br>Type        | A Rented vills (catered)  | A Rented sills (catered)   |
| Feature                        | All isclusive- unlimited food/drinks (no tips)                      | American plan- rates include three<br>meals/day  |
| Frice (\$ Can.)                | \$ 1,500  | \$ 1,350   |
| Location (to beach)            | On beach  | Across 2-lane main road from beach   |
| Location (to National<br>Park) | No national park on island  | 45 mls. drive to assional park   |
| Surroundings                   | Natural landscape, no other development<br>within 10 min. walk      | Mostly natural landscape, few houses<br>(local residence) and no hotels within<br>10 min, walk |
| ACTIVITIES :                   |   |  |
| Attractive hiking trails       | Two-hour walk (half uphili) to waterfall<br>and natural pool        | Two-bour walk (half uphill) to vista of<br>islands and ocean                                   |
| Cultural events                | Weekly outdoor cultural shews and local music (Tourist observation) | Weekly night-time street festival<br>(Tourist participation)                                   |

I will choose (check [X] one only): Destination A

Destination B

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather Island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your last vacation.

| A13.                           | DESTINATION A  | DESTINATION B  |
|--------------------------------|--|--|
| ACCOMMODATION :<br>Type        | A 30-40 room "collage sigls" holel<br>complex                | A 200+ room hotel  |
| Feature                        | All laclusize- unlimited food/drinks (no<br>tips)            | American pinn - rates include three<br>ments/day             |
| Price (\$ Can.)                | \$ 1,750   | \$ 1,350   |
| Location (to beach)            | On beach   | On bill, overlooking beach, 5 min. walk<br>away              |
| Location (to National<br>Park) | 15 min drive to national park                                | No national park on island                                   |
| Surroundings                   | Six - 10 storey hotels within 10 min.<br>walk                | Six - 10 storey hotels within 10 min.<br>walk                |
| ACTIVITIES :                   |  |  |
| Attractive hiking trails       | One-hour walk on even path through<br>wildlife sanctuary     | Ose-hour walk on even path through wildlife sanctuary        |
| Cultural events                | Weekly night-time street festival (Tourist<br>participation) | Weekly night-time street feellval<br>(Tourist participation) |

1 will choose (check [X] one only): Destination A \_\_\_\_\_

Destination B \_\_\_\_\_

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your last vacation.

| A14.                           | DESTINATION A  | DESTINATION B  |
|--------------------------------|--|--|
| ACCOMMODATION :<br>Type        | A Family home (creole style cooking)                                   | A Family home (creole style cooking)                           |
| Feature                        | All Inclusive- unlimited food/drinks (no<br>tips)                      | American plan - rates include three<br>meals/day               |
| Price (S Can.)                 | \$ 2,000   | \$ 1,350   |
| Location (to beach)            | Oa beach   | Island, 20 min. walk to beach,<br>overlooking forest and ocean |
| Location (to National<br>Park) | 45 mln. drive to national park   | On edge of national park                                       |
| Surroundings                   | Six - 4 storey hotels and spariment<br>buildings within 10 min. walk   | Natural landscape, no other development<br>within 10 min. walk |
| ACTIVITIES :                   | A oto  |  |
| Attractive biking trails       | One-hour welk on level ground through virgin forest                    | Ose-hour walk on level ground through virgin forest            |
| Cultural events                | Weekly outdoor cultural shows and local<br>music (Tourist observation) | Weekly night-time street festival<br>(Tourist participation)   |

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your fast vacation.

|                                | در وی کاران نفخه بروی و این است.                                       |   |
|--------------------------------|--|---|
| AJ.                            | DESTINATION_A  | DESTINATION B   |
| ACCOMMODATION :<br>Type        | A 200+ room hotel  | A 30-40 room "collage sigls" holel<br>complex   |
| Feature                        | American plan - rates include 3 *<br>meals/day                         | Alt lacture - unlimited food/drinks (no tips)   |
| Psike (S Can.)                 | \$ 1,100   | \$ 2,000  |
| Location (to beach)            | Os hill, overlooking beach, 5 min. walk<br>away '                      | Os hill, overlooking beach, 5 min. walk<br>sway   |
| Location (to National<br>Park) | 45 minutes drive to national park                                      | 15 minutes drive to national park   |
| Surroundings                   | Six -10 storey hotels and spariment<br>buildings within 10 min. walk   | Mostly natural landscape, few houses<br>(local residences) but no hotels within<br>10 min. walk |
| ACTIVITIES :                   |  | 4. <u>.</u><br>   |
| Attractive biking trails       | One-hour walk on fevel ground through virgin forest                    | Two-bour walk (half uphili) to state of<br>islands and ocean                                    |
| Cultural events                | Weekly outdoor cultural shows and local<br>music (Tourist observation) | Weekly outdoor cultural shows and local<br>music (Tourist observation)                          |

I will choose (check [X] one only): Destination A \_\_\_\_\_ Destination

Destination B

I will choose (check [X] one only). Destination A \_\_\_\_\_

Destination B \_\_\_\_\_

Suppose the two destinations A and B described below are the only alternatives available for your next warm-westher tiland vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your last vacation.

| А1.                            | DESTINATION A  | DESTINATION B   |
|--------------------------------|--|---|
| ACCOMMODATION:<br>Type         | A 2004 room hotel  | A 30-40 room "cellage siyle" holel<br>comples                       |
| Feature                        | Alt lecterine- unimited food/drinks (no<br>tips)   | American plan - rates include 3<br>meals/day                        |
| Price (\$ Can.)                | \$ 2,250   | 8 1,350   |
| Location (to beach)            | On beach   | Os beach  |
| Location (to National<br>Park) | On edge of national park   | 15 minutes drive to national park                                   |
| Surroundings                   | Mostly natural landscape, few hooses<br>(local residences) but ao hotel within 10<br>mia. welk | Six -4 clorey bolels and apariment<br>buildings within 10 min. waik |
| ACTIVITILS:                    | *  |   |
| Attractive bibles traits       | Tuo-boor walk (half uphill) to tista of<br>Islands and ocean                                   | Two-howr walk (half uphili) to<br>waterfall and natural pool        |
| Cultural events                | Weekly night-time street feettrafs (Tourist<br>partkipation)                                   | Weekty aight-time street festleals<br>(Todrist participation)       |

I will choose (check [X] one only): Destination A \_\_\_\_\_ Destination B \_\_\_\_\_

.

Suppose the two destinations A and B described below are the only alternatives available for your neat warm-weather island vacation. Please check the afternative you will most fikely choose, assuming you take it with the same people as your fast vacation.

| _                              |  |                   |  |
|--------------------------------|--|-------------------|--|
| A15.                           | DESTINATIO                                       | V N               | DESTINATION B  |
| ACCONMODATION :<br>Type        | A Family home (create st                         | yle cooking)      | A Family home (ceeds style cooking                                 |
| Feature .                      | American plan - rates inc<br>meals/day           | lude three        | All Inclusive- unlimited food/drinks<br>(ips)                      |
| Price (S Can.)                 | 5 1,350  |                   | \$ 2,000   |
| Location (to beach)            | Oa hill, overlooking beac<br>away                | h, S mín. walk    | Acress 2-lans main road from beach                                 |
| Location (to National<br>Park) | On edge of national park                         |                   | On edge of national park   |
| Surroundings                   | Natural landscape, me oth<br>within 10 min. walk | er derelopment    | ılı - 10 etorey hotelə within 10 mia<br>wəlk                       |
| ACTIVITIES :                   | \$<br> <br>                                      | ĺ∕¥               |  |
|                                | dfb  | 4                 |  |
| Attractive hikles (ralls       | Two-hour walk (half uph<br>Islands and occan     | iii) to sista of  | Ose-bour walk on even path throug<br>wildlife saectaary            |
| Cultural events                | Weekly night-time street<br>participation)       | fettiral (Tourist | Weekly outdoor collocal shans and l<br>music (Tourist observation) |

1 will choose (check {X] one only): Destination A \_\_\_\_\_ Destination. B \_\_\_\_

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your fast vacation.

| Cultural events  | Attractive bibleg trails                                     | ACTIVITIES :   | Surrounding:  | Location (to National<br>Park) | Location (to beach)  | Price (S Can.) | Feilure  | ACCOMMODATION :<br>Type                       | AI6.          |
|--|--|--|---|--------------------------------|--|----------------|--|---|---------------|
| Weekly night-time street festlasl (Tourist<br>participation) | Two-hour welk (half uphill) to slate of<br>filands and ocean | <b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b><br><b>1</b> | Six - 4 storey hotels and spectment<br>buildings within 10 min. walk                            | On edge of national park       | Jelsed, 20 min. walk to beach,<br>overlooking forest and ocean | \$ 1,100       | American plan - rates include three<br>meats/day | A 30-40 room "cotlage sijle" hotel<br>complex | DESTINATION A |
| Weekly night-time street fetthel<br>(Tourist participation)  | Two-howr walk (half uphill) to slite of<br>silands and ocean |  | Mostly natural landscape, few howses<br>(local residences) and an hotels within<br>10 min. walk | Ne national park on itland     | taland, 20 min. waik to beach,<br>overlooblag forest and oceas | \$ 1,100       | American pinn - rates include three<br>meals/day | A 200+ room hole!                             | DESTINATION & |

I will choose (check [X] one only) Destination A \_\_\_\_\_ Destination B \_\_\_\_\_

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather situad vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your fast vacation.

|                           | V BALLVALISTA  |  |
|---------------------------|--|--|
| ACCOMMODATION :           | A 30-40 Roam "collage style" hotel   | A 200+ room hotel  |
| Туре                      | complex .  |  |
| Feature .                 | American pian - rates laciude three meats/day                                      | All Inclusive- unlimited food/drinks (n<br>tips)               |
| Price (S Can.)            | \$ 1,600   | \$ 2,000   |
| Location (to beach)       | Oa hill, overlooking beach, 5 min. walk  | On beach   |
|                           | away   |  |
| Location (to National     | No national park on Island   | No national park on island                                     |
| Park)                     |  |  |
| Surroundings              | Mostly natural landscape, few houses<br>(local residences) but no hotels within 10 | Natural landscape, so other<br>development within 10 min. walk |
|                           | min, walk  | Ť  |
| ACTIVITIES                | ×  |  |
|                           |  |  |
| Attractive bibling trails | Two-beer walk (half uphili) to waterfail<br>and natural pool                       | One-hour walk on level ground through                          |
| Cultural eventa           | Weekly outdoor cultural shews and local  | Weekly outdoor cultural shows and loca                         |
|                           | music (Tourist observation)  | music (Tourist observation)                                    |
|                           | musik (Tokrist Abservatika)  | in music (   |

will choose (check (X) one only): Destination A

Destination B

# THE PRESENCE OF THESE SYMBOLS INDICATE THE AVAILABILITY OF THE FOLLOWING ACTIVITIES WITHIN OR CLOSE TO THE DESTINATION DESCRIBED:

٠

1.1

.

#### FOR STATISTICAL PURPOSES ONLY

|           | International style Castao Gambling   | 1. Where do you live 7<br>City<br>Province<br>Country   | 2. Are you?<br>Kisle []<br>Femsle []   | 3.What is your<br>occupation   |
|-----------|---|---|--|--|
| <b>\$</b> | Glass Bottom Boat Irlps to excellent reefs that allow good snorkelling.   | 4. How often did you<br>vacation overseas<br>during the past five<br>years                      | 5. Have you had a<br>warm weather island<br>vacation before?<br>Yes []                               | 6. How many times have you<br>vacationed in the Caribbean?   |
| $\square$ | Yacht charters that are very flexible, many charter options possible close to good saiting meas.                | 7. In which are group are   | No []  | 9. Your annual gross family  |
|           | Day tours by small Airplane and amphibians to remote islands with secluded beaches and<br>unspoilt environment. | you?<br>Under 18 []<br>18 - 25 []<br>26 - 35 []<br>36 - 45 []<br>46 - 55 []                     | attained?<br>Some high school []<br>High school []<br>Some college []<br>College []<br>University [] | income is? (\$Can)<br>Under 10,000.00 []<br>10 - 19,999.00 []<br>40 - 19,999.00 []<br>60 - 79,999.00 []<br>60 - 79,999.00 [] |
| 1-1       | Sea Augliag available with skippered or "bare" bonts.   | 56 - 65 []<br>Over 65 []  |  | 100,000 + []   |
|           | Water-Shiing  | 10. I took my last warm<br>weather vacation with 3<br>My spouse []<br>My spouse and children [] | II, ifow many days will<br>your next island<br>vacation be?  | 12. My next warm weather<br>Island vacation will be taken in<br>Summer ()<br>Fall ()   |
| <b>.</b>  | Jet -Skilag   | Friend(s) of same sex []<br>Friend(s) of opposite sex []<br>Alone []<br>Other (specify) []      |  | Winter []<br>Spring []<br>of 199 (Year)  |
| *         | Scuba- Dislog   | 13. How important are each of the<br>Use a scale of 5 [totally unimpor                          | following to you when choosis<br>stant] to 5 [extremely importan                                     | as a vacation destination?<br>t].  |
| 8         | 18-hole International standard Golf Course  | Natural Beauty<br>Peace and quiet   |  | 4 5  |
| 6%0       | Countryside bicycle trails (ON and OFF road)  | Unspoilt eavironmen<br>Land based activities<br>Water based activitie<br>High quality service   | at () () ()<br>6 () () ()<br>7 () () ()<br>7 () () ()<br>7 () ()<br>7 () ()                          |  |

14. In the context of a Caribbean vacation indicate the likelihood of choosing the following types of vacations outlined below ? ( Use a scale of 1 to 5, where 1 = highty unlikely and 5 = definitely)

|  | 1    | 2    | 3    | 4    | 5    |  |
|--|------|------|------|------|------|--|
| A one-destination package (airfare only)         | Ð    | Ð    | Ð    | Ð    | - 11 |  |
| A multi-destination package (airfare only)       | i i  | i i  | - İİ | - Čİ | - Ö  |  |
| A one destination package (air & accom only)     | ii - | - ii | - Ü  | - Ü  | ii - |  |
| A multi-destination package (air & sccom only)   | - ÉÉ | - Ü  | - Ü  | - Û  | - ti |  |
| A one-destination package                        |      | •••  |      |      | •••  |  |
| ( sir, secon & breakfast only)                   | 0    | - (1 | - 11 | 11   | - 11 |  |
| A multi-destination package                      |      |      |      |      |      |  |
| ( sir, sccom & breakfast only)                   | 11   | Ð    | 11   | []   | - 11 |  |
| A one-destination package                        |      |      |      |      |      |  |
| (alr, accom & 3 meals only)                      | 11   | 11   | 0    | 11   | 1    |  |
| A multi-destination package                      |      |      |      |      |      |  |
| ( air, accom & 3 meals only)                     | 11   | - () | - 11 | 0    | 11   |  |
| A one-destination package                        |      |      |      |      |      |  |
| ( All inclusive: air, accom, meals, taxi, tours, |      |      |      |      |      |  |
| sports, games, drinks and other)                 | 11   | 11   | - 11 | 0    | 0    |  |
| A multi-destination package                      |      |      |      |      |      |  |
| ( All inclusive: air, accom, meals, taxl, tours, |      |      |      |      |      |  |
| sports, games, drinks and other)                 | []   | 11   | - 11 | 1    | - 11 |  |
| A special interest package ( diving, sailing,    |      |      |      |      |      |  |
| birdwatching, hiking, golfing,                   |      |      |      |      |      |  |
| educational, etc.), specify                      | 0    | []   | - 11 | 0    | - 11 |  |
| A non-packaged holiday (With the help of your    |      |      |      |      |      |  |
| travel agent you arrange your own accommodation, |      |      |      | _    |      |  |
| meals, activities, etc.                          | 0    | 0    | 11   | 0    | 0    |  |
|  |      |      |      |      |      |  |

15. Using a scale of 1 to 5, indicate how you consider yourself in terms of each of the personality and lifestyle characteristics below 7 (1 = not at all and 5 = definitely so)

|                           | 1     | 2    | J      | 4   | 5     |
|---------------------------|-------|------|--------|-----|-------|
| An adventurer             | ()    | П    | 0      | 0   | 1     |
| An action oriented person | ii    | - ii | - Ü    | - Ü | - Ü   |
| An outdoor person         | ii –  | - Ü  | - Ü    | - Û | - 11  |
| An opinion leader         | i) ii | 0    | 11     | 11  | - ( ) |
| A fun seeker              | ii i  | Ü    | - Ü    | - Ü | - 0   |
| An environmentalist       | 0     | 0    | - 11 - | 11  | - ()  |

16. On which Caribbean islands do you think you can find your ideal type vacation at an affordable price ?

#### WE DO APPRECIATE YOUR CONTRIBUTION, THANK YOU AGAIN

#### McGILL UNIVERSITY

#### TOURISM MARKET SURVEY

RETURN COMPLETED QUESTIONNAIRE AND WIN A

#### CARIBBEAN VACATION



We are currently carrying out a study to determine the importance of different features in tourists' choices of warmweather island destinations. The results will be useful for the future planning and

development of the tourism industry in island microstates.

nights free accommodation at a luxury hotel.

