

**THIRD INTERNATIONAL FORUM ON TOURISM STATISTICS**

**ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT**

**Paris**

**53543**

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## FOREWORD

Tourism is a complex and multidisciplinary phenomenon which is difficult to define and to measure. Governments need to support economic policy decision-making by ensuring that the travel and tourism industry is accurately measured. This means that adequate analytical and statistical tools need to be developed. Governments are also required to work closely with the private sector and to increase the dissemination of ongoing statistical projects and achievements.

The International Forum on Tourism Statistics, set up in 1993 by the OECD and Eurostat, provides a unique platform for the regular exchange of views and experiences on developments in tourism statistics, both within the European Union (EU) and in other OECD countries. Major technical factors concerning the establishment of harmonised tourism statistics are debated in an environment that strengthens co-operation between governments, the private sector, researchers, academics, OECD/EU Member and non-Member countries and international organisations.

Following the meetings in Austria and Italy, the "Third International Forum on Tourism Statistics" was organised by Portugal's National Statistical Office and Tourism Directorate in co-operation with Eurostat and the OECD. This meeting was held in Sintra, Portugal, on 26-28 June 1996.

Numerous issues were discussed, including the better use of existing statistical sources of information for tourism statistics, ways of studying the positive and negative impact of tourism on the environment, models and forecasts in tourism, the role of new technologies in the dissemination of statistics to all partners, and the linking of tourism statistics with other socio-economic activities.

In order to give an overview of the information presented at the meeting, the OECD Tourism Committee has issued a publication of the proceedings. This book comprises all contributions which have been made available to the OECD. The publication managed by Mr. Alain Dupeyras of the Directorate for Financial, Fiscal and Enterprise Affairs at the OECD in co-ordination with Eurostat and the Portuguese authorities.

The views expressed in this publication do not necessarily represent those of the OECD, Eurostat, the National Statistical Office or the General Directorate of Tourism of Portugal. It is published on the responsibility of the Secretary-General of the OECD.



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## SEMINAR PROGRAMME

### *Opening*

#### OPENING SPEECH

The Portuguese Secretary of State of Commerce and Tourism

#### EUROSTAT'S ACTIVITIES CONCERNING TOURISM STATISTICS

Mr Marco Lancetti - Eurostat

### *Session I: "Sources of Information for Tourism Statistics"*

#### Chairman

Mr A. Lopes - INE (Instituto Nacional de Estatística)

#### NEW SOURCES OF TOURISM STATISTICS

Mr Leonard J. Lickorish - ETC (European Travel Commission)

#### THE PRIORITIES OF THE MANAGING SECTOR CONCERNING STATISTICAL INFORMATION IN TOURISM

Mr Remédio Pires - CTP (Confederação Turismo Portugues)

#### STATISTICS ON PRIVATE ACCOMMODATION EXEMPLIFIED BY THE DANISH STATISTICS ON RENTED DWELLINGS

Mr Erik Grib - Danmark Statistik

#### DERIVATION OF IRISH OVERSEAS TOURISM ESTIMATES

Mrs Maureen Delamere - Central Statistical Office of Ireland

### *Session II: "Tourism Statistics and Environment"*

#### Chairman

Mr Scott Meis - Tourism Canada

#### THE EVALUATION OF THE ENVIRONMENTAL FUNCTIONS AS A FUNDAMENTAL INSTRUMENT TO TOURISM PLANNING

Mr Ferreira Mendes - Universidade Nova

THE CONSTRUCTION OF SECTORAL ENVIRONMENT PRESSURE INDICATORS: THE CASE OF TOURISM

Mr Carmine Pappalardo - ISTAT

CONCEPT FOR A NATIONAL REPORT ON TOURISM, ENVIRONMENT AND NATURE PROTECTION IN GERMANY

Mrs Andrea Möller - DWIF an der Universität München

TOURISM, DEVELOPMENT AND ENVIRONMENT: NEW CRITERIA AND EXPERIENCES IN SPAIN

Mr Fernando Palazueo - AUIA (Arquitectos Urbanistas e Ingenieros Asociados, S.I.)

***Session III: "Models and Forecasts in Tourism"***

Chairman

Mr P. Costa - Ciset (Universita di Venezia)

FORECASTING TOURISM INDICATORS BY TRANSFER FUNCTION MODELS

Mr Armindo Carvalho - INE (Instituto Nacional de Estatística)

SOCIO-ECONOMIC STRUCTURES IN TOURISM REGIONS: COMPARISON OF SELECTED TOURISM AND NON-TOURISM COMMUNITIES IN AUSTRIA

Mr Peter Laimer - Austrian Central Statistical Office

NORWEGIAN BORDER SURVEY 1995

Mr Arne Rideng - TOI (Institute of Transport Economics)

SAMPLE SURVEYS ON ITALIAN INTERNATIONAL TOURISM

Mr Antonello Biagioli - UIC (Ufficio Italiano dei Cambi)

STREP: A FORECASTING MODEL OF INTERNATIONAL TOURIST FLOWS BY REGION

Mrs Mara Manente - Ciset (Universita di Venezia)

***Session IV: "New Technologies and Statistical Production"***

Chairman

Mrs Vanda Boavida - ICEP (Investimentos, Comércio e Turismo de Portugal)

THE ROLE NEW INFORMATION AND COMMUNICATION TECHNOLOGIES PLAY AS A MEANS OF SUPPORT FOR THE ELABORATION OF STATISTICS

Mr Sancho Silva - DGT (Direcção Geral do Turismo)

(FREE CONTRIBUTION)

Mr João Pombo - APAVT (Associação Portuguesa Agências de Viagens e Turismo)

GEOGRAPHICAL INFORMATION SYSTEMS IN TOURISM STATISTICS IN EUROSTAT  
Mr Evangelos Pongas - EUROSTAT

INFOBASE: AN INTEGRATED MULTIMEDIA APPROACH TO TOURISM INFORMATION  
Mr Andrea Macchiavelli - Gruppo CLAS

AN EXAMPLE OF GLOBAL DISTRIBUTION SYSTEM: AMADEUS  
Mr Arnaud Debuchy - Amadeus Marketing SA

***Extra Session: “Multimedia Presentation at INFT”***

Chairman  
Mr Reis Ferreira - ESHTe (Escola Superior Hotelaria Turismo do Estoril)

SIGRT - SIGRT DESCRIPTION AND OBJECTIVES  
Mrs Maria Elisa Almeida - DGT (Direcção Geral do Turismo)

PORTUGAL’S TOURISM RESOURCES INVENTORY  
Mr João Matias - INESC (Instituto Nacional Engenharia de Sistemas e Computadores)

THE WORK OF EUROSTAT IN TOURISM STATISTICS;  
(Video Presentation) - EUROSTAT

INFOEASY: THE APPLICATION OF MULTI-MEDIA TOOLS IN THE WORK OF  
EUROSTAT  
(Video Presentation) - EUROSTAT

***Session V: “Socio-economic Impact of Tourism - Macro Approach”***

Chairman  
Mr Victor Gaspar - Banco de Portugal

DEVELOPMENT OF TOURISM IN THE CZECH REPUBLIC  
Mrs Marie Vitakova - Ministry of Economy

TOURISM IN PORTUGUESE ECONOMY  
Mr Ferreira Amaral - ISEG (Instituto Superior Economia e Gestão)

THE ECONOMIC SIGNIFICANCE OF TOURISM - COMPARING CANADA AND WORLD  
TRAVEL & TOURISM COUNCIL ESTIMATES  
Mr David Wilton - University of Waterloo, Department of Economics

MONITORING KEY FIGURES ON EMPLOYMENT IN THE TOURISM INDUSTRY  
Mr Heerschap - CBS (Central Bureau Voor of Statistiek)