If you complete this survey carefully you could be a winner of a vacation for two to an English speaking Island in the Caribbean (approximate value \$ <u>Can. 4200.00</u>). The prize comprises two return tickets by scheduled carrier from Toronto and seven

Please complete the questionnaire as best you can. Everything you write will be treated in the strictest confidence. Then fill in the attached address label and mail back the questionnare using the enclosed business reply envelope.

On the following pages you are presented with choices between different vacations. You should assume that:

 All accommodations whether hotel, villa or private home are of high quality, have private bath and swimming pool and are located in a safe, clean and friendly environment.

- The price (\$ Can) quoted is for a seven (7) hight stay. This includes airfare, airport transfers and accommodation.

- · Cottage hotel means independent detached units (buildings) within a hotel complex.
- The "All inclusive concept" also includes free use of gym and water sports facilities.

PLEASE RETURN BEFORE AUGUST 1,1993.

MANY THANKS FOR YOUR PARTICIPATION.

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your last vacation.

11

| Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather     |
|---|
| Island vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as |
| your last vacation.   |

DESTINATION B

DESTINATION A

| A6.                            | DESTINATION_A  | DESTINATION B  |
|--------------------------------|--|--|
| ACCOMMODATION :<br>Type        | A Rented villa (catered)   | A Rented villa (catered)   |
| Feature                        | American plan - rates include three<br>meals/day                     | All factorize- unlimited food/drinks (no tips)                         |
| Price (\$ Can.)                | \$ 1,750   | \$ 2,000   |
| Location (to beach)            | On hill, overlooking beach, 5 min. walk<br>away                      | faland, 20 min. walk to beach,<br>overlooklag forest and ocean         |
| Location (to National<br>Park) | 15 min drive to national park  | 45 mlø. drive to national park   |
| Surroundings                   | Six - 4 storey hotels and apartment<br>buildings within 10 min, walk | Six - 4 storey hotels and spartment<br>buildings within 10 min. walk   |
| ACTIVITIES :                   |  |  |
| Attractive biking trails       | Gee-hour walk on even path through wildlife saucteary                | Two-hour walk (half uphill) (o<br>waterfall and natural pool           |
| Cultural events                | Weekly night-time street festival (Tourist participation)            | Weekly outdoor cultural shows and local<br>músic (Tourist observation) |

Cultural events music (Tourist observation)

A11.

I will choose (check [X] one only): Destination A \_\_\_\_\_

.

Destination B

Destination B \_\_\_\_\_ I will choose (check [X] one only): Destination A \_\_\_\_\_

ACCOMMODATION : A Family home (creole style cooking) A Family home (creole style cooking) Type, Feature American plan - rates include three American plan - rates include three meals/day meals/day \$ 1,100 Price (\$ Can.) \$ 1,750 Island, 20 min. walk to beach, On hill, overlooking beach, 5 min. walk Location (to beach) overlooking forest and ocean away. Location (to National No national park on island On edge of national park Park) Surroundings Siz - 4 storey hotels and apartment Six - 4 storey hotels and apartment buildings within 10 mic. walk buildings within 10 min. walk **ACTIVITIES:** ן ה 士 United G Ŷ 6 3 /1\ ٨ Y Two-hour walk (half uphill) to waterfall Two-hour walk (half uphill) to Attractive hiking trails waterfall and natural pool. and natural pool Weekly night-time street festligt Weekly outdoor cultural shows and local (Tourist participation)

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather filland vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your last vacation.

| A12.                           | DESTINATION_A  | DESTINATION B  |  |  |  |
|--------------------------------|--|--|--|--|--|
| ACCOMMODATION :<br>Type        | A 200+ room hotes  | A 30-40 room "cottage sigls" hotel<br>complex                          |  |  |  |
| Festure                        | All facturing- unlimited food/drinks (no tips)                         | All Inclusive- unlimited food/drinks (80<br>tips)                      |  |  |  |
| Price (\$ Can.)                | \$ 1,750   | \$ 7,250   |  |  |  |
| Location (to beach)            | Across 2-lane main read from beach                                     | fatand, 20 min. walk to beach,<br>overlooking forest and ocean         |  |  |  |
| Location (to National<br>Park) | No national park on island   | 15 mla driva to national park  |  |  |  |
| Surroundings                   | Six - 4 ecorey hotels and apartment<br>buildings within 10 min. walk   | six - 10 storey hotels within 10 min.<br>walk                          |  |  |  |
| ACTIVITIES :                   |  |  |  |  |  |
|                                | 🕅 dio 💻  |  |  |  |  |
| Attractive hiking trails       | Two-hour walk (half uphili) to waterfall and natural scol              | One-hour walk on even path through wildlife sanctuary                  |  |  |  |
| Cultural events                | Weekly outdoor cultural shows and local<br>music (Tourist observation) | Weekly outdoor cultural shows and local<br>music (Tourist observation) |  |  |  |

٠

I will choose (check [X] one only): Destination A \_\_\_\_\_ Destination B \_\_\_\_\_

Suppose the two destinations A and B described below are the only alternatives available for your next warm-weather filand vacation. Please check the alternative you will most likely choose, assuming you take it with the same people as your last vacation.

•

| AS.                            | DESTINATION_A  | DESTINATION B  |
|--------------------------------|--|--|
| ACCOMMODATION :<br>Type        | A 200+ room holel  | A 30-40 room "collage sists" holel<br>complex                  |
| Feature                        | American plan - rates include three<br>meals/day               | American pion- rotes include three<br>meals/day                |
| Price (\$ Can.)                | \$ 1,600   | \$ 1,100   |
| Location (to beach)            | feland, 20 min. walk to beach,<br>overlooking forest and ocean | Across 2-lans main road from beach                             |
| Location (to National<br>Park) | 15 min c., e to national park                                  | 15 min drive to national park                                  |
| Surroundings                   | Natural landscape, zo other development<br>within 10 min. walk | Natural landscape, an other development<br>within 10 min. walk |
| ACTIVITIES :                   |  | <ul> <li>€</li></ul>   |
| Attractive biking trails       | Ose-hour walk on even path through wildlife sanctuary          | One-hour walk on level ground through virgin forest.           |
| Cultural events                | Weekly night-time street festival (Tourist participation)      | Weekly night-time street festival<br>(Tourist participation)   |

I will choose (check [X] one only): Destination A \_\_\_\_\_ Destination B \_\_\_\_\_



# GRENADA BOARD OF TOURISM & McGILL UNIVERSITY

## VISITOR EXPENDITURE SURVEY

# CONFIDENTIAL.

We are currently carrying out a study of the economic and environmental impacts of tourism development in Grenada, the results of which will be useful for the future planning of the tourist industry and the national economy. An integral part of this important study is a survey of visitors to our country.

We hope that you will be willing to assist us in this survey. We must stress that everything you write will be treated in the strictest confidence. You will notice that we do not ask for your name or address.

As an incentive, we offer you a chance to win a return airline ticket to Grenada and free accommodation for seven nights at a luxurious hotel. Please complete the questionnaire as best you can and till in the address label attached.

Many thanks for your participation.

| 1.Where do you live 1<br>U.S.A<br>Canada<br>U.K<br>Other Europe<br>Caribbean<br>Other   | 7<br>[]<br>[]<br>[]<br>[]                   | State<br>Province<br>Country<br>specify   | ·  |                       | <br>  | 2. Purpose of visit<br>Vacation<br>Business<br>Visiting friends<br>or relatives   | 1?<br>[/]<br>[]                               |
|---|---|---|--|-----------------------|---|---|---|
| 3.Occupation  |   | 4. Sex Male<br>Fem  | ale  |                       | []<br>[9  | Other<br>5a. Is this your fin<br>overseas ? Y   | []<br>st vacation<br>es []<br>o []            |
| 5b.lf No, how often de<br>vacation overseas?  | ) you<br>                                   | 6a. Is this yo<br>Caribbean va  | our first<br>acation ?   | Yes<br>No             | []<br>[]  | 6b. How many tim<br>you been to the C   | anbbean?                                      |
| 7a. Is this your first<br>vacation in Grenad<br>Yes   | a?.<br>[]                                   | 7b. How mai<br>have you vis<br>Grenada bel  | ny times<br>ited<br>ore?   |                       |   | 8. Which other islar<br>in this trip?. <u>Nc</u>  | nds are included                              |
| 9. In which age group<br>you? Under 18<br>18 - 25<br>26 - 35<br>36 - 45<br>4£ 55<br>56 - 65<br>65 and over  | are [] [] [] [] [] [] [] [] [] [] [] [] []  | 10. How mar<br>did you spen<br>in Grenada?<br>12. What is y<br>income befor<br>Jnder 10,000<br>10 - 19,999,<br>20 - 29,999,<br>30 - 39,999,<br>40 - 60,000+ | ny days<br>d<br>vour annu<br>re taxes?<br>0.00<br>00<br>00<br>00<br>00 | al family<br>(State C | urrency) [] [] [] [] [] [] [] [] [] [] [] [] [] | 11. Level of educa<br>Some high school<br>High school<br>Some college<br>College<br>University  | tion attained?.<br>[]<br>[]<br>[]<br>[]<br>[] |
| 13. How impo<br>Using a scale   | rtant wen<br>of 1 (tota                     | e each of thes<br>Illy unimportan   | e in your<br>tt] to 7 [e:<br><u>3</u>                                  | decision<br>ktremely  | to visit (<br>importan<br><u>5</u>              | Grenada?<br>4].<br>_67  | •   |
| Natural Beauty<br>Peace and qui<br>Unspoiled env<br>Special events<br>Sailing<br>Water sports<br>Friendly peopl<br>Shopping<br>Quality service<br>Attractive beact<br>Cost of holiday<br>Other specity_ | y<br>iet<br>ironment<br>e<br>e<br>ches<br>y |   |  |                       |   | []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     []       []     [] |   |

14. How important were each of these sources of information in helping you decide your choice of destination(s)?. Using a scale of 1 [totally unimportant] to 7 [extremely important].

•

•

.

.

16. Did you travel on a pre-paid package?

|                   | 1   | 2     | 3           | 4 -         | 5   | 6       | 7      |  |
|-------------------|-----|-------|-------------|-------------|-----|---------|--------|--|
| Relatives         | E   | []    | []          |             | []  | 11      | 11     |  |
| Friends           | ti  | ti    | i i         | ii          | ii  | ìi      | i i    |  |
| A travel agent    | 1 i | - ť í | Ē Ī         | ii          | i i | ii      | i i    |  |
| A Grenada Tourist |     |       | •           | • •         | ••• | • •     | • •    |  |
| office abroad     | []  | []    | []          | []          | []  | []      | [1]    |  |
| News Papers       | []  | 11    | <u>[1</u> ] | Ē Ī         | ()  | ti.     | i i    |  |
| Travel            |     |       |             | • -         | • - |         |        |  |
| magazines         | []  | []    | []          | []          | []  | 11      | []     |  |
| T.V. features     | []  | - [ ] | - t I .     | . <u>[]</u> | []  | - ( ) - | Ē İ -  |  |
| A tour            |     |       |             |             |     |         |        |  |
| operator          | []  | []    | []          | E 1         | []  | []      | - [] · |  |
| Other (specify)   |     |       |             |             |     |         |        |  |
|                   | []  | []    | []          | []          | []  | []      | []     |  |

14b. What were the alternative destinations you considered when deciding on and planning this trip?

| 15. | How far in advance did you plan this trip? | under 1 month [ ] | 1 - 3 months | [] |
|-----|--|-------------------|--------------|----|
|     | 3 - 6 months $\sqrt[[v]]$                  | 6 - 12 months [ ] | 1 + years    | [] |

17. How much did you spend on the following items? (Exclude the cost of the pre-paid package)

|       |                                |      | • • • • • • • • • • • • • • • • • • • |  |
|-------|--------------------------------|------|---------------------------------------|--|
|       | res[]                          |      |                                       |  |
| 1     | No [] If, yes                  |      |                                       |  |
|       |                                |      | Accommodation (without meals)         |  |
| (a) : | Name the package?              |      | Other meals                           |  |
| (b)   | How many people included       | —    | Bar Refreshment                       |  |
| (c)   | Did it included?               | _    | Taxi                                  |  |
| Ö.    | Air transportation             | []   | Car Rental                            |  |
| (ii)  | Accommodation                  | i i  | Yacht Charter                         |  |
| (iii) | Meals (Breaklast only)         | i i  | Land Tours                            |  |
| (iv)  | Meals (Two meals)              | i i  | Entertainment                         |  |
| (v)   | Meals (Three meals)            | ī i  | Shopping (Duty free)                  |  |
| (iv)  | Transportation                 | ίi – | Groceries                             |  |
|       | specity                        | ίi – | Handcratt and spices                  |  |
| (vi)  | Tours                          | ti - | Sports                                |  |
|       | specity                        | []   | Other Specity                         |  |
| (v)   | Other                          | 11   | What was your total                   |  |
|       | specify                        |      | expenditure in Grenada ?              |  |
| (d)   | How much did the package cost? |      | How many people does this include?_   |  |

18. Rate the following aspects of your trip on a scale of 1 to 7 where [1] = very dissatisfied and [7] = very satisfied.

|   |             | 1     | 2     | 3     | 4        | 5     | 6       | 7         |   |   |
|---|-------------|-------|-------|-------|----------|-------|---------|-----------|---|---|
| Airline Conne                               | ctions      | TT.   | Ē     | Ē     | 1        | Ť     | Ē       | Ē         |   |   |
| Immicration a                               | nd Customs  | ii    | ii    | ii    | i i      | i i   | i i     | î î       |   |   |
| Accommodati                                 | 00          | ii    | i i   | ίi    | i i      | i i   | i i     | t i –     |   |   |
| Restaurants                                 |             | ΪÌ    | 11    | Ĩ Ì   | Ē        | Ĺ Í   | - È Ì - | Ē.        |   |   |
| Entertainment                               | ł           | i i – | Ē Ī   | ΪÌ.   | ( j      | i i   | Ĺ ĺ     | 11        |   |   |
| Night Life                                  |             | Ē Ī - | []    | ίÌ.   | 11       | ŧ i   | E 1     | Ē Ī —     |   |   |
| Yachting                                    |             | []    | 11    | 11    | 11       | 11    | []      | []        |   |   |
| Water Sports                                |             | ti.   | []    | []    | []       | []    | []      | []        |   |   |
| Taxi Service                                |             | []    | 11    | []    | []       | []    | E1      | []        |   |   |
| Natural Attrac                              | tions       | 11.   | 11    | []    | 11       | []    | E 1     | []        |   |   |
| Shopping                                    |             | []    | []    | []    | 11       | 11    | E 1     | ti        |   |   |
| Friendliness c                              | f People    | 1     | 11 .  | []    | []       | 11    | []      | 11        |   |   |
| Cost of Accor                               | nmodation   | ()    | 11    | 11    | ()       | Ĩ.    | Ē İ     | 1 i       |   |   |
| Cost of Food                                | and Drinks  | 11    | []    | 11    | Ē Ì      | ()    | ĺ ĺ     | ti        |   |   |
| Quality of Bea                              | iches       | E ]   | 11    | 1     | []       | []    |         | []        |   |   |
| Quality of the                              | Environment | []    | []    | []    | E 1      | []    | []      | L İ       |   |   |
|   |             |       |       |       |          |       |         |           |   |   |
| 19. Will you recommend Grenada to a friend? |             |       | Defin | itely | []       | Proba | ably    | []        | ſ |   |
|   |             |       |       | Proba | ably Not | ίi.   | Defin   | itely Not | ŧ | l |
|   |             |       |       |       |          |       |         |           |   |   |

20. Please use this page to expand upon any issue or points you feel strongly about concerning your holiday experience in Grenada and the tourist product that the island offers?

THANK YOU FOR DOING SUCH A COMPLETE JOB WE DO APPRECIATE YOUR CONTRIBUTION

.

### **APPENDIX 3**

## **REGIONAL INCOME GENERATION MODEL**

In the following discussion, the model used in the study is outlined. The model is a modification of that originally introduced by Archer and Owen (1971), refined by Henderson and Cousins (1975) and Milne (1987c).

The multiplier process may be expressed simply as follows:

$$K_{r} = a + b + c^{(1)}$$

where

K<sub>r</sub> = regional income multiplier

- a = direct regional income generation per \$1 of tourist expenditure
   i.e., factor incomes generated within businesses which receive
   tourist expenditure directly.
- b = indirect regional income generation per \$1 of tourist expenditure
   i.e., factor incomes generated in other businesses whose turnover
   is indirectly augmented with purchases made by the original
   businesses.
- c = induced regional income generation per \$1 of tourist expenditure i.e., factor incomes generated as the result of expenditure by residents of the region whose income has previously been increased through direct or indirect income generated by tourism.

More formally, these expressions may be stated thus:

## a) Direct Regional Income Generation

$$a = \sum_{j=1}^{J} \sum_{i=1}^{I} K_{ji} Y d_i$$
 (2)

where

- $K_{ji}$  = the proportion of \$1 expenditure by the j<sup>th</sup> type of tourist in the i<sup>th</sup> sector
- $Yd_i =$  the increase in factor incomes in the i<sup>th</sup> sector per \$1 revenue in the i<sup>th</sup> sector derived from direct tourist expenditure in that sector.

## b) Indirect Regional Income Generation

$$b = \sum_{j=1}^{J} \sum_{i=1}^{I} K_{ji} (Y_i - Yd_i)$$
(3)

where

 $Y_i$  = the increase in factor incomes in the i<sup>th</sup> sector per \$1 revenue in the i<sup>th</sup> sector plus the increase in factor incomes (per \$1 revenue in these sectors) in the various sectors supplying inputs to the i<sup>th</sup> sector.

## c) Induced Regional Income Generation

$$c = (a+b) - \frac{1}{1 - L \sum_{i=1}^{I} X_i Z Y_i}$$
(4)

where

- L = average propensity to consume with disposable income
- Z = the proportion of total consumer spending which is spent directly within the region
- X = the proportion of total consumer spending by residents in the i<sup>th</sup> sector within the region.

The complete model to measure regional income generation - includes direct, indirect and induced income generation - can be expressed as follows:

$$G_{r} = \sum_{j=1}^{J} \sum_{i=1}^{I} N_{j} Q_{j} K_{ji} Y_{i} \left( \frac{I}{1 - L \sum_{i=1}^{I} X_{i} Z Y_{i}} \right)^{(5)}$$

where

| G,             | = | total annual income generation within the region from tourism          |
|----------------|---|--|
| N <sub>j</sub> | = | the number of days in the region spent by the $j^{th}$ type of tourist |
| Q <sub>j</sub> | = | the total daily expenditure by the j <sup>th</sup> type of tourist.    |

The first two terms in the model  $(N_j \text{ and } Q_j)$  together represent the multiplicand, while the remainder of the expression specifies the multiplier process. In the paragraphs that follow, the component terms of the model are discussed.

## 1) Total Number of Tourists (N)

In order to derive the multiplicand, the first element which must be known is the total number of tourists. As each tourist type has a different size and pattern of expenditure, weighting is necessary before a true regional multiplier can be estimated. Thus it is necessary to calculate the total number of days spent for each tourist type.

## 2) The Total Daily Tourist Expenditure (Q)

The second element of the multiplicand is the average daily total expenditure; this again must be known for each type of tourist and is discussed in further detail in Chapter 3.

# 3) Regional Income Generation Co-efficient (Y)

At the heart of the multiplier is the evaluation of the regional income

generation (R.I.G) by businesses. This will vary from business to business as it is dependent upon factors such as the propensity to import and the degree to which the establishment is labour intensive. In order that this factor may accumulate the R.I.G. at every round in the multiplier process, the Y co-efficient for each type of business includes not only the regional income, which is generated exclusively within itself (Yd), but also the regional income which is similarly generated in other businesses by the subsequent flow of transactions.

The formulae used to calculate the R.I.G. for any business is as follows:

$$Y_{a} = \frac{W(1 - h - t_{w}) + P(1 - t_{p}) + F(1 - t_{w}) + \sum_{i=1}^{I} S_{ai} Y_{i}}{D_{a}}$$
(6)

where

| =  | regional income generation co-efficient for a business                           |  |  |
|--|--|--|--|
| =  | gross salaries and wages paid to residents in the region                         |  |  |
| =  | deduction rate on wages and salaries (national insurance, pensions,              |  |  |
|  | etc.)  |  |  |
| =  | tax rate on wages and salaries   |  |  |
| =  | profit to residents in the region  |  |  |
| =  | tax rate on profits  |  |  |
| =  | rent to residents in the region  |  |  |
| =  | cost payment from a business to the i <sup>th</sup> type of business             |  |  |
| =  | regional income generation co-efficient for the i <sup>th</sup> type of business |  |  |
| =  | total turnover in a business   |  |  |
| NB: The payment of taxes to government is modelled as a cost pay |  |  |  |
| supplier.  |  |  |  |
|  | =<br>=<br>=<br>=<br>=<br>=<br>The passupplie                                     |  |  |

For practical purposes, the i<sup>th</sup> sector in the S term must be specified. The different types of business groupings will conduct transactions with a wide range of other

businesses. This range will vary with each type of business.

For the purpose of this study, suppliers were broadly categorized by the following types:

- 1. Retail suppliers (food, groceries, etc)
- 2. Wholesale suppliers and manufacturers
- 3. Transport land, air and sea
- 4. Retail suppliers (other goods not included in 1)
- 5. Finance banking, accounting, lending
- 6. Government utilities and services (includes payments of taxes to government)
- 7. Construction
- 8. Advertising
- 9. Miscellaneous

Such a categorization enabled further desegregation into smaller subcategories if desired. The categorization is based on business rather than commodity type because this negates any problems associated with joint production.

## 4. Proportional Pattern of Tourist Expenditure (K)

Any R.I.G. co-efficient derived must be used in conjunction with the distribution pattern of tourist expenditure. This pattern should be indexed so that each type of expenditure is expressed as a fraction of \$1. By multiplying each fraction of the R.I.G. co-efficient for the corresponding type of business, summation will yield the R.I.G. by the tourist.

However, each type of tourist has a different pattern of expenditure, spending a different proportion of his sum upon the various items included in it. As these distinctive patterns produce differences between the multiplier co-efficients for the various types of tourist, K is therefore one of the most sensitive elements in the model.

### 5. Average Propensity to Consume

Only income which is actually spent by residents can affect subsequent income generation in the region and L thus expresses the propensity to consume out of disposable income. Strict adherence to Keynesian theory requires that the marginal propensity to consume be used but as the data available for calculating this are not available, some educated assumptions are required as to the average propensity to consumer.

## 6. Pattern of Resident Consumer Expenditure

Residents pass on the income they derived from tourist expenditure to the businesses supplying them with goods and services. This pattern of consumer expenditure will also have to be derived from educated assumptions as no consumer expenditure data exists for the Grenada.

### 7) **Proportion of Resident Consumer Expenditure Within the Region (Z)**

As the only elements of the resident consumer expenditure pattern (X) which can contribute to R.I.G. are those payments which are made within the region, i.e. direct expenditure by consumers to suppliers residing within the Cook Islands. Given the isolation of the region it is assumed that all money spent by consumers will originally flow to a business within the region.

## **REGIONAL EMPLOYMENT GENERATION MODEL**

A supplementary feature of this regional income multiplier is that it permits estimates to be made of the likely effect of tourist expenditure upon the level of employment in the region. Once a relationship has been established between turnover and employment, it is possible to translate a regional income multiplier into a regional employment multiplier. This will accumulate the employment which is created at successive rounds as the flow of tourist-originated expenditure circulates.

The assumption that a marginal increment of turnover will always produce

a proportionate increase in employment will not always be true as different firms will have different marginal propensities to employ following an increase in turnover. However, when averaged over all firms of a certain business type, this becomes a reasonable assumption. The use of R.E.G. models has been made in Britain with two of the better examples being the work of Henderson and Cousins (1975) and Vaughan (1977).

The simple regional employment multiplier may be stated as follows:

$$K_{e} = \alpha + \beta + \gamma (7)$$

where

| K <sub>e</sub> | = | regional employment multiplier                               |
|----------------|---|--|
| α              | = | direct employment generated per \$1 of tourist expenditure   |
| ß              | = | indirect employment generated per \$1 of tourist expenditure |
| γ              | = | induced employment generated per \$1 of tourist expenditure. |

Components  $\alpha$ ,  $\beta$  and  $\gamma$  have similar functions to those detailed for factors a, b and c of the simple income multiplier (see equations 1, 2, 3 and 4). The complete regional employment generation model may be expressed as follows:

$$T_{r} = \sum_{j=1}^{J} \sum_{i=1}^{I} N_{j} Q_{j} K_{ji} E_{i} + \left[ \sum_{j=1}^{J} \sum_{i=1}^{I} N_{j} Q_{j} K_{ij} Y_{i} \left( \frac{I}{1 - L \sum_{i=1}^{I} X_{i} Z_{i} Y_{i}} \right) \right] \sum_{i=1}^{I} X_{i} E_{i} (8)$$

where

 $T_r = total$  employment generated within the region from tourism

E<sub>i</sub> = increase in employment in the i<sup>th</sup> sector per \$1 revenue in the i<sup>th</sup> sector plus the increase in employment (per \$1 revenue in these sectors) in the various sectors supplying inputs to the i<sup>th</sup> sector. Other terms as previously defined
# **REGIONAL EMPLOYMENT GENERATION CO-EFFICIENT**

:

This co-efficient has the same characteristics as the R.I.G. co-efficient (Y) defined in equation (6). For each business not only must employment generated within itself be taken into account but also employment created in other businesses to which it makes payments for goods and services rendered.

# APPENDIX FOUR

1988: DAILY EXPENDITURE ESTIMATES BY COUNTRY OF RESIDENCE AND ACCOMODATION TYPE

٠

,

### APPENDIX 4A 1988: DAILY SPENDING BY U.S. VISITORS BY ACCOMMODATION TYPE (USS)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS | OTHER  | AVERAGE     | ţ    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|--------|-------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       | _              |         |        |             |      |
| ACCOMMODATION           | 95,57            | 80.90             | 39.14            | 26.76                 | 0.00           | 3.79    | 10.26  | 42.74       | 38   |
| MEALS                   | 33.32            | 26.91             | 13.66            | 22.37                 | 0.00           | 15.67   | 18.11  | 21.67       | 19   |
| YACHTING                | 18.96            | £.10              | 0.00             | 1.14                  | 0.00           | 0.03    | 64.65  | 15.48       | 14   |
| TAXI                    | 14.61            | 13.82             | 10.70            | 9.29                  | 0.00           | 6.17    | 9,00   | 10.60       | 10   |
| ENTERTAINMENT           | 7,81             | 743               | 209              | 1.29                  | 0.00           | 2.59    | 3.48   | 3.45        | ß    |
| SHOPPING                | 8.00             | 8.83              | 5.68             | 3252                  | 0.00           | 10.97   | 15.55  | 13.62       | 12   |
| OTHER                   | 473              | 3.60              | 255              | <.65                  | 0.00           | 223     | 5.42   | 3.86        | ω    |
| TOTAL EXPENSES          | 183.01           | 145,58            | 74.01            | 96.02                 | 0.00           | 41.45   | 126.46 | nr <b>c</b> | 1 00 |

#### APPENDIX 4B 1988: DAILY SPENDING BY CANADIAN VISITORS BY ACCOMMODATION TYPE (USS)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | AVERAGE<br>EXPENSES | *   |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|---------------------|-----|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |       |                     |     |
| ACCOMMODATION           | 35.36            | 71.93             | NS               | 38.17                 | NS             | 4.14                | NS    | 37.40               | 48  |
| MEALS                   | 20.76            | 19.87             | NS               | 21.73                 | NS             | 11.61               | NS    | 18.49               | 24  |
| YACHTING                | 134              | 216               | NS               | 0.36                  | NS             | 1.26                | NS    | 1.28                | œ   |
| тахі                    | 7,99             | <u>8</u> 47       | NS               | 8.19                  | NS             | 8.76                | NS    | 8.35                | 11  |
| ENTERTAINMENT           | 2.70             | 0.96              | NS               | 1.40                  | NS             | 4.16                | NS    | 231                 | Ø   |
| SHOPPING                | 9.13             | 6.68              | NS               | 5.34                  | NS             | 10.64               | NS    | 7,95                | 10  |
| other                   | 243              | 2.04              | NS               | 929                   | NS             | 458                 | NS    | 241                 | 8   |
| TOTAL EXPENSES          | 79.71            | 112.12            | NS               | 75,78                 | NS             | <b>45.15</b>        | NS    | 78_19               | 100 |

### APPENDIX 4C 1988: DAILY SPENDING BY U.K. VISITORS BY ACCOMMODATION TYPE (USS)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | AVERAGE<br>ENPENSES | ę    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|---------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |       |                     |      |
| ACCOMMODATION           | \$1.09           | 90,90             | NS               | NS                    | NS             | 122                 | NS    | 50.07               | 50   |
| MEALS                   | 28.38            | 27.06             | NS               | NS                    | NS             | 10.47               | NS    | 21.97               | 2    |
| YACHTING                | 2.80             | :.50              | NS               | NS                    | NS             | 0.00                | NS    | 1.0                 | 01   |
| TAXI                    | 8.55             | 13.37             | NS               | NS                    | NS             | 4.37                | NS    | 8.76                | 00   |
| ENTERTAINMENT           | 5.81             | 0.92              | NS               | NS                    | NS             | 5.55                | NS    | 4.09                | 04   |
| SHOPPING                | 6.27             | 7,44              | NS               | NS                    | NS             | 9.05                | NS    | 7,59                | 06   |
| OTHER                   | 4.56             | 7,03              | NS               | NS                    | NS             | 3.91                | NS    | 5.37                | 05   |
| TOTAL EXPENSES          | 107,46           | 154.83            | NS               | NS                    | NS             | 35.57               | NS    | 99,29               | 1 90 |
|                         |                  |                   |                  |                       |                |                     |       |                     |      |

NS - NOT SUFFICIENT DATA

### APPENDIX 4D

### 1988: DAILY SPENDING BY EUROPEAN VISITORS BY ACCOMMODATION TYPE (USS)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | AVERAGE<br>EXPENSES | 5.  |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|---------------------|-----|
| EXPENDITURE ON:         |                  |                   |                  |                       |                | · •                 |       |                     |     |
| ACCOMMODATION           | 46.18            | 45.12             | NS               | NS                    | NS             | NS                  | NS    | 45.65               | 45  |
| MEALS                   | 37.11            | 19.33             | NS               | NS                    | NS             | NS                  | NS    | 28.22               | 28  |
| YACHTING                | 175              | 0.00              | NS               | NS                    | NS             | NS                  | NS    | 0.57                | 01  |
| TAXI                    | 16.12            | 836               | NS               | NS                    | NS             | NS                  | NS    | 12.24               | 12  |
| ENTERTAINMENT           | 110              | 1.01              | NS               | NS                    | NS             | NS                  | NS    | 1.05                | 01  |
| SHOPPING                | 10.35            | 808               | NS               | NS                    | NS             | NS                  | NS    | 9.22                | 09  |
| OTHER                   | 5.97             | 243               | NS               | NS                    | NS             | NS                  | NS    | 4.20                | 04  |
| TOTAL EXPENSES          | 118.57           | 8433              | NS               | NS                    | NS             | NS                  | NS    | 101.45              | 100 |

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | AVERAGE<br>EXPENSES | s.   |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|---------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |       |                     |      |
| ACCOMMODATION           | 92.74            | \$7.05            | NS               | NS                    | NS             | 5.56                | NS    | 61.78               | 46   |
| MEALS                   | 28,44            | 24.58             | NS               | NS                    | NS             | 21.56               | NS    | 24.86               | 18   |
| YACHTING                | 0.00             | 2.41              | NS               | NS                    | NS             | 0.00                | NS    | 0.80                | 01   |
| TAXI                    | 1333             | 18.38             | NS               | NS                    | NS             | 10.45               | NS    | 14.12               | 10   |
| ENTERTAINMENT           | 653              | 4.75              | NS               | NS                    | NS             | 163                 | NS    | 430                 | ۵    |
| SHOPPING                | 1263             | 15.93             | NS               | NS                    | NS             | 26.50               | NS    | 18.35               | 14   |
| OTHER                   | 11.19            | 18                | NS               | NS                    | NS             | 16.44               | NS    | 11.04               | 05   |
| TOTAL EXPENSES          | 165.06           | 158.58            | NS               | NS                    | NS             | 82.14               | NS    | 135.26              | 1 00 |

### APPENDIX 4E 1988: DAILY SPENDING BY CARIBBEAN VISITORS BY ACCOMMODATION TYPE (USS)

NS - NOTSUFFICIENTDATA

.