***Session VI: “Socio-economic Impact of Tourism - Micro Approach”***

Chairman

Mr Luís Todo Bom - AIP (Associação Industrial Portuguesa)

THE SQUEEZING OF COMPETITIVENESS OF THE HOTEL SECTOR AND THE NEED FOR A NATIONAL TOURISM OBSERVATORY

Mr Carlos Proença - Associação Portuguesa de Hotéis

TOURISM ENTERPRISES SITUATION

Mr Castelhão Costa - Fundo de Turismo

REGIONAL DIMENSION OF TOURISM ECONOMIC IMPACTS

Mr Antonio Verdugo - Instituto Estudios Turísticos

A METHOD OF MEASURING DEPENDENT EMPLOYMENT IN TOURISM

Mrs Caroline Escapa - INSEE (Institut National de la Statistique et des Etudes Economiques)

***Conclusions***

THE OECD TOURISM COMMITTEE: ROLE AND ACTIVITIES IN TOURISM STATISTICS;

CONCLUSIONS OF THE THIRD INTERNATIONAL FORUM ON TOURISM STATISTICS

Mr Alain Dupeyras - OECD (Organisation for Economic Co-operation and Development)

END OF THE FORUM

Mr Corrêa Gago - INE (Instituto Nacional de Estatística)

## OPENING ADDRESS

**Mr Jaime Serrão Andrez**  
**Secretary of State, Portugal**

To begin with I would like to, in the name of the Government which I represent, salute and congratulate the institutions who organised this **Third International Forum on Tourism Statistics**, where representatives from various national and international administrations, statisticians, academicians, researchers, entrepreneurs, tourism agents, etc. will be called upon to debate the various themes connected with the sector, namely the ones dealing with information and its treatment.

Actually, the theme one proposes to discuss here, in its various thematics, is current and of great importance, no matter which type of entities are involved in this strategic sector, for the development of the different countries' economies and their communities - be it at the macro- or micro-economic level. It becomes thus, important to widen the scope around the discussions activities' statistics, which in turn are object to a continuous technical follow-up performed by work groups and the proper jurisdictions of the World Tourism Organisation (WTO), the OCDE, the EUROSTAT and of each country where this sector carries an important load in the economy, as is the case of Portugal.

Concretely, in where it concerns the definition and the evaluation for strategic goals, as well as in where it concerns the priorities for the execution of the short term programmes to be implemented, the foreknowledge of the realities at the starting or finishing point, are fundamental instruments and these pass through the domains of the statistical variable which supports the information.

This is why, within the scope of the Portuguese Tourism Policy, the creation of a Tourism Observatory and the Inventory for Tourist Resources constitute priority actions for the Immediate Action Programme.

There are actually many difficulties, in this noble task of gathering, treating and interpreting statistical information. Although one may generally consider the present situation of the tourism sector's statistical production as being satisfactory, both from a quality and diversity point of view, there still are some gaps or insufficiencies which I hereby point out to you and which must be surpassed:

- a) the lack of statistical sources susceptible of ensuring the regular supply of elements regarding tourist economical accounts;
- b) expanded time spans for the availability of statistical data, especially in where it concerns the indicators which allow one to follow the seasonal fluctuations of offer and demand;
- c) the duplication of coincident statistical operations through the launching of surveys which are "parallel" to the ones promoted institutionally, with all the negative effects deriving from this;