.

•

# APPENDIX FIVE

### 1992: DAILY EXPENDITURE ESTIMATES BY COUNTRY OF RESIDENCE AND ACCOMODATION TYPE

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | AVERAGE<br>EXPENSES | 5    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|---------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |       |                     |      |
| ACCOMMODATION           | 6234             | 86.93             | 52.42            | 31,18                 | 15.83          | 0.83                | 18,96 | 38.36               | 35   |
| MEALS                   | 30.33            | 34.07             | 25.37            | 10.69                 | 11.24          | 8.17                | 26.68 | 21.79               | 20   |
| YACHTING                | 11.55            | 23.85             | 14.01            | 26.33                 | 6.81           | 0.04                | 45.24 | 18.26               | 16   |
| BAR                     | 6.99             | 9.08              | 6.64             | 4.54                  | 3.13           | 5.22                | 7.22  | 6.12                | 06   |
| TAXI                    | 7,76             | 7.09              | 6.41             | 299                   | 249            | 0.99                | 5.13  | 4.69                | 04   |
| CAR RENTAL              | 3.46             | 4,70              | 3.92             | 3.30                  | 3.03           | 249                 | 182   | 13                  | C3   |
| TOURS                   | 1.83             | 141               | 269              | 246                   | 1.18           | 3.16                | 3.38  | 1.87                | œ    |
| ENTERTAINMENT           | 0.15             | 0.48              | 1.11             | 0.34                  | 0.66           | 196                 | 1.17  | 1.12                | 10   |
| DUTY-FREE SHOPPING      | 4.96             | 4.48              | 5.95             | 3.20                  | 244            | 2.04                | 4.69  | 3.97                | 04   |
| GROCERY SHOPPING        | 248              | 252               | 3.06             | 3.67                  | 267            | 1.13                | 10.02 | 3.65                | 03   |
| SPICE AND CRAFT         | 7.82             | 5.14              | 5.58             | 4.02                  | 2.18           | 5.21                | 423   | 4.88                | 04   |
| SPORTS                  | 0.06             | 0.75              | 1.84             | <b>a</b> 23           | 0.54           | 1.43                | 1.80  | 0,95                | 01   |
| OTHER                   | 5.02             | L)N               | ц<br>ц           | 0.72                  | 143            | 3.20                | 0.81  | 1.96                | œ    |
| TOTAL EXPENSES          | 144,74           | 181.89            | 130.32           | 99.67                 | 53.63          | 34.86               | 13117 | 110.90              | 1 00 |

APPENDIX 5A 1992: DAILY SPENDING BY U.S. VISITORS BY ACCOMMODATION TYPE (USS)

APPENDIX 5B

1992: DAILY SPENDING BY CANADIAN VISITORS BY ACCOMMODATION TYPE (USS)

•

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER  | AVERAGE<br>EXPENSES | 5    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|---------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |        |                     |      |
| ACCOMMODATION           | 49,73            | NS                | 31.76            | 4.2                   | 26.00          | NS                  | 27.84  | 35.72               | 38   |
| MEALS                   | 27.97            | NS                | 20.43            | 10.52                 | 9.C            | NS                  | 21.28  | 17.92               | 19   |
| YACHTING                | 0.25             | NS                | 1.14             | 7.14                  | 0.00           | NS                  | 33.05  | 8.32                | 09   |
| BAR                     | 667              | NS                | 9.99             | 213                   | 465            | NS                  | 6.70   | 6.03                | 06   |
| IXAT                    | \$.71            | NS                | 220              | 702                   | 254            | NS                  | 5.42   | 3,79                | 04   |
| CAR RENTAL              | 123              | NS                | 3.89             | 264                   | 3.36           | NS                  | 149    | 292                 | 83   |
| TOURS                   | וכו              | NS                | 10               | 10                    | Q.53           | NS                  | 3.58   | 2.06                | 82   |
| ENTERTAINMENT           | 0.29             | NS                | 0.21             | 1.90                  | 0.89           | NS                  | 0.00   | 0.66                | 01   |
| DUTY-FREE SHOPPING      | 4.16             | NS                | 411              | 10.11                 | 4,94           | NS                  | 7,78   | 622                 | 07   |
| GROCERY SHOPPING        | 6.74             | NS                | 3.09             | 292                   | 9.88           | NS                  | 6.90   | 5.91                | 06   |
| SPICE AND CRAFT         | 2.78             | NS                | 10               | 3.04                  | 0.00           | NS                  | 5.55   | 2.88                | ø    |
| SPORTS                  | 0.27             | NS                | 0.54             | 0.05                  | 0.00           | NS                  | 0.00   | 0.18                | 00   |
| OTHER                   | <b>&lt;</b> 10   | NS                | 146              | 160                   | <b>4</b> 22    | NS                  | 124    | 2.54                | 03   |
| TOTAL EXPENSES          | 113.24           | NS                | 83.28            | 91.81                 | 66.53          | NS                  | 120.68 | 95.15               | ٥٥ ، |

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | AVERAGE | ¢         |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|---------|-----------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |       |         |           |
| ACCOMMODATION           | 32.66            | 65.47             | NS               | NS                    | 30.35          | 0.26                | NS    | 32,18   | <u>37</u> |
| MEALS                   | 25.53            | 25.50             | NS               | NS                    | 10.00          | 8.50                | NS    | 19.15   | 2         |
| YACHTING                | 0.00             | 9,38              | NS               | NS                    | 1.41           | 0.08                | NS    | 272     | 03        |
| BAR                     | 5.35             | 8.07              | NS               | NS                    | 4.01           | 86.5                | NS    | 6.28    | 07        |
| TAXI                    | 2.85             | 5.76              | NS               | NS                    | 11.05          | <b>a</b> .71        | NS    | 6.60    | 06        |
| CAR RENTAL              | 3.78             | 5.11              | NS               | NS                    | 7.88           | 3.01                | NS    | 4.95    | Qю.       |
| TOURS                   | 3.75             | \$.77             | NS               | NS                    | 1,45           | 0.58                | NS    | 289     | e)        |
| ENTERTAINMENT           | 14               | 1.22              | NS               | NS                    | 1.44           | 0.82                | NS    | 1.23    | 01        |
| DUTY-FREE SHOPPING      | 0.35             | 4.56              | NS               | NS                    | 3.67           | 1.31                | NS    | 247     | 03        |
| GROCERY SHOPPING        | 0.00             | 3.93              | NS               | NS                    | 2,40           | 7.11                | NS    | 3.36    | 64        |
| SPICE AND CRAFT         | 3.24             | 4.20              | NS               | NS                    | 411            | 1.71                | NS    | 3.32    | 04        |
| SPORTS                  | 0.00             | 276               | NS               | NS                    | 0.00           | 0.08                | NS    | ۵72     | 01        |
| OTHER                   | 0.00             | ቢዓኝ               | NS               | NS                    | 2.07           | 1.67                | NS    | 1.17    | 01        |
| TOTAL EXPENSES          | 78.93            | 142.77            | NS               | NS                    | 86.83          | 39.58               | NS    | 87.03   | 1 00      |

APPENDIX 5C 1992: DAILY SPENDING BY U.K. VISITORS BY ACCOMMODATION TYPE (USS)

NS NOT SUFFICIENT DATA

APPENDIX 5D

1992: DAILY SPENDING BY EUROPEAN VISITORS BY ACCOMMODATION TYPE (USS)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | AVERAGE<br>EXPENSES | 4.  |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|---------------------|-----|
| EXPENDITURE ON:         | -                |                   |                  |                       | -              |                     | _     |                     | _   |
| ACCOMMODATION           | 33.54            | 91.42             | 68.00            | NS                    | 27.67          | NS                  | NS    | 55.14               | 41  |
| MEALS                   | 31.29            | 41.36             | <u> </u>         | NS                    | 19.11          | NS                  | NS    | 29.66               | n   |
| YACHTING                | 6.41             | 0.40              | 7.14             | NS                    | 1,40           | NS                  | NS    | 3.84                | 03  |
| BAR                     | 10.16            | 10.77             | 10.69            | NS                    | 862            | NS                  | NS    | 10.06               | 06  |
| TAXI                    | 4.03             | 9.45              | 6.83             | NS                    | 14.27          | NS                  | NS    | B.64                | 06  |
| CAR RENTAL              | 14.41            | 603               | 111              | NS                    | 1.54           | NS                  | NS    | 5.77                | 04  |
| TOURS                   | 1.63             | 422               | 4.46             | NS                    | 1.62           | NS                  | NS    | 703                 | 62  |
| ENTERTAINMENT           | 1.02             | 1.93              | 0.00             | NS                    | 0.55           | NS                  | NS    | 0.96                | 01  |
| DUTY-FREE SHOPPING      | s.23             | 194               | 7.41             | NS                    | 8.16           | NS                  | ΝS    | 5.68                | 04  |
| GROCERY SHOPPING        | 1.27             | 1.79              | 245              | NS                    | 0.67           | NS                  | NS    | 1.54                | 01  |
| SPICE AND CRAFT         | 1.27             | 3.77              | \$.59            | NS                    | 5.85           | NS                  | NS    | 4.12                | 03  |
| SPORTS                  | 0.00             | 6.20              | 1.00             | NS                    | 157            | NS                  | NS    | 2.20                | 02  |
| OTHER                   | 7,54             | 2.08              | 1.54             | NS                    | 1.11           | NS                  | N\$   | 3.07                | œ   |
| TOTAL EXPENSES          | 118.00           | 181.33            | 143.14           | NS                    | 92.47          | NS                  | NS    | 133.74              | 100 |

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS | OTHER | AVERAGE<br>EXPENSES | 5    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|-------|---------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |         |       |                     |      |
| ACCOMMODATION           | NS               | 81.00             | NS               | 54.83                 | 24.94          | NS      | NS    | \$3.59              | 41   |
| MEALS                   | NS               | 35.05             | NS               | 31.23                 | 21.96          | 16.68   | NS    | 26.23               | 21   |
| YACHTING                | NS               | 0.00              | NS               | 0.37                  | 0.00           | 0,00    | NS    | 0.09                | 00   |
| BAR                     | NS               | 5.54              | NS               | 11.25                 | 4,95           | 24.40   | NS    | 9.04                | 07   |
| TAXI                    | NS               | 16.83             | NS               | 11.08                 | 9.80           | L12     | NS    | 9.71                | 06   |
| CAR RENTAL              | NS               | 0.00              | NS               | 259                   | 237            | 8.53    | NS    | 337                 | 03   |
| TOURS                   | NS               | 0.00              | NS               | 1.85                  | 0.87           | 0,00    | NS    | 0.68                | 01   |
| ENTERTAINMENT           | NS               | 14.28             | NS               | 101                   | 1.48           | 3.57    | NS    | 5.09                | 04   |
| DUTY-FREE SHOPPING      | NS               | 3.84              | NS               | 10.93                 | 5.50           | 2.39    | NS    | 5.67                | 05   |
| GROCERY SHOPPING        | NS               | 0.40              | NS               | 263                   | 2.87           | 293     | NS    | 2.21                | 02   |
| SPICE AND CRAFT         | NS               | 5.85              | NS               | 2.84                  | 0.98           | €76     | NS    | 3.61                | ω    |
| SPORTS                  | NS               | 0.00              | NS               | 0.00                  | 0.00           | 0.00    | NS    | 0.00                | 00   |
| OTHER                   | NS               | 2.85              | NS               | 7.85                  | 269            | 0.92    | NS    | 82.2                | ۵Ĵ   |
| TOTAL EXPENSES          | NS               | 165.64            | NS               | 138.46                | 78.41          | 55.30   | NS    | 122-85              | 1 10 |

APPENDIX 5E 1992: DAILY SPENDING BY CARIBBEAN VISITORS BY ACCOMMODATION TYPE (USS)

NS - NOT SUFFICIENT DATA

APPENDIX SF

1992 AVERAGE DAILY SPENDING BY ALL VISITORS BY ACCOMMODATION TYPE (USS)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS | OTHER  | AVERAGE | %    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|--------|---------|------|
| EXPENDITURE ON:         |                  |                   | _                |                       |                |         |        |         |      |
| ACCOMMODATION           | 44.57            | 81.20             | 50.73            | 37.21                 | 24,96          | 036     | 23.41  | 37.49   | 35   |
| MEALS                   | 28,78            | 34.01             | 24,23            | 13.60                 | 14.18          | 21.14   | 23.96  | 21.42   | 20   |
| YACHTING                | دى.              | 8.41              | 7.43             | 1673                  | 241            | 0.04    | 39.16  | 1125    | 11   |
| BAR                     | 7.29             | 8.37              | 9,11             | 334                   | 5.10           | 9,10    | 6.96   | 7.04    | 07   |
| TAXI                    | 5.09             | 9.78              | 5.15             | 705                   | 7.59           | 294     | S.27   | 5.55    | ¢    |
| CAR RENTAL              | <u>هت</u> ه      | 3.96              | 2.97             | 297                   | 3.95           | 4,68    | 2.66   | 3.77    | 04   |
| TOURS                   | 2.18             | 2.85              | 2.86             | 294                   | 1.19           | 0.25    | 3.48   | 225     | 02   |
| ENTERTAINMENT           | 0.72             | 445               | 0,44             | 112                   | 0.97           | 2.78    | 0.59   | 1.58    | 01   |
| DUTY-FREE SHOPPING      | 3.68             | 3.70              | 5.82             | 666                   | 4.80           | 1.91    | 6.24   | 4.69    | 04   |
| GROCERY SHOPPING        | 262              | 2.16              | 2.87             | 3.30                  | 3.90           | 172     | 8.46   | 3.86    | 04   |
| SPICE AND CRAFT         | 3.78             | 4,74              | 473              | دىد                   | 3.04           | 3.89    | 4.89   | 4.09    | 04   |
| SPORTS                  | 0.05             | 20                | 113              | 0,16                  | Q.53           | مده     | 0.90   | 0.52    | 01   |
| OTHER                   | 4.16             | 142               | 144              | 116                   | 273            | 1.93    | 1.03   | 1,97    | œ    |
| TOTAL EXPENSES          | 113.73           | 167,91            | 118.91           | 95,74                 | 74.57          | 432     | 126.02 | 105.77  | : 90 |

# APPENDIX SIX

### 1988: TOTAL VISITOR EXPENDITURE ESTIMATES BY COUNTRY OF RESIDENCE AND ACCOMODATION TYPE

.

. •

•

| APPENDIX 6A            |                           |                      |  |  |  |  |  |  |
|------------------------|---------------------------|----------------------|--|--|--|--|--|--|
| 1988 TOTAL SPENDING BY | U.S. VISITORS BY ACCOMMOD | ATION TYPE (USS'000) |  |  |  |  |  |  |

| ACCOMMODATION<br>TYPES | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER        | TOTAL<br>EXPENSES | ų   |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------------|-------------------|-----|
| EXPENDITURE ON:        |                  |                   |                  |                       |                |                     |              |                   |     |
| ACCOMMODATION          | 734.77           | 757.51            | 173.61           | 358.71                | NS             | 209,94              | 43.47        | 2178.00           | 31  |
| MEALS                  | 256.14           | 251.93            | 60.58            | 299.86                | NS             | 868,00              | 76.76        | 1813.27           | 23  |
| YACHTING               | 145,78           | 75.86             | 0.00             | 15,28                 | NS             | 1,00                | 274.01       | \$12.59           | 07  |
| TAXI                   | 112.33           | 129.42            | 47,47            | 124.53                | NS             | 341.77              | 38.16        | 793.69            | n   |
| entertainment          | 60.06            | 32.07             | 9.26             | 17.29                 | NS             | 143.47              | 14,74        | 276.89            | 64  |
| SHOPPING               | 61.50            | 82.67             | 26.00            | 435.92                | NS             | 607.65              | 65.89        | 1279.69           | 18  |
| OTHER                  | 36.35            | 33.69             | 11.30            | ວມ                    | NS             | 123.53              | <u>22.92</u> | 290.11            | 04  |
| TOTAL EXPENSES         | 1406,93          | 1363.15           | 328.28           | 1317.65               | NS             | 22%02               | \$35.95      | 7244,24           | 00י |

NS NOT SUFFICIENT DATA

### APPENDIX 6B 1988: TOT AL SPENDING BY CANADIAN VISITORS BY ACCOMMODATION TYPE (USS'000)

| ACCOMMODATION<br>TYPES. | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | TOTAL<br>EXPENSES | 5    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|-------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |       |                   |      |
| ACCOMMODATION           | 102.26           | 3779              | NS               | 192.47                | NS             | 86,27               | NS    | <b>63-13</b> 5    | 33   |
| MEALS                   | 60.04            | 69,99             | NS               | 109.57                | NS             | 241.92              | NS    | 48133             | 3    |
| YACHTING                | 3.88             | 7.61              | NS               | L82                   | NS             | 2423                | NS    | 39.55             | 02   |
| TAXI                    | 23.11            | 29.54             | NS               | 41.30                 | NS             | 18253               | NS    | 276.78            | 14   |
| entertainment           | 7.81             | 3.39              | NS               | 7,06                  | NS             | 86.68               | NS    | 104.94            | ø    |
| SHOPPING                | 26.40            | 233               | NS               | 26.93                 | NS             | 221.71              | NS    | 296.57            | ឋ    |
| other                   | 7.03             | 7.20              | NS               | 298                   | NS             | 95.43               | NS    | 112.64            | 06   |
| TOTAL EXPENSES          | 230.52           | 394,92            | NS               | 382.12                | NS             | 940.80              | NS    | 1948.37           | 1 00 |

### APPENDIX 6C 1988: TOTAL SPENDING BY U.K. VISITORS BY ACCOMMODATION TYPE (USS)000)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VIL LA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | TOTAL<br>EXPENSES | ¢.         |
|-------------------------|------------------|-------------------|------------------|------------------------|----------------|---------------------|-------|-------------------|------------|
| EXPENDITURE ON:         |                  |                   |                  |                        |                |                     |       |                   |            |
| ACCOMMODATION           | 396.95           | 921.58            | NS               | NS                     | NS             | 124.90              | NS    | 1445.43           | <u>.</u> ч |
| MEALS                   | 221.57           | 257.34            | NS               | 88                     | NS             | 5.8% 05             | NS    | 1067.96           | 25         |
| YACHTING                | 21.90            | 14.27             | NS               | NS                     | NS             | 0.00                | NS    | 36.16             | 01         |
| TAXI                    | 66.76            | 127.18            | NS               | NS                     | NS             | 245.86              | NS    | 4,19,80           | 10         |
| ENTERTAINMENT           | 45,36            | 8.73              | NS               | NS                     | NS             | 31225               | NS    | 300.33            | 06         |
| SHOPPING                | 48.97            | 70,79             | NS               | NS                     | NS             | 509.16              | NS    | 628.92            | 15         |
| OTHER                   | 35.60            | 72.60             | NS               | NS                     | NS             | 219,98              | NS    | 328,18            | CH         |
| TOTAL EXPENSES          | 839.10           | 147 <u>2</u> 49   | NS               | NS                     | NS             | 2001,19             | NS    | 431279            | : 10       |
|                         |                  |                   |                  |                        |                |                     |       |                   |            |

NS NOT SUFFICIENT DATA

### APPENDIX 6D 1988: TOT AL SPENDING BY EUROPEAN VISITORS BY ACCOMMODATION TYPE (USS'000)

| ACCOMMODATION<br>TYPES: | Hotel<br>(Large) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS | OTHER    | TOTAL<br>EXPENSES | ۶.   |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|----------|-------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |         |          |                   |      |
| ACCOMMODATION           | 166.93           | 163.11            | NS               | NS                    | NS             | NS      | NS       | 330.64            | 45   |
| MEALS                   | 134.14           | 69.53             | NS               | NS                    | NS             | NS      | NS       | 204.02            | 28   |
| YACHTING                | 6.32             | 0.00              | NS               | NS                    | NS             | NS      | NS       | 6.32              | 01   |
| TAXI                    | 58.28            | 30.22             | NS               | NS                    | NS             | NS      | NS       | 88.50             | 12   |
| ENTERTAINMENT           | 3.96             | 3.65              | NS               | NS                    | NS             | NS      | NS       | 7.61              | 01   |
| Shopping                | 37.42            | 29.21             | NS               | NS                    | NS             | NS      | NS       | 66.6J             | 09   |
| OTHER                   | 21.58            | 8.78              | NS               | NS                    | NS             | NS      | NS       | 76.00             | 64   |
| TOTAL EXPENSES          | 425.64           | 304.85            | NS               | NS                    | NS             | NS      | NS       | 733,49            | 1 00 |
|                         |                  |                   |                  |                       |                |         | <u>_</u> |                   | •    |

NS - NOTSUFFICIENT DATA

310

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS | OTHER | TOTAL<br>EXPENSES | ç            |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|-------|-------------------|--------------|
| EXPENDITURE ON:         |                  | <u> </u>          |                  |                       |                |         |       |                   |              |
| ACCOMMODATION           | 529.20           | 947,96            | NS               | NS                    | NS             | 358.19  | NS    | 2135.34           | <del>ت</del> |
| MEALS                   | 3439             | 267,67            | NS               | NS                    | NS             | 1388.94 | NS    | 1910.89           | <u>2</u>     |
| YACHTING                | 0.00             | 26.24             | NS               | NS                    | NS             | 0.00    | NS    | 26.24             | 00           |
| TAXI                    | 120.97           | 200.15            | NS               | NS                    | NS             | 673.21  | NS    | 994.34            | 12           |
| ENTERTAINMENT           | 58.39            | 5173              | NS               | NS                    | NS             | 105.01  | NS    | 215.12            | 03           |
| SHOPPING                | 112.93           | 173.47            | NS               | NS                    | NS             | 1707.18 | NS    | 1993.58           | ບ            |
| OTHER                   | 160.05           | 59.68             | NS               | NS                    | NS             | 1059.10 | NS    | 1215.52           | 14           |
| TOTAL EXPENSES          | 1475.82          | 1726.91           | NS               | NS                    | NS             | 5291.62 | NS    | 8494.34           | 1 00         |

### APPENDIX 6E 1988: TOT AL SPENDING BY CARIBBEAN VISITORS BY ACCOMMODATION TYPE (USS'000)

# APPENDIX SEVEN

### 1992: TOTAL VISITOR EXPENDITURE ESTIMATES BY COUNTRY OF RESIDENCE AND ACCOMODATION TYPE

.

.

:

•

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS | OTHER   | TOTAL<br>EXPENSES | •  |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|---------|-------------------|----|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |         |         |                   |    |
| ACCOMMODATION           | 840.58           | 1919.36           | \$63.56          | 719,88                | 68.01          | 69.21   | 21431   | 4354.95           | 3  |
| MEALS                   | 406.91           | 752.50            | 243.74           | 385.37                | <b>هی</b> ن    | 681.<3  | 301.27  | 2835.54           | 2  |
| YACHTING                | 155.68           | \$26.62           | 134.61           | 607,91                | 37,90          | 3.05    | 510.85  | 1976.61           | 1  |
| BAR                     | 94.20            | 200.53            | 63.78            | 104,93                | 17.40          | 435.12  | 81,54   | 997.51            | 0  |
| TAXI                    | 104.59           | 156.54            | 61.57            | 69.02                 | 13.54          | 82.95   | 57.89   | 546.4C            | 0  |
| CAR RENTAL              | 46.65            | 103.79            | 37.68            | 76.20                 | 16.86          | 207.64  | 20.57   | \$09.39           | 0  |
| TOURS                   | 24.71            | 31.13             | 23.83            | 56.76                 | 6.55           | 13.23   | 3&15    | 196.36            | 0  |
| ENTERTAINMENT           | 1.97             | 10,60             | 10.67            | 7.75                  | 3.70           | 330.28  | 13.29   | 378.20            | Ċ. |
| DUTY-FREE SHOPPING      | 66.89            | 95.81             | \$7,19           | 73.95                 | 13.57          | 169.98  | 53,00   | 533.39            | 0  |
| GROCERY SHOPPING        | 3743             | 55.54             | 29.42            | 84,79                 | 14.83          | 94,66   | 113.11  | 425.78            | α  |
| SPICE AND CRAFT         | 105.39           | 113,40            | 53.65            | 92.82                 | 12.15          | 434.61  | 47,82   | 859,64            | 0  |
| SPORTS                  | 0.84             | 16.58             | 17.69            | \$.35                 | 299            | 119.09  | 20.30   | 182.84            | 0  |
| OTHER                   | 67.67            | 30.63             | 12.56            | 16.62                 | 7,94           | 267.18  | 9.16    | 411.76            | 0  |
| TOTAL EXPENSES          | 1951.51          | 4015.85           | 1251.95          | 2201.35               | 294.29         | 2905-43 | 1481.20 | 14208.57          | 10 |

APPENDIX 7A 1992 TOTAL SPENDING BY U.S. VISITORS BY ACCOMMODATION TYPE (USS'000)

APPENDIX 7B

1992: TOTAL SPENDING BY CANADIAN VISITORS BY ACCOMMODATION TYPE (USS'000)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OK VILLA | guest<br>House | FRIENDS<br>& FAMILY | other   | TOTAL<br>EXPENSES | 5          |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|---------|-------------------|------------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                | _                   |         |                   |            |
| ACCOMMODATION           | 182.89           | NS                | 83.21            | 272.36                | 39.44          | NS                  | 31434   | 892.24            | 33         |
| MEALS                   | 102.56           | NS                | 53.53            | 66.25                 | 14.29          | NS                  | 240.30  | 477.23            | 18         |
| YACHTING                | 0,94             | NS                | 2.99             | 44,96                 | 0.00           | NS                  | 373.57  | 422.46            | 16         |
| BAR                     | 24.53            | NS                | 26,17            | 13.41                 | 7.05           | NS                  | 75.69   | 146.57            | 65         |
| TAXI                    | 21.01            | NS                | 5.76             | 19.21                 | 3.85           | NS                  | 61.23   | 111.06            | 04         |
| CAR RENTAL              | 11,90            | NS                | 10.19            | 1662                  | 5.10           | NS                  | 16.87   | 60.68             | <b>0</b> 2 |
| TOURS                   | 4.81             | NS                | 3.75             | 21.60                 | 0.80           | NS                  | 40.42   | 71.38             | 03         |
| ENTERTAINMENT           | 1.05             | NS                | 0.55             | 11.96                 | 135            | NS                  | 0.00    | 14.95             | 01         |
| DUTY-FREE SHOPPING      | 1531             | NS                | 10,77            | <b>6</b> 3.67         | 7,49           | NS                  | 87,84   | 185.08            | 07         |
| GROCERY SHOPPING        | 24.80            | NS                | 8.10             | 16.39                 | 14,99          | NS                  | 77,97   | 144.24            | 65         |
| SPICE AND CRAFT         | 10.22            | NS                | 7.94             | 19.14                 | 0.00           | NS                  | 62.63   | 99,99             | 04         |
| SPORTS                  | 0.99             | NS                | 14               | 0.50                  | 0.00           | NS                  | 0.00    | 2.90              | 00         |
| OTHER                   | 15.07            | NS                | 14.03            | 30.05                 | <b>6.55</b>    | NS                  | 14,05   | 59.78             | 02         |
| TOTAL EXPENSES          | 416.40           | NS                | 225.40           | 578.16                | 100.92         | NS                  | 1364.98 | 2688.85           | 1 00       |

NS - NOT SUFFICIENT DATA

2

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | TOTAL<br>ENPENSES | ۰,        |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|-------------------|-----------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |       |                   |           |
| ACCOMMODATION           | 329.42           | 1061.30           | NS               | NS                    | 126.27         | 16.23               | NS    | 1553.22           | 26        |
| MEALS                   | 257.50           | 422.15            | NS               | NS                    | 70.56          | 53422               | NS    | 1284.43           | 21        |
| YACHTING                | 0.00             | 154,94            | NS               | NS                    | 5.87           | 4.00                | NS    | 165,80            | 03        |
| BAR                     | \$3.96           | 13335             | NS               | NS                    | 10.08          | 479.30              | NS    | 653.30            | 11        |
| TAXI                    | 28.75            | 95,16             | NS               | NS                    | 46.10          | 415.76              | NS    | S88.77            | 10        |
| CAR RENTAL              | 38.13            | 84,41             | NS               | NS                    | 32.79          | 187.85              | NS    | 343.17            | 06        |
| TOURS                   | 37.82            | 95.36             | NS               | NS                    | 603            | 36.20               | NS    | 175.41            | 03        |
| ENTERTAINMENT           | 14.32            | 20.21             | NS               | NS                    | 5,99           | 51.17               | NS    | 91.70             | <b>Q2</b> |
| DUTY-FREE SHOPPING      | 3.53             | 75.31             | NS               | NS                    | 15,27          | 81.70               | NS    | 175.86            | a3        |
| GROCERY SHOPPING        | 0.00             | 64.86             | NS               | NS                    | 9,99           | 443.72              | NS    | 518.57            | 09        |
| SPICE AND CRAFT         | 32.68            | 69,30             | NS               | NS                    | 17,10          | 106.72              | NS    | 23.89             | 64        |
| SPORTS                  | 0.00             | 45.97             | NS               | NS                    | 0.00           | 4,99                | NS    | \$0.97            | 01        |
| OTHER                   | 0.00             | 15.68             | NS               | NS                    | 8.61           | 104.22              | NS    | 128.51            | 02        |
| TOTAL EXPENSES          | 796.11           | 2358.09           | NS               | NS                    | 361.26         | 2470.13             | NS    | 5985.58           | 1 00      |

APPENDIX 7C 1992 TOTAL SPENDING BY U.K. VISITORS BY ACCOMMODATION TYPE (USS 000)

NS - NOT SUFFICIENT DATA

APPENDIX 7D

1992 TOTAL SPENDING BY EUROPEAN VISITORS BY ACCOMMODATION TYPE (USS'000)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | Hotel<br>(Medium) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | TOTAL<br>EXPENSES | ę,   |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|-------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       | -              |                     |       |                   |      |
| ACCOMMODATION           | 281.91           | 1258.20           | 407.23           | NS                    | 95.94          | NS                  | NS    | 2943.28           | 44   |
| MEALS                   | 263.00           | 569.21            | 160.98           | NS                    | 66.26          | NS                  | NS    | 1059.44           | ນ    |
| YACHTING                | 53.88            | 5.50              | 4276             | NS                    | 4.85           | NS                  | NS    | 106.99            | 62   |
| BAR                     | 85.40            | 148.17            | 64.02            | NS                    | 29.89          | NS                  | NS    | 327.48            | 07   |
| TAXI                    | 33.87            | 130.03            | 40,90            | NS                    | 49,48          | NS                  | NS    | 254.29            | 05   |
| CAR RENTAL              | 121.12           | 81.02             | 6.65             | NS                    | 5.34           | NS                  | NS    | 216.12            | 05   |
| TOURS                   | 15.38            | 58.05             | 26.71            | NS                    | 5.62           | NS                  | NS    | 105.79            | 62   |
| ENTERTAINMENT           | 8.57             | 26.53             | 0.00             | NS                    | 3.05           | NS                  | NS    | 38.16             | 01   |
| DUTY-FREE SHOPPING      | 43.96            | 24.63             | 44.38            | NS                    | 28.29          | NS                  | NS    | 143.26            | ထ    |
| GROCERY SHOPPING        | 10.67            | 24.59             | 14.67            | NS                    | 2,32           | NS                  | NS    | 52.26             | 01   |
| SPICE AND CRAFT         | 10.67            | 51.83             | 33.48            | NS                    | 20.28          | NS                  | NS    | 116.27            | 02   |
| SPORTS                  | 0.00             | 85,27             | 4.11             | NS                    | 5,44           | NS                  | NS    | 96.82             | 62   |
| OTHER                   | 6138             | 28.67             | 9,34             | NS                    | 3.85           | NS                  | NS    | 105.24            | 02   |
| TOTAL EXPENSES          | 991.81           | 2495.75           | 857.22           | NS                    | 320.61         | NS                  | NS    | 465.39            | 1 00 |