- d) the overlap in the broadcasting of data concerning the sector's evolution, one not referring, in many circumstances, the scientific and sampling base which led to the obtaining of certain values;
- e) the lack of security regarding the elements supplied by the sector's companies, in where it concerns the inherent data on the present exploitation (revenue and costs);
- f) the lack of statistical elements on specific tourism products, as for example, golf, hunting, congresses, religious tourism and sports tourism;
- g) the coverage of the "regular" statistical information regarding registered lodging units (hotels, camp sites, holiday camps and tourist units in rural areas), which in the Portuguese case, constitutes a limited sub-set, bearing in mind the "weight" of the so called "parallel" offer which one urges to have legalised;
- h) the lack of knowledge by many of the sector's agents (companies, associations, tourist regions, etc.) of the dimension and the contents of the national statistical production in the area of tourism;
- i) the difficulties the producing entities have in transmitting to the sector's agents the updating of the base statistics, as well as their susceptibility for new routines or studies;

From what I have been give to observe, the areas to be debated in this forum intend to contemplate aspects which transcend the matters which one usually approaches in technical these meetings on tourism statistics, one noting an approach to innovative matters such as: "Tourism and the environment", "Models and forecasts" and "New information and communication technologies on tourism statistics."

Actually, the need felt by the different users, for statistical information regarding the definition of long terms strategies or tactical adjustments, which often are very important, has been growing parallel to the different difficulties felt in the obtaining of the same. Therefore, the challenge which is placed before us is the improvement of the utilisation of the existing sources of information, the search for other sources and the articulation of tourism statistics with that of other sectors'.

Tourism's transversal characteristics, encompassing the most varied activities - although strengthening its importance through its multiplying effects in economical and social terms - enlarges the frontiers of tourist reality and, therefore, making the definition of the activities to encompass in this grand task for the characterisation of the economical and social activities, as well as that of tourism, more complex.

The development of tourist activities has evidenced, for example, in a clear way, the need consider the existence of a strong dependant relationship with the natural, physical ecological and socio-cultural resources.

The knowledge, and the subsequent respect for the thresholds of utilisation of the cultural heritage, in the terms of the weight these resources bear on the environmental system, is understood as a fundamental condition for the maintenance of the propice conditions for tourist activities. There is an objective need to create a framework of basic statistical indicators which will allow one to evaluate the connections tourism/environment in a systematised and controlled way.

The need to anticipate or understand the interrelation of the behavioural and structural variables of Tourism, imposes continuous discussions and an exchange of the experiments performed in the different countries, with an analysis of the results within the scope of standardisation. In where it concerns, for

example, arrivals at the borders, Portugal has in this field an experience which certainly will be very much discussed.

Innovation did not forget to invade this technical-scientific field, something which makes the exchange of experiences opportune within the scope of evaluation and implementation of new techniques for the gathering of statistical information, with one trying to find out how statistics may take advantage of the adoption of new technologies in tourist activities, thus reducing costs and the "load" placed upon the companies.

Bearing in mind that the necessities in regards to tourism matters are not confined to the National Tourism Administrations, there being various categories of users with distinct profiles (agents, sector associations, local associations, researchers, etc.), it is of significance to complete the framework of the present statistical productions with complementary data, namely the ones which detail the multiplying effect of the tourist activities.

During the last years one executed directives and projects which were outstanding in their importance and which have come to play a predominant role in the concept and content of tourism statistics in the various international headquarters. I am concretely referring to the Manual on tourist economical accounts (OCDE), to the Resolutions of the International Conference on Travel Statistics and Tourism - Ottawa, 24 - 28 June/1991 (WTO), to the recommendations approved by the United Nations Statistical Commission in March 1993, and finally the EC Directive on Tourism Statistics on 23rd November 1995.

It behoves also to refer that in international terms, Portugal and the INE as well as the DGT followed all the works developed in organisms such as the WTO (World Tourism Organisation), the OCDE and the EUROSTAT which allowed Portugal to maintain its high level of domination and competence in regards to tourism statistics. Our country is in fact in a privileged position, as one finds a very strong correspondence between national statistics and the contents defined by the WTO in where it concerns concepts and basic tourist "units".