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | TOTAL<br>EXPENSES | ç    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|-------------------|------|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |                     |       |                   |      |
| ACCOMMODATION           | NS               | 1280.21           | NS               | 906.28                | 99,30          | 0.00                | NS    | 2285.79           | 27   |
| MEALS                   | NS               | \$\$3.97          | NS               | \$16.20               | 87.43          | 996.15              | NS    | 2153.75           | 25   |
| YACHTING                | NS               | 0.00              | NS               | 6.12                  | 0.00           | 0.00                | NS    | 6.12              | 00   |
| BAR                     | NS               | 87.56             | NS               | 185.95                | 19.71          | 859.99              | NS    | 1153.21           | 14   |
| TAXI                    | NS               | 266.00            | NS               | 183.14                | 39.02          | 66.89               | NS    | 555.05            | 07   |
| CAR KENTAL              | NS               | 0.00              | NS               | 42.81                 | 9,44           | 509.42              | NS    | 561.67            | 07   |
| TOURS                   | NS               | 0.00              | NS               | 30.58                 | 3.46           | 0.00                | NS    | 34.04             | 00   |
| ENTERTAINMENT           | NS               | 225.70            | NS               | 16.69                 | 5.89           | 213.21              | NS    | 461,49            | 65   |
| DUTY-FREE SHOPPING      | NS               | 60.69             | NS               | 180.66                | 19.07          | 142.73              | NS    | 403.16            | 65   |
| GROCERY SHOPPING        | NS               | 632               | NS               | 43.47                 | 9.95           | 174.98              | NS    | 234.73            | 63   |
| SPICE AND CRAFT         | NS               | 92.46             | NS               | 46,94                 | 3.40           | 284.27              | NS    | 427.07            | 05   |
| SPORTS                  | NS               | 0.00              | NS               | 0.00                  | 0.00           | 0.00                | NS    | 0.00              | 80   |
| OTHER                   | NS               | 45.04             | NS               | 129.75                | 9.33           | ક્રદ્ધ              | NS    | 239.07            | a3   |
| TOTAL EXPENSES          | NS               | 2617.95           | NS               | 2255.60               | 305.99         | 3302.60             | NS    | 8515.14           | ı 00 |

APPENDIX 7E 1992 TOTAL SPENDING BY CARIBBEAN VISITORS BY ACCOMMODATION TYPE (USS'000)

NS - NOT SUFFICIENT DATA

APPENDIX 7F

1992 TOTAL SPENDING BY ALL VISITORS BY ACCOMMODATION TYPE (USS'000)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS      | OTHER   | TOTAL<br>EXPENSES | ۶,  |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|--------------|---------|-------------------|-----|
| EXPENDITURE ON:         |                  |                   |                  |                       |                |              |         |                   |     |
| ACCOMMODATION           | 1634.79          | 5539.0 <b>6</b>   | 994.01           | 1896.53               | 448.99         | 85.44        | 528.65  | 11129.47          | 31  |
| MEALS                   | 1032.27          | 2297.63           | 458.24           | 967.81                | 301.07         | 2211.80      | 541.57  | 7810.40           | 2   |
| YACHTING                | 210.49           | 687.06            | 180,35           | 658,99                | 48.62          | 8.05         | 884.C   | 2677,98           | 07  |
| BAR                     | 258.09           | 569.62            | 153,96           | 304.30                | 90,74          | 1774.41      | 157.23  | 3306.36           | 09  |
| TAXI                    | 185.21           | 60.73             | 108.24           | 27136                 | 152.39         | 568,60       | 119,12  | 2055.56           | 06  |
| CAR RENTAL              | 217.79           | 271.22            | 54.52            | 135.63                | 69.52          | 904,91       | 37.44   | 1691.03           | 05  |
| TOURS                   | 82.72            | 184.57            | 56.28            | 105.94                | 22.47          | 49,43        | 78.58   | 582,98            | œ   |
| ENTERTAINMENT           | 25.95            | 253.04            | 11.22            | 36.41                 | 19.98          | 594,66       | ນສ      | 984.50            | Ø   |
| DUTY-FREE SHOPPING      | 129.69           | 26144             | 112.33           | 318.27                | 83,69          | 394.47       | 140.85  | 2440,74           | 04  |
| GROCERY SHOPPING        | 68.91            | ชบา               | 52.19            | 346.65                | \$2.07         | 713.37       | 191.08  | 1375.57           | 04  |
| SPICE AND CRAFT         | 158.97           | 327.09            | 95.06            | <b>158.9</b> 1        | 52,93          | 825.60       | 110.50  | 1729.06           | 05  |
| SPORT5                  | 1.63             | 147.52            | 32               | 5.86                  | 843            | 124.08       | 20.30   | 333.53            | 01  |
| OTHER                   | 146.11           | 120.02            | 35.93            | 15645                 | 36.28          | <b>C</b> 034 | 23.21   | 944,35            | 03  |
| TOTAL EXPENSES          | 4155.83          | 11487.63          | 2337,57          | 5168.11               | 1387.07        | 8681.15      | 2546.18 | 36063 53          | 100 |

<u>ب</u> - - ۰۰۰۰۰۰۰

## APPENDIX EIGHT

## TOTAL INCOME GENERATION BY COUNTRY OF RESIDENCE AND ACCOMODATION TYPE

•

•

•

| ΑΡΡΕΝΟΙΧ 8Λ   |
|---|
| 1992: TOT AL. INCOME GENERATED BY U.S. VISITORS BY ACCOMMODATION TYPE |
| <u>(USS'000)</u>  |

| ACCOMMODATION      | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>Ci- VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER  | TOTAL<br>INCOME | ţ    |
|--------------------|------------------|-------------------|------------------|------------------------|----------------|---------------------|--------|-----------------|------|
| INCOME FROM:       |                  |                   |                  | _                      |                |                     |        |                 |      |
| ACCOMMODATION      | 125.92           | 530.70            | 191.45           | 219.78                 | 29.97          | 0.00                | 0.00   | 1097.83         | 27   |
| MEALS              | 163.03           | 299.94            | 97.18            | 153.65                 | 24,93          | 271.69              | 120.12 | 1130.53         | 25   |
| YACHTING           | 36.60            | 123.81            | 3165             | 142.92                 | 8.91           | 0.72                | 120.10 | 464.70          | 11   |
| BAR                | 15.48            | 32.95             | 10,48            | 17.24                  | 2.86           | 71.49               | 13.40  | 163.89          | 04   |
| TAXI               | 3213             | 45.09             | 18.91            | 21.20                  | 425            | 25.48               | 17.78  | 167.85          | 04   |
| CAR RENTAL         | 9,68             | 21.55             | 7.62             | 15.52                  | 3.50           | 40.11               | 4.27   | 105.75          | 0    |
| TOURS              | 8.04             | 10.12             | 8.40             | 18.46                  | 213            | 4.30                | 12.41  | 63.86           | 02   |
| ENTERTAINMENT      | 0.56             | 3.01              | 3.03             | 2.20                   | 1.05           | 93.90               | 3.76   | 107.52          | 8    |
| DUTY-FREE SHOPPING | 1L17             | 16.50             | 9.55             | 12.35                  | 2.27           | 28.39               | 8.85   | 89.08           | 8    |
| GROCERY SHOPPING   | 6.44             | 10.69             | 5.66             | 1632                   | 2.85           | 18.22               | 21.77  | 81,96           | ß    |
| SPICE AND CRAFT    | 53.72            | \$7,80            | 27.34            | 47.31                  | 6.19           | 22122               | 24.37  | 438.26          | 11   |
| SPORTS             | ວນ               | 6.54              | 6.96             | 211                    | 1.15           | 46.95               | 8.01   | 72.13           | 8    |
| OTHER              | 19.50            | 8.63              | 3.62             | 479                    | 2.29           | 77.00               | 2.64   | 118.67          | œ    |
| TOTAL INCOME       | 472.60           | 1170,54           | <22.06           | 674,15                 | 92.38          | 902.79              | 357,48 | 4102.03         | 1 00 |

APPENDIX 8B

.

| 1992: TOTAL INCOME GENERATED BY CANADIAN VISITORS I | <u>BY_ACCOMMODATION TYPE</u> |
|---|------------------------------|
| (US\$'000)  |                              |

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | Hotel<br>(Medium) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER  | TOTAL  | ۶.  |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|--------|-----|
| INCOME FROM:           |                  |                   |                  |                       |                |                     |        | · ·    |     |
| ACCOMMODATION          | 27,40            | บง                | 31.64            | 81.15                 | ne             | 0,00                | 6.00   | 155.61 | 23  |
| MEALS                  | 4101             | 0.92              | 21.34            | 26.41                 | 5.70           | 0.55                | 95.81  | 190.27 | 28  |
| YACHTING               | 0.22             | 0.16              | 0.70             | 10.57                 | 0.00           | 0.00                | 87.83  | 99.32  | ឋ   |
| BAR                    | 4.03             | <i>0</i> 09       | 4.30             | 2.20                  | 1.16           | 0.29                | 12.44  | 24.13  | 04  |
| TAXI                   | 6.65             | 630               | 1.77             | 5.90                  | 1.15           | 0,17                | 18.81  | 34.12  | ø   |
| CAR RENTAL             | 247              | 0.06              | 212              | 3.45                  | 1.06           | <b>Q.19</b>         | 3.50   | 12.60  | 62  |
| TOURS                  | 1.56             | 0.06              | 122              | 7.02                  | 0.26           | 0.02                | 13.15  | 23.21  | 83  |
| ENTERTAINMENT          | 0.31             | 0.05              | 0.16             | 3.40                  | 8.0            | 0.17                | 0.00   | 425    | 01  |
| DUTY-FREE SHOPPING     | 236              | 0.04              | 2.80             | 10.63                 | 125            | 0.07                | 14.67  | 30.91  | 05  |
| GROCERY SHOPPING       | 4,77             | 0.03              | 156              | 3.54                  | 2.88           | 0.14                | 15.01  | 27.77  | 04  |
| SPICE AND CRAFT        | 5.21             | 0.17              | 4.05             | 9.76                  | 0.00           | 0.0                 | 31.95  | 50,97  | 06  |
| SPORTS                 | 0.39             | 0.06              | 0.56             | 0.20                  | 0.00           | 0.05                | 0.00   | 1.15   | 00  |
| OTHER                  | 434              | 600               | 4.04             | 2.90                  | 1.89           | 0.12                | 4.05   | 17.23  | œ   |
| TOTAL INCOME           | 100.73           | 70                | 75.25            | 169.15                | 29.19          | 252                 | 297.21 | 671.52 | 100 |
| 1                      |                  |                   |                  |                       |                |                     |        |        |     |

| APPENDIN 8C   |
|---|
| 1992: TOTAL INCOME GENERATED BY U.K. VISITORS BY ACCOMMODATION TYPE |
| (USS'000)   |

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | TOTAL<br>INCOME | *   |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|-----------------|-----|
| INCOME FROM:           |                  |                   |                  |                       |                |                     |       |                 |     |
| ACCOMMODATION          | 49.35            | 296.96            | 0.99             | 1.90                  | 42.98          | 0.00                | 0.53  | 391.31          | ບ   |
| MEALS                  | 102_67           | 168.31            | 0.46             | Q.97                  | 28.13          | 21299               | 0.54  | 512.10          | 30  |
| YACHTING               | 0.00             | 36.43             | 0.18             | 0.66                  | 1.35           | L17                 | 0.88  | 38,98           | 02  |
| BAR                    | 8.87             | 21.91             | Q.15             | 0,30                  | 2.74           | 78.75               | Q 10  | 112.27          | 07  |
| TAXI                   | 8.83             | 29.23             | 0.11             | 0.27                  | 14.10          | 128.64              | 0.12  | 180.87          | n   |
| CAR RENTAL             | 7.91             | 17.52             | 0.05             | Q.14                  | 6.61           | 39.00               | 0.04  | 71.24           | ы   |
| TOURS                  | 12.30            | 31.01             | 0.06             | 0.11                  | 1.96           | 1177                | 0.08  | 57.04           | ພ   |
| ENTERTAINMENT          | 4,07             | 5.75              | 0.01             | 0,04                  | 1.70           | 14.55               | 0.01  | 26.07           | 02  |
| DUTY-FREE SHOPPILG     | 0.59             | 12.58             | 0.11             | 0.32                  | చు             | 13.65               | 0.14  | 29.37           | œ   |
| GROCERY SHOPPING       | 0.00             | 12.49             | 0.05             | Q.15                  | 192            | 85.42               | 0.19  | 99.52           | 06  |
| SPICE AND CRAFT        | 16.66            | 35.37             | 0,10             | 0.16                  | 8.72           | وريج                | Q11   | 115.14          | 07  |
| SPORTS                 | Ø.00             | 18.14             | 0.03             | 0.01                  | 0.00           | L97                 | 0.02  | 20.11           | 01  |
| OTHER                  | 0.00             | 432               | 0.04             | 0.16                  | 248            | 30.04               | 0.02  | 37.04           | 02  |
| TOTALINCOME            | 211.24           | 692.22            | 234              | 5.17                  | 115.54         | 672,35              | 2.85  | 1691.35         | 100 |
|                        |                  |                   |                  |                       |                |                     |       |                 |     |

### APPENDIX 8D

<u>1992: TOT AL INCOME GENERATED BY EUROPEAN VISITORS BY ACCOMMODATION TYPE</u> (US\$'000)

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | Hotel.<br>(Medium) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | TOTAL   | *          |
|------------------------|------------------|--------------------|------------------|-----------------------|----------------|---------------------|-------|---------|------------|
| INCOME FROM:           |                  |                    |                  |                       |                |                     |       |         |            |
| ACCOMMODATION          | <b>C</b> 3       | 347.89             | 154.83           | NS                    | 32.66          | NS                  | NS    | 577.61  | 41         |
| MEALS                  | 104.86           | 224.95             | 64,18            | NS                    | 24.C           | NS                  | NS    | 422.40  | 30         |
| YACHTING               | 12,67            | 129                | 10.05            | NS                    | 2.14           | NS                  | NS    | 25.15   | 02         |
| BAR                    | 14.03            | 2434               | 10.52            | NS                    | 4.91           | NS                  | NS    | \$3.80  | 04         |
| TAXI                   | 10.41            | 39.95              | 12.57            | NS                    | 15.20          | NS                  | NS    | 78.12   | 06         |
| CAR RENTAL             | 25.14            | 17.23              | 138              | NS                    | LII            | NS                  | NS    | 44.87   | Ø\$        |
| TOURS                  | 5.00             | 18.89              | 8.69             | NS                    | 153            | NS                  | NS    | 34.40   | 02         |
| ENTERTAINMENT          | 24               | 7.54               | 0.00             | NS                    | 0.87           | NS                  | NS    | 10.85   | 01         |
| DUTY-FREE SHOPPING     | 7.34             | 445                | 7.41             | NS                    | 4.72           | NS                  | NS    | 23.92   | 62         |
| GROCERY SHOPPING       | 205              | 473                | 282              | NS                    | 0,45           | NS                  | NS    | 10.06   | <b>C</b> 1 |
| SPICE AND CRAFT        | L 5.44           | 24.0               | 17.06            | NS                    | 10.34          | NS                  | NS    | 59.26   | 64         |
| SPORTS                 | 0.00             | 33.64              | 2.41             | NS                    | 213            | NS                  | NS    | 38,20   | 03         |
| OTHER                  | 18.26            | 8.26               | 2,69             | NS                    | L11            | NS                  | NS    | 30.33   | 62         |
| TOTAL INCOME           | 249.88           | 761,59             | 2-141            | NS                    | 102.89         | NS                  | NS    | 1406.97 | 1 00       |

.