On the other hand, the range of indicators which are available in Portugal surpasses significantly those which exist in most countries, the reason for our country's relative ease in adapting to the demands from a new community directive regarding tourism statistics. In this dominion, it is also required that one innovates the national statistical system, deriving for example, from the need for expanding the process for the gathering data from "private lodgings" units and the amplification of the scope on the studies of internal demand.

Much has been done and much is left to do.

It is, therefore, with great satisfaction and interest that, after Venice and Vienna, Sintra a city with a vast cultural and historical heritage, acknowledged by the recent declaration by UNESCO as being a heritage to the world and humanity, may be host to such an important scientific event connected to the tourist activity.

The interest of which remains the registry by more than one hundred participants, one hundred of which are foreign delegates who came to us in representation of around thirty.

I am, myself, eager to get to know the conclusions which will be reached, namely the ones of the strategic directive types, being certain that they will help us to overcome some of the difficulties we face, as well as potentiate the opportunities we usufruct.

I look forward to them, wishing you all a good job, hoping, also that those who visit us will get the opportunity to get to know a little of our country, namely in where it concerns its rich tourist heritage - landscape, monuments, history, gastronomy, handicraft, culture, etc. - with relevance given to meeting our people and their welcoming manner.

Thank you very much for your attention.

## EUROSTAT'S ACTIVITIES CONCERNING TOURISM STATISTICS

**Mr Marco Lancetti, Eurostat  
Head of Unit D4 : Distributive Trade, Services, Transport**

### **The political background**

*The mission of Eurostat is to provide the European Union with a high-quality statistical information service.*

An essential prerequisite for the actions of the Union to support tourism is a thorough knowledge of the respective basic statistics. The European Parliament, the Council and the Social and Economic Committee have therefore emphasised the need for the European Union to play an active role in the production and dissemination of harmonised tourism statistics.

In the light of these guidelines, Eurostat is trying to respond to the growing economic, social and cultural importance of the tourism sector.

### **Short overview on the work conducted by the European Commission and by Eurostat in the field of Tourism Statistics since 1991**

First steps to develop tourism statistics were undertaken by the Commission in 1987. It was soon recognised that the greatest difficulty in preparing and publishing statistics on tourism at Community level is due to the fact, that data collected at national level are not fully compatible.

Concepts and methods used varied significantly from one Member State to another.

#### ***The Council Decision on a 2 year Action Programme on Tourism Statistics, 1991 - 1992***

In order to improve this situation the Council adopted in December 1990 a decision on a two year action programme in which the following objectives were set out:

- ➔ **analysis and evaluation of the long-term needs of the main users** (Community Institutions, National administrations, international organisations and economic operators) with regard to tourism statistics;
- ➔ **collection and dissemination of existing data on tourism;**
- ➔ **analysis of the systems that exist in the member countries** and those used by international organisations;

- ➔ **preparation of a Community methodological manual** for the compilation of Community tourism statistics.

In view of the creation of the European Economic Area, these actions were conducted by the 12 European Union (EU) member states (Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Portugal, United Kingdom) and those countries which were at that time part of the European Free Trade Association (EFTA) member states (Austria, Finland, Iceland, Norway, Sweden, Liechtenstein, Switzerland).

The Final Report concerning the two year tourism statistics action programme stated in its conclusions the actions which were to be undertaken after 1992. These actions are based on the results of the programme and on the orientations given by the EU/EFTA Working Group on Tourism Statistics, as well as by the Directors-General of the National Statistical Offices and by the Tourism Management Committee.

The actions take into account the need to apply a pragmatic approach consistent with the *principle of subsidiarity*.

This implies the consolidation of work already undertaken and the development of flexible but coherent monitoring instruments which optimise the use of the existing statistical systems.

Practically the priority actions undertaken since 1993 have focused on:

- ➔ The preparation and realisation of a **Council Directive on Tourism Statistics**, in order to collect and disseminate harmonised statistics at European level;
- ➔ The completion and consolidation of a **Methodology on Tourism Statistics**, with the objective of setting down a **Community Recommendation** to establish a framework for Tourism Statistics (compatible with international standards). This recommendation shall set the foundations for establishing comparable data on tourism at EEA level.