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS | OTHER | TOTAL<br>INCOME | ŗ   |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|-------|-----------------|-----|
| INCOME FROM:           |                  |                   |                  |                       |                |         |       |                 |     |
| ACCOMMODATION          | NS               | 353.68            | NS               | NS                    | 33.80          | 0.00    | NS    | 664.47          | 26  |
| MEALS                  | NS               | 220.87            | NS               | NS                    | 34.86          | 397,17  | NS    | 858.70          | 34  |
| YACHTING               | NS               | 0.00              | NS               | NS                    | 0.00           | 0.00    | NS    | 144             | 00  |
| BAR                    | NS               | 14.39             | NS               | NS                    | 3.24           | 141,30  | NS    | 189.47          | 07  |
| TAXI                   | NS               | 81.72             | NS               | NS                    | 11.99          | 20.55   | NS    | 170.51          | 07  |
| CAR RENTAL             | NS               | 0.00              | NS               | NS                    | 1.96           | 105.76  | NS    | 116.60          | es  |
| TOURS                  | NS               | 0.00              | NS               | NS                    | 113            | 0.00    | NS    | 11.07           | 00  |
| ENTERTAINMENT          | NS               | 64.17             | NS               | NS                    | 1.68           | 60.61   | NS    | 131,20          | 05  |
| DUTY-FREE SHOPPING     | NS               | 10.14             | NS               | NS                    | 3.18           | 23.84   | NS    | 67.33           | 03  |
| GROCERY SHOPPING       | NS               | 1.22              | NS               | NS                    | 1.92           | 33.68   | NS    | 45.19           | œ   |
| SPICE AND CRAFT        | NS               | 47.13             | NS               | NS                    | 1.73           | 144,89  | NS    | 217.68          | 09  |
| SPORTS                 | NS               | 0.00              | NS               | NS                    | 0.00           | 0.00    | NS    | 0.00            | 00  |
| OTHER                  | NS               | 12.98             | NS               | NS                    | 269            | 15.83   | NS    | 68,90           | Ø   |
| TOTALINCOME            | NS               | 806.57            | NS               | NS                    | 96.16          | 90.63   | NS    | ತಲ್ಪ            | 100 |

### APPENDIX 8E <u>1992: TOTAL INCOME GENERATED BY CARIBBEAN VISITORS BY</u> <u>ACCOMMODATION TYPE (USS'000)</u>

APPENDIX 8F

| 1992: TOTAL INCOME GENERATED BY AL. | <u>LVISITORS BY</u> | ACCOMMODATION | V TYPE |
|-------------------------------------|---------------------|---------------|--------|
| (US\$'000)                          |                     |               |        |

| ACCOMMODATION<br>TYPE: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS      | OTHER  | TOTAL    | <b>%</b> |
|------------------------|------------------|-------------------|------------------|-----------------------|----------------|--------------|--------|----------|----------|
| INCOME FROM:           |                  |                   |                  |                       |                |              | _      |          |          |
| ACCOMMODATION          | 244.89           | 1531.55           | 377.92           | 579.62                | 152.83         | 0.00         | Ø.00   | 2884.82  | 28       |
| MEALS                  | 411.57           | 916.07            | 152.70           | 385.87                | 120.04         | 881.85       | 215.93 | 3114.01  | 30       |
| YACHTING               | 49,49            | 161.53            | 42,40            | 154.93                | 11-0           | 1.89         | 207.93 | 629.59   | 06       |
| BAR                    | 42,40            | 93.59             | 25.30            | 50.00                 | 14.91          | 291.53       | 25.83  | 543.56   | 65       |
| TAXI                   | 57. <b>5</b> 2   | 198.96            | 332              | 83.36                 | 46.78          | 174.67       | 36.59  | 631.47   | 06       |
| CAR RENTAL             | 45.21            | 56.30             | 11.32            | 28.16                 | 14-63          | 157.86       | 7,77   | 351.06   | ß        |
| TOURS                  | 26,90            | 60.02             | 18.30            | 32-0                  | 7.31           | 16.07        | 25.55  | 189.59   | 62       |
| ENTERTAINMENT          | 7,38             | 80,47             | 3.19             | 10.35                 | 5.68           | 169.06       | 1.76   | 279.89   | œ        |
| DUTY-FREE SHOPPING     | 21.66            | 43,66             | 18.76            | 52.15                 | 13.98          | <b>63.88</b> | 252    | 240.60   | œ        |
| GROCERY SHOPPING       | 13.27            | 29.13             | 10.05            | 28.23                 | 10.02          | 137.32       | 36.78  | 264.80   | 8        |
| SPICE AND CRAFT        | 81.03            | 16672             | 48.45            | 80,99                 | 26.96          | -20.81       | 56.32  | 881.30   | 05       |
| SPORTS                 | 0.72             | 58.32             | 9.95             | 231                   | ແ              | 48.95        | 8.01   | 131.58   | 01       |
| OTHER                  | en               | 34.59             | 10,36            | 45.09                 | 10,46          | 122.57       | 6.69   | 272.16   | ۵<br>۵   |
| TOTAL INCOME           | 1044,44          | 3400.93           | 791,94           | 1537,49               | -08.17         | 251877       | 654,69 | 10416-43 | 100      |

# APPENDIX NINE

1992: GOVERNMENT REVENUE COLLECTION ESTIMATES

.

.

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER  | TOTAL<br>INCOME | 5    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|-----------------|------|
| INCOME FROM:            |                  |                   |                  |                       |                |                     |        |                 |      |
| ACCOMMODATION           | 162.15           | 439.34            | 153.54           | 202.65                | 23.60          | 0.00                | 0.00   | 951.25          | 32   |
| MEALS                   | 80.92            | 148.88            | 48.24            | 76.26                 | 1237           | 134.80              | 59.62  | 561.15          | 18   |
| YACHTING                | 3763             | 113.75            | 29.08            | 131.31                | 8.19           | 0.66                | 110.34 | 426.95          | 14   |
| BAR                     | 39,66            | 8442              | 26.85            | 44,15                 | 7.33           | 183.19              | 34.33  | 419.95          | 14   |
| TAXI                    | 10.07            | 15.07             | 5.93             | 6.65                  | 133            | 7,99                | 5.57   | 52.62           | 02   |
| CAR RENTAL              | 9,44             | 21.01             | 7.63             | 15.42                 | 3.41           | <b>C</b> 03         | 4.16   | 103.10          | 03   |
| TOURS                   | 3.28             | 4.13              | 3.42             | 7.53                  | 0.87           | 1.75                | \$.06  | 26.04           | 01   |
| ENTERTAINMENT           | 0.58             | 3.10              | 3.12             | 2.26                  | 1.08           | 96,48               | 3.86   | 110.47          | 04   |
| DUTY-FREE SHOPPING      | 23.64            | પ્રજ              | 20.21            | 26.13                 | 4.80           | 60.07               | 18.73  | 158.50          | 06   |
| GROCERY SHOPPING        | 7,88             | 13.10             | 6.94             | 19,99                 | 3.50           | 232                 | 26.67  | 100.40          | 03   |
| SPICE AND CRAFT         | ఓచ               | 9.31              | 440              | 7.62                  | 1.00           | 35.68               | 3.93   | 70,59           | 02   |
| SPORTS                  | 0.10             | 2.06              | 2.20             | Q.67                  | 0.37           | 14.83               | 253    | 22.76           | 01   |
| OTHER                   | 5.84             | 264               | 108              | 143                   | 0.69           | 23.06               | 0.79   | 35.53           | 01   |
| TOTALINCOME             | 385.84           | 891.74            | 312.64           | 542.10                | 68.53          | 622.90              | 275.60 | 3099.35         | 1 00 |

APPENDIX 9A 1992: TOTAL GOVERNMENT REVENUE GENERATED BY U.S. VISITORS BY ACCOMMODATION TYPE (USS'000)

·\* 2

#### APPENDIX 9B 1992: TOTAL GOVERNMENT REVENUE GENERATED BY CANADIAN VISITORS\_BY ACCOMMODATION TYPE (USS'000)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HGTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER  | TOTAL  | 5   |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|--------|--------|-----|
| INCOME FROM:            |                  |                   |                  |                       | •              |                     |        |        | -   |
| ACCOMMODATION           | 35.28            | NS                | 25.37            | 76.67                 | 10.57          | NS                  | 0.00   | 147.89 | 27  |
| MEALS                   | 20.36            | NS                | 10.59            | 13.11                 | 2.83           | NS                  | 47.56  | 91.44  | 17  |
| YACHTING                | 0.20             | NS                | 0.65             | 9.71                  | 0.00           | NS                  | 80.69  | 91.25  | 17  |
| BAR                     | 10.33            | NS                | 11.02            | 5.65                  | 2.97           | NS                  | 31.87  | 61.83  | 11  |
| TAXI                    | 2.02             | NS                | 0.56             | 185                   | 0.37           | NS                  | 5.90   | 10.70  | œ   |
| CAR RENTAL              | 2.41             | NS                | 2.06             | 3.36                  | 103            | NS                  | ۶C     | 12.28  | œ   |
| TOURS                   | 0.64             | NS                | 0.50             | 2.86                  | 0.11           | NS                  | 5.36   | 9,46   | 62  |
| ENTERTAINMENT           | ar               | NS                | 0.16             | 3.49                  | وري            | NS                  | 0.00   | 437    | 01  |
| DUTY-FREE SHOPPING      | 5.41             | NS                | 3.81             | 22.99                 | 265            | NS                  | 31.04  | 65.41  | 12  |
| GROCERY SHOPPING        | 5.85             | NS                | 1,91             | 434                   | 323            | NS                  | 18.39  | 34.01  | 06  |
| SPICE AND CRAFT         | 0.84             | NS                | 9.65             | 1.57                  | 0.00           | NS                  | 5.15   | 8.21   | æ   |
| SPORTS                  | 0.12             | NS                | 0.18             | 0.06                  | 0.00           | NS                  | 0.00   | 0.36   | 00  |
| OTHER                   | 130              | NS                | 121              | 0.87                  | 0.57           | NS                  | 1.21   | 5.16   | 01  |
| TOTALINCOME             | 85,07            | NS                | 58,66            | 146.05                | 23.02          | NS                  | 230.57 | 545.37 | ;00 |

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | GUEST<br>HOUSE | FRIENDS<br>& FAMILY | OTHER | TOTAL<br>INCOME | ۴.  |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|-----------------|-----|
| INCOME FROM:            |                  |                   |                  |                       |                |                     |       |                 |     |
| ACCOMMODATION           | 63.54            | 247.51            | NS               | NS                    | 33 85          | c 00                | NS    | 344 91          | 20  |
| MEALS                   | 50.96            | 63.54             | NS               | NS                    | 13 96          | 105 72              | NS    | 254 19          | 19  |
| YACHTING                | 0.00             | 33.47             | NS               | NS                    | 1.27           | 1.08                | NS    | 35.81           | 0,1 |
| BAR                     | 22.72            | 58.14             | NS               | NS                    | 7.02           | 201.78              | NS    | 287 67          | 22  |
| TAXI                    | 2.77             | 9,15              | NS               | NS                    | 4.42           | 40.33               | NS    | 56.70           | 64  |
| CAR RENTAL              | 7.72             | 17.08             | NS               | NS                    | 6.64           | 38 02               | NS    | 69 46           | 05  |
| TOURS                   | 5.02             | 12.64             | NS               | NS                    | 0.50           | 4 80                | NS    | 23.26           | 02  |
| ENTERTAINMENT           | 4.18             | 5 90              | NS               | NS                    | 1.75           | 14.95               | NS    | 28.79           | 02  |
| DUTY-FREE SHOPPING      | 1.25             | 26.61             | NS               | NS                    | 5.40           | 28 89               | NS    | 62.15           | ø   |
| GROCERY SHOPPING        | 0.00             | 15.29             | NS               | 88                    | 2.35           | 104.63              | NS    | 122.20          | 09  |
| SPICE AND CRAFT         | 2.68             | 5.70              | NS               | NS                    | 1,40           | 6.76                | NS    | 18.55           | 01  |
| SPORTS                  | 0.00             | 5.72              | NS               | NS                    | 0.00           | 0 62                | NS    | 6.35            | 00  |
| OTHER                   | 0.00             | 1.35              | NS               | NS                    | 0.74           | 8 99                | NS    | 11.09           | 01  |
| TOTAL INCOME            | 160.84           | 520.14            | NS               | NS                    | 79 63          | 558.58              | NS    | 1319.19         | 100 |

APPENDIX 9C <u>1992: TOTAL GOVERNMENT REVENUE GENERATED BY U.K. VISITORS BY</u> <u>ACCOMMODATION TYPE (US\$000)</u>

#### APPENDIX 9D

1992 TOTAL GOVERNMENT REVENUE GENERATED BY EUROPEAN VISITORS BY ACCOMMODATION TYPE (USS'000)

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS | OTHER | TOTAL<br>INCOME | *    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|-------|-----------------|------|
| INCOME FROM:            |                  |                   |                  |                       |                |         |       |                 |      |
| ACCOMMODATION           | 54,38            | 255.00            | 124.16           | NS                    | 3.7            | NS      | NS    | 492.27          | 47   |
| MEALS                   | 52.05            | 112.65            | 31.86            | NS                    | 13.11          | NS      | NS    | 209.66          | 20   |
| YACHTING                | 11.64            | 1.19              | 9,24             | NS                    | 1.05           | NS      | NS    | 23.11           | 02   |
| BAR                     | 35.95            | 62.38             | 26.95            | NS                    | 12.58          | NS      | NS    | 137.87          | IJ   |
| TAXI                    | 3.26             | 1252              | 3.94             | NS                    | 4,76           | NS      | NS    | 24.49           | œ    |
| CAR RENTAL              | 24.51            | 16,80             | 1.35             | NS                    | 1.08           | NS      | NS    | 43.74           | 04   |
| TOURS                   | 2.04             | 7.70              | 3.54             | NS                    | 0.74           | NS      | NS    | 14.03           | 01   |
| ENTERTAINMENT           | 2.50             | 7.75              | 0.00             | NS                    | 0.80           | NS      | NS    | 11.15           | 01   |
| DUTY-FREE SHOPPING      | 15.54            | 9.41              | 15.68            | NS                    | 10.00          | NS      | NS    | 50.63           | 05   |
| GROCERY SHOPPING        | 252              | 5.80              | 3.40             | NS                    | 0.55           | NS      | NS    | 12.32           | 01   |
| SPICE AND CRAFT         | 0.88             | 426               | 275              | NS                    | 167            | NS      | NS    | ذك.9            | 01   |
| SPORTS                  | 0.00             | 10.62             | 0.76             | NS                    | 0.68           | NS      | NS    | 12.05           | 01   |
| OTHER                   | 5.47             | 247               | 0.81             | NS                    | 033            | NS      | NS    | 9.06            | 01   |
| TOTAL INCOME            | 210.74           | 541.55            | 249              | NS                    | 73.17          | NS      | NS    | 1049.95         | 1 00 |