### ***The Council Directive on Tourism***

The European Commission elaborated a Council Directive in order to establish the appropriate legal framework for the collection of information on tourism in the European Economic Area.

The development of the Directive took almost three years. It was carried out in very close co-operation with the EU/EFTA member states, professional organisations and the respective International Organisations, in particular the World Tourism Organisation (WTO) and the OECD.

The Directive was adopted by the Council of Ministers on 16 November 1995.

The aim of the Directive is to harmonise and improve the statistics produced by the Member States (most of which are already existing) in order to set up a more efficient and uniform system of information on tourism supply and demand.

The Council Directive is fully compatible with the WTO-Recommendations on tourism statistics.

Thus the Directive will greatly improve the quality, the compatibility and the timeliness of tourism related information.

Principal elements of the Directive are:

1. *The capacity of tourism accommodation*  
(national and regional data)
2. *Occupancy in accommodation establishments*  
(national and regional data)
3. *Tourism Demand: Domestic and Outbound Tourism*  
(national data)

The Directive covers holiday, recreation and leisure travel as well as business trips.

### ***Draft Recommendation by the European Union on a Tourism Statistics Methodology***

A Recommendation is needed to fully consolidate the work carried out by Eurostat on the tourism statistics methodology.

Establishing a methodology within a recognised legal framework is not only of use to EEA countries but equally to all countries wishing to develop their national tourism statistics within harmonised international references.

The *WTO Resolutions* adopted by the United Nations in March 1993 were a first step in establishing internationally recognised basic terms and definitions on tourism statistics.

The Community Draft Recommendation takes the WTO recommendations as a starting point and remains fully compatible with them. It defines and adapts them to the European context and will provide a more comprehensive reference document for the elaboration of comparable statistics. It can also serve as a reference manual for the realisation and application of the Council Directive.

The Draft Recommendation sets down the essential concepts of tourism statistics. It divides the methodology into three parts:

- **Basic methodology** (demand, supply),
- **Tourism market segments** (cultural tourism, rural tourism),
- **Statistics related to tourism** (economic systems, environment)

### ***The TOUR Information System***

The information collected through the Directive and on the basis of the recommended Methodology will make up for an essential part of the Eurostat *information system TOUR*.

The TOUR data base also includes information from tourism related sectors, for example statistics on the Balance of Payments, Passenger Transport and Employment.

## **Recent developments in Eurostat's work on tourism statistics**

### ***Co-operation with Mediterranean countries***

At present Eurostat is envisaging a co-operation programme (1997 - 2000) between EU/EEA and Mediterranean Countries in the field of Tourism Statistics.

This action is a result of the Barcelona Declaration which was signed by the Ministers of Foreign Affairs of the fifteen Member States and the twelve countries of the Mediterranean in November 1995. The Declaration stresses the strategic importance of the Mediterranean region and establishes the Euro-Mediterranean partnership. One of the objectives is to develop and intensify the economic and financial co-operation. The programme comprises the EEA countries and the following Mediterranean Countries: Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Palestine, Syria, Turkey

An outline of a co-operation programme in the field of tourism statistics was developed by a Task Force organised by Eurostat and presented at the second Euro - Mediterranean seminar on statistical co-operation held in Italy on 18 - 20 of June.

In a first preliminary phase of work Eurostat carried out a detailed analysis of the existing statistical systems on tourism in the twelve non-EU Mediterranean countries.

### ***The Methodology on Tourism Statistics in a Multi-Media version***

Eurostat is in the process of preparing a multi-media version of its Methodology on Tourism Statistics.

The objective is to provide better access to the Methodology and to improve its user friendliness. The multi media version of the Methodology will allow for an interactive approach.