NS - NOT SUFFICIENT DATA

-- -

|                         |                  |                   | _                |                       |                |                     |       |         | _    |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------------------|-------|---------|------|
| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS<br>& FAMILY | OTHER | TOTAL   | \$   |
| INCOME FROM:            |                  |                   |                  |                       |                |                     |       | •       |      |
| ACCOMMODATION           | NS               | 293.04            | NS               | 255.12                | 2462           | 0.00                | NS    | 374.76  | 28   |
| MEALS                   | NS               | 109.63            | NS               | 102.16                | 17.30          | 197.14              | NS    | 426.23  | 21   |
| YACHTING                | NS               | 0.00              | NS               | 1.32                  | 0.00           | 0.00                | NS    | 1.32    | 00   |
| BAR                     | NS               | 36.86             | NS               | 78.29                 | 8.30           | 362.06              | NS    | 485.50  | 24   |
| TAXI                    | NS               | 25.62             | NS               | 17.64                 | 3.76           | 644                 | NS    | \$3.45  | 03   |
| CAR RENTAL              | NS               | 0.00              | NS               | 8.66                  | 1.91           | 103.11              | NS    | 113.68  | 06   |
| TOURS                   | NS               | 0.00              | NS               | 4.05                  | 0.40           | 0.00                | NS    | 451     | 00   |
| ENTERTAINMENT           | NS               | 65.93             | NS               | 4.88                  | 1.72           | 62.28               | NS    | 134.80  | 07   |
| DUTY-FREE SHOPPING      | NS               | 21.45             | NS               | 63.85                 | 6.74           | 50.44               | NS    | 142.45  | 07   |
| GROCERY SHOPPING        | NS               | 1.49              | NS               | 10.25                 | 2.35           | 41.20               | NS    | \$5.35  | 03   |
| SPICE AND CRAFT         | NS               | 7,59              | NS               | 3.85                  | 0.25           | 23.34               | NS    | 35.06   | 02   |
| SPORTS                  | NS               | 0.00              | NS               | 0.00                  | 0.00           | 0.00                | NS    | 0.00    | 00   |
| OTHER                   | NS               | 3.89              | NS               | 11.20                 | 0.50           | 4.74                | NS    | 20.63   | 01   |
| TOTAL INCOME            | NS               | 565.49            | NS               | 561.26                | 70.24          | 850.80              | NS    | 2047,80 | 1 00 |

APPENDIX 9E 1992: TOTAL GOVERNMENT REVENUE GENERATED BY CARIBBEAN VISITORS BY ACCOMMODATION TYPE (US\$ 5000)

NS - NOT SUFFICIENT DATA

APPENDIX 9F

| 1992: TOTAL GOVERNMENT REVENUE GENERATED BY ALL VISITORS | BY |
|--|----|
| ACCOMMODATION TYPE (USS'000)                             |    |

| ACCOMMODATION<br>TYPES: | HOTEL<br>(LARGE) | HOTEL<br>(MEDIUM) | HOTEL<br>(SMALL) | APARTMENT<br>OR VILLA | guest<br>House | FRIENDS | OTHER  | TOTAL   | ۶.   |   |
|-------------------------|------------------|-------------------|------------------|-----------------------|----------------|---------|--------|---------|------|---|
| · .COME FROM:           |                  |                   |                  |                       |                |         |        |         |      |   |
| ACCOMMODATION           | 315.35           | 1267,89           | 303.07           | 534,44                | 120.37         | 0.00    | 0.00   | 254113  | 32   | ļ |
| MEALS                   | 204.29           | 454,70            | 90,69            | 19153                 | 59,58          | 437.72  | 107.18 | 1545.68 | 19   | • |
| YACHTING                | 45,47            | 148,40            | 38.%             | 142.34                | 10.50          | 1.74    | 191.03 | 578.44  | 07   |   |
| BAR                     | 10R 65           | 239.81            | 64.82            | 128.11                | 38,20          | 747.02  | 66.20  | 1392.82 | 17   |   |
| TAXI                    | 18.13            | C.38              | 10.C             | 26.13                 | 14.67          | 54.74   | 11.47  | 197.95  | C.   |   |
| CAR RENTAL              | 44.05            | 54.89             | 11.03            | 27.45                 | 14.07          | 183.15  | 7.58   | 342.27  | 04   |   |
| TOURS                   | 10.97            | 24.47             | 7.46             | 14.45                 | 295            | 6.55    | 10.42  | 77.30   | 01   |   |
| ENTERTAINMENT           | 7.58             | 82.68             | 3.28             | 10.63                 | 5.84           | 173.70  | 3.86   | 287.57  | 04   |   |
| DUTY-FREE SHOPPING      | 45.83            | 92.39             | 39.70            | 112.48                | 29.58          | 139.40  | 49,77  | 509.16  | 06   |   |
| GROCERY SHOPPING        | 16.25            | 35.68             | 12.31            | 34.58                 | 12.28          | 165.21  | 45.06  | 324.36  | 04   |   |
| SPICE AND CRAFT         | 13.05            | 26.85             | 7,80             | 13.05                 | دى.            | 67.78   | 9.07   | 141.96  | ¢    |   |
| SPORTS                  | പ                | 18.40             | 3.14             | 0.73                  | 1.05           | 15.45   | 253    | 41.52   | 01   |   |
| OTHER                   | 12.61            | 10.36             | 3.10             | 13.50                 | טג             | 36.79   | 2.00   | 81.50   | 01   |   |
| TOTAL INCOME            | <b>5-C_45</b>    | 2518.92           | 595.79           | 1269.42               | 316.59         | 2032.25 | 506.17 | 8061.65 | 1 00 | ļ |

# Appendix 10: MODELS FOR BUFFER WIDTH DETERMINATION

### **DETENTION MODEL**

For movement through the soil, the buffer width,  $L_b$  is determined by the detention model:

 $L_b = BFAC \times B_b^{0.5} \times n_b^{-0.3} \times K_b^{-0.2} \times S_b^{0.35} \times C_b$ 

where,

$$BFAC = \frac{L_{r} \times K_{r}^{2.5} \times K_{r}^{0.2}}{B_{r}^{0.5} \times S_{r}^{0.35} \times C_{r}^{0.5}}$$

## HYDRAULIC MODEL

For movement overland, the hydraulic model is:

$$L_b^{0.4} = HFAC \times B_b^{0.4} \times K_b^{-2.5} \times S_b^{3.25} \times n_b^{-1.5}$$

where,

$$HFAC = \frac{L_r \times K_r^{2.5} n_r^{1.5}}{B_r^{2.5} \times S_r^{3.25}}$$

Subscripts b and r refer to the new and reference buffers respectively, and:

| L <sub>b.r</sub> = | buffer width;  |
|--------------------|--|
| $B_{b,r} =$        | the degree of effectiveness;   |
| $K_{b,r} =$        | saturated hydraulic conductivity;  |
| $n_{b,r} =$        | Manning number, or surface roughness;  |
| $C_{b,r} =$        | soil moisture storage capacity determined as product of soil thickness<br>and moisture capacity; |
| $S_{b,r} =$        | slope of ground.   |

# APPENDIX 11 BASE COVERAGES CREATED FOR THIS ANALYSIS

| Coverage Name | Description  |
|---------------|--|
| GRENTEMP      | Watershed boundary. Used for clipping features of the Grand<br>Anse watershed      |
| TOURCAT       | Catchment boundary of the tourist-occupied catchment, the southern catchment.      |
| MIXCAT        | Boundary of middle catchment. It contains significant tourist and local residents. |
| RESCAT        | Boundary of the local resident-occupied catchment, the northern catchment.         |
| GASOILS       | Soils coverage   |
| GADRAIN       | Drainage network.  |
| GALUSEC       | Land use, including demographic information.                                       |
| GARD123       | Primary, secondary and tertiary roads.   |
| GAROCK        | Geology coverage.  |
| GATOPO        | Contour map.   |

-

. •

#### Appendix 12:

### BUFFER WIDTH DETERMINATION USING PC ARC/INFO

The buffer width approach in Pc ARC/INFO involves determining the buffer width associated with each soil type in immediate proximity with a drainage section. Thus as soil type changes along the drain, so too should the required effective buffer width. Using various commands in ARC/INFO, a database for computation of a buffer width for each soil type was created.

To determine the parameter values for the model a literature search was performed to cite reference puffers for total removal of faecal coliform, for each of the soil types within the Grand Anse watershed. The results of the literature search are shown in the Table below.

| Soil Type       | K       | <b>C</b> <sup>2</sup> | n <sup>3</sup> | S (m/m) | Width <sup>4</sup> |
|-----------------|---------|-----------------------|----------------|---------|--------------------|
|                 | (cm/hr) | (cm/cm)               |                |         | (m)                |
|                 |         |                       |                |         |                    |
| Fine sand       | 2.16    | 2.4                   | 0.10           | 0.01    | 30                 |
| Silty clay loam | 1.4     | 46.0                  | 0.10           | 0.07    | 10                 |
| Silt            | 2.16    | 16.0                  | 0.10           | 0.01    | E                  |
| Clay loam       | 1.4     | 4.0                   | 0.10           | E       | 10                 |
| Heavy clay      | 0.01    | 27.6                  | 0.10           | E       | 5                  |

Parameter values of the reference buffer.

1, Rencau (1978). 2, Todd, 1980. 3, Ven Te Chow (1965) 4, Hagedorn et al. (1981).

E. No value was specified in the report. An assumed value based on other information in the report was used.

Several assumptions and approximations were necessary to supplement the

information taken from the land capability study and the soil map. These assumptions are:

- \* soil depths in the land capability studies which were classified as shallow, moderate or deep were assigned values of 30 cm, 120 cm and 200 cm respectively.
- \* percolation values for drainfield construction were taken as the saturated hydraulic conductivity, K, when no other source from the particular soil type could be found.
- \* ground cover was assumed to be grassed and so a Manning value, n, of 0.10 was assigned to all soil polygons within the watershed.
- \* Slope values S, were taken from the general classes in the land capability information. These are defined within a slope range and may not be accurate on a small scale. The contour map information is likely to provide more accurate slopes and this could be competently achieved using the ArcTin module in Pc ARC/INFO. Unfortunately, the `University Kit' version which was used in this study. does not contain this module. Therefore, for slope values, the median of the soil slope ranges were used.
- \* a large area close to the beach had previously been a mangrove swamp. The area has since been filled with presumably material in close proximity. The predominant soil type was assumed to be clay loam and its parameter values were assigned from this soil type.

The following paragraphs seek to explain the methods used to build the

coverage or maps and the associated database used for the analysis. With an

understanding of the database structure, it will be easier to visualize the usefulness of

the results from employing the overlay techniques, discussed thereafter.

### 2. Soils coverage preparation

The database of the soils coverage was modified to facilitate calculations of the buffer width, the computations of which involved the product of exponential values of the soil parameter values. Two fields were created for each soil property. One contained the parameter value, the other was for its appropriate exponential value. For example, there was a field for slope and a corresponding field, called SLEXP, calculated from (SLOPE)<sup>0.35</sup>. Thus, the buffer width formula was simplified to the product of the values within the exponentiation fields. An additional field for the computed buffer width was also created in the database. The resulting database structure is shown below.

| FIELD NAME | TYPE | WIDT | DEC | INDEX | Comments               |
|------------|------|------|-----|-------|------------------------|
|            | i    | Н    |     |       |                        |
| SLOPE      | N    | 8    | 3   | N     | Ground slope           |
| SLEXP      | N    | 8    | 3   | N     | (SLOPE) <sup>0.7</sup> |
| N          | N    | 8    | 3   | N     | Manning number         |
| NEXP       | N    | 8    | 3   | N     | (N) <sup>-0.3</sup>    |
| К          | N    | 8    | 3   | N     | Saturated hydraulic    |
|            | _    |      |     |       | conductivity           |
| KEXP       | N    | 8    | 3   | N     | (K) <sup>-02</sup>     |
| С          | N    | 8    | 3   | N     | Soil moisture          |
| CEXP       | N    | 8    | 3   | N     | (C) <sup>-0.5</sup>    |
| BW         | N    | 8    | 3   | N     | Buffer width           |

Database structure for the soils coverage, GASOILS.

### 3. Drainage network coverage preparation

Additional fields containing parameters necessary for calculating travel time within the drainage channel were included. Travel time was not a significant variable here for the narrow watershed size meant that not more than ten minutes were required for the effluent to travel from the most remote points of the drainage network to the discharge point. Within this short time, no significant die-off of faecal coliform would be expected. However, it may be a significant factor in other watersheds and in these cases travel time may have to be included in buffer width calculations. The resulting database structure is shown below.

| FIELD NAME | TYPE | WIDT | DEC | INDEX | Comments                  |
|------------|------|------|-----|-------|---------------------------|
|            |      | н    |     |       |                           |
| GRADE      | N    | 8    | 3   | N     | Drainage slope            |
| Dn         | N    | 8    | 3   | Х     | Manning number within the |
|            |      |      |     |       | drain                     |
| L          | N    | 8    | 3   | N     | Length of the drain       |
| LEXP       | N    | 8    | 3   | N     | (L) <sup>077</sup>        |
| DnEXP      | N    | 8    | 3   | N     |                           |
| TOT        | N    | 8    | 3   | N     |                           |

Database structure fore the drainage network coverage, GADRAIN.

### 4. Land use coverage preparation

Information in this database consisted of values describing the purpose for which buildings are used and the impact on the physical infrastructure. This include the water demand, the contribution to pollution, and the existing facilities for domestic waste water disposal. Buildings were classified in terms of hotel type, commercial use or as homes for the local residents. A further field, called GROUP, which provided a numeric code for defining the building purpose was added. This was necessary for performing statistics queries in Arcplot, since the statistic command cannot be invoked for character fields.

As population density fluctuates during the course of the year, a stack of databases, each one representing a season, may be required. This was not practical within this project. Only data for the most critical time of the year, namely August, the month of peak occupancy rate during the wet season were included in the database. The land use database structure for the land use coverage is shown below.

| FIELD NAME | TYPE | WIDTH | DEC | INDEX | DESCRIPTION                       |
|------------|------|-------|-----|-------|-----------------------------------|
| CLASS      | С    |       |     | N     | Hotel, guest house, etc           |
| SIZE       | С    |       |     | N     | Hotel: large, medium, small       |
| ROOMS      | N    | 4     | 0   | N     | No. of hotel rooms                |
| WETWATUSE  | N    | 4     | 0   | N     | Daily per capita use of water     |
|            |      |       |     |       | during wet season                 |
| WETRATE    | N    | 4     | 2   | N     | Occupancy rate during the wet     |
|            |      |       |     |       | season                            |
| WASTEDIS   | с    |       |     | N     | Method of waste disposal. Sewer   |
|            |      |       |     |       | or on site treatment              |
| SEWERDIST  | N    | 8     | 2   | N     | Distance from sewer               |
| WETWATDEM  | N    | 8     | 0   | N     | Total water demand for each       |
|            |      |       |     |       | property in wet season.           |
| GROUP      | N    | 11    | 1   | N     | A numeric code to define the      |
|            |      |       |     |       | building type and class. This     |
|            |      |       |     |       | field was used for the Statistics |
|            |      | :     |     |       | command.                          |
| TYPE       | N    | 11    | 1   | N     | This is used in the Statistics    |
|            |      |       |     |       | command. The result of its class  |
|            |      |       |     |       | grouping is placed here.          |
|            |      |       |     |       |                                   |

# Database structure for the landuse database, GASLUSEC.

### **APPENDIX 13**

# SAMPLE CALCULATIONS FOR DAILY RUN-OFF, POLLUTION LOADING AND POLLUTION CONCENTRATION WITHIN THE GRAND ANSE WATERSHED

### 1. Determination of daily runoff.

Assume that the Rational Method applies (small catchment with small Time of Travel)

$$Q = ciA$$

c = 0.85 (high coefficient of runoff due to saturated soils)

i = 1.0 (typical 1:25 yr 10 hr intensity)

A = 220 acres

$$Q = 187 cfs$$

Total daily flow resulting from the event is:

 $Q_1 = 187 \times 3600 \times 10 = 6732\ 000\ ft^3 = 192\ 342\ m^3$ 

### 2. Determination of pollution load.

Assume typical FC concentration is  $5 \ge 10^7$  MPN/100 mL for a daily per capita flow of 50 gallons.

Also assume that for larger per capita flow, concentrations will be diluted proportionally.

For this catchment,

Total daily water use = 73 487 gallons = 330  $m^3$ 

Water use in the high risk zone: Local resident usage = 3500 gallons =  $16 \text{ m}^3$ Tourist usage = 27315 gallons =  $122 \text{ m}^3$  As tourists use about 100 gallons/d/person, then water quality is about 0.5 x 5 x  $10^7$  MPN/100 mL.

# Pollution loading is 3.85 x 10<sup>13</sup> MPN:

$$0.5 \times 5 \times 10^7 \frac{MPN}{100 \ mL} \times 122 \times 10^6 \ (mL) + 5 \times 10^7 \frac{MPN}{100 \ mL} \times 16 \times 10^6$$

## 3. Determination of concentration:

Concentration is 2.0 x 10<sup>4</sup> MPN/100 mL:

-

$$\frac{3.85 \times 10^{13}}{(330 + 1.92 \times 10^5) \times 10^4}$$