The underlying idea is to display the Methodology in a way that allows for direct cross-reference (by "mouse-click") between Eurostat's work in tourism-related sectors (for example the transport sector, BOP-statistics) and the work of other International Organisations (WTO, OECD), National Institutes, research agencies, a glossary on existing definitions and a direct link with statistical tables, etc.

### ***The establishment of improved systems for data transmission***

For the elaboration of future publications on tourism Eurostat proposes to set up a network of contributors from the Member States.

The new tool with which this transmission is planned to be carried out is named STADIUM, a management tool designed for the electronic transmission of statistical data.

STADIUM comprises 2 components:

- a server component used for classifying, routing and maintaining an audit trail of datasets and
- a client component used for dispatching and reception.

STADIUM bypasses transfer limitations that communication protocols often have (up to 8-bit datasets can be processed). Special attention has been given to the transfer of confidential information. Data is therefore encrypted before transmission.

The installation of STADIUM is carried out by Eurostat and is free of charge. At present STADIUM is being installed at numerous National Statistical Offices and other National Institutes providing data. In the near future tourism statistics shall profit from this new facility.

### *The dissemination of statistical information on tourism*

Eurostat has been publishing a *Tourism Statistics Yearbook* since 1987. The yearbook is an image of the TOUR information system and comprises a wide range of tourism and tourism related data, at both national and regional level.

Monthly data on tourism are published in the short term statistics bulletin "*Distributive Trade, Services and Transport*".

Eurostat also published a high quality textual publication named "*Tourism in Europe*" analysing the data and describing the tourism phenomenon in each of the Member States of the European Union (EU). The publication received a positive feedback and is in a high demand. An update of this publication is currently being prepared.

The short publication "*Tourism in the European Union - Key Figures 1994 - 1995*" was prepared for the International Tourism Fair in Berlin in March 1996. The publication summarises the very latest data and trends in European tourism. It has been widely distributed and was very well received.

Eurostat also provides users with data through *magnetic and electronic media*. It has for the past four years produced a *CD-ROM* which includes a section devoted to tourism statistics.

Eurostat participated actively in the *International Tourism Fair in Berlin in March 1996*.

Eurostat conducted a seminar at the Fair, at which the latest statistical results were presented as well as a *Draft Methodology on Congress and Conference Tourism*.

In co-operation with DG XXIII, Eurostat was also represented at an Information Stand at the Scientific Centre of the Fair and received a very positive feedback concerning its work and the publications displayed.



## **THE OECD TOURISM COMMITTEE: ROLE AND ACTIVITIES IN TOURISM STATISTICS**

**Alain Dupeyras**  
**OECD Tourism Policy Section**

### **Introduction**

The Tourism Committee is a forum for co-ordinating tourism policies and actions. It meets once a year to discuss major developments affecting the industry, takes action when required, assembles material on policies in its Annual Report and contributes to the work of other parts of the OECD. In 1971, the Committee created a Statistical Working Party whose main purpose is to provide the Committee and the 27 Member countries with the appropriate background material on which to base policy-making discussions and decisions. The Tourism Committee was part of the former OEEC and continued its activities as part of the OECD after its creation in 1961. The annex 1 presents the mission statement for the Tourism committee. The annex 2 shows a list of recent publications.

The Committee co-operates frequently with other international organisations including the World Tourism Organisation, the Commission of the European Communities, in particular with Eurostat; it is also envisaging some co-operation with the World Trade Organisation in relation with the liberalisation activities. The Committee organises regular consultations with industry representatives.

In 1995, the Committee undertook a major assessment of its activities and adopted a challenging set of policy-oriented activities for 1996 and beyond which fulfil the wishes and concerns expressed by Delegates and are in line with the medium-term priorities of the Organisation. The main fields of activity relate to the liberalisation of industry and travel related activities, the analysis of employment and labour force issues, the tourism policy analysis and co-operation and the assessment of economic performance and the significance of tourism to Member nations. This note gives a particular focus to the later activity.

### **The role and the contribution of the Statistical Working Party**

The role of the State in tourism will be increasingly judged on its ability to provide industry and other levels of governments with the information they need to draw up their own strategies. This requires in particular detailed, reliable and comparative statistical data covering the main tourism-related fields. The tourism Committee will therefore pursue the development of tourism indicators to provide a more accurate assessment of the structure and performance of tourism activities, productivity in the sector, and the importance of tourism in international trade in services.

In that perspective, the role of the Working Party is a twofold one: firstly, the Working Party serves the Tourism Committee for the purposes of its policy discussions; secondly, it works to integrate major current statistics activities (revision of SNA, new definitions and global classifications, etc.) in tourism statistics.

The Working Party has regularly contributed to the work of the Tourism Committee and its analyses. Its work and research have successively covered international tourism, national tourism, tourism economic accounts (methodology, collection and analysis). The Working Party has also looked more specifically at statistics on passenger transport, balance of payments, trade in services, employment and those relating to rural development.

The Working Party co-operates on a permanent basis with the World Tourism Organisation and Eurostat, particularly to improve international harmonisation of concepts and standards.

The Working Party also makes an important contribution to the world of statistics in general. It contributes to the development of concepts and standards. In 1991 it set up a Group of Experts on tourism economic accounts to help Member countries implement the Manual on Tourism Economic Accounts. It monitors progress made in gathering data at national level. It offers diagnosis of existing shortcomings in statistics and of fields where improvements are required.

### **Statistical work in progress and projects envisaged**

In 1985 the Tourism Committee launched the project on tourism economic accounts with the aim of setting up an integrated system of statistics to assess the economic importance of tourism in Member countries with the help, *inter alia*, of concepts and definitions used for national accounts purposes. The objective was thus to give the broadest possible overview of the structure and significance of the tourism industry while allowing for international comparisons. The first phase of this conceptual work was completed in 1991 with the publication of the "*Manual on tourism economic accounts*" ("the Manual").

Since 1992, Member countries have concentrated their efforts on giving practical effect to this concept which provides a basic framework for gathering data on production, consumption, the domestic tourism market, value-added, gross fixed capital formation and employment in tourism industries. The Group of Experts on tourism economic accounts offers delegates support in implementing this concept. Today, the results are satisfactory. Over two-thirds of Member countries are providing the Secretariat with data. However it should be pointed out that since implementation of the Manual was started the questionnaire has been revised twice to take account of new international classification standards and to improve their structure, and to resolve a number of methodological questions.

Initial analysis published in "*OECD Tourism Statistics: Design and Applications for Policies*" shows the Manual to be an effective analytical tool. For example, data collected for Austria, Canada and Spain presented in that publication show tourism to be a major economic force in the three economies, especially in terms of employment and value-added. The report shows users that the Manual makes it possible to situate tourism in the national economy as a whole. It significantly increases analytical potential in taking an internal view of the sector, as well as across the different sectors. It demonstrates more convincingly the importance of tourism in the economy. The report shows that this tool is the only one which allows inter-country comparisons in an international perspective. It can also tell policy-makers which branches of the tourism industry generate the highest added-value. Moreover, if this exercise is repeated regularly, it will show trends in the structure of the tourism industry and its performance.

However, the Manual only goes halfway and additional detailed data are needed to give an overall measurement of direct and indirect tourism activities. The Manual also has to be revised to reflect new tourism definitions and classifications adopted by the United Nations.

According to the Working Party this instrument should be directed to preparation of a tourism satellite account as part of the new System of National Accounts adopted in 1993 so as to be better able to reply to questions from users. Methodological developments are under way to relate the OECD tourism economic accounts with the new methodology proposed in SNA93, and to examine how to use data and results of the Manual to develop calculations of shares of tourism in GDP of the different economies.

At the same time visibility of OECD tourism economic accounts has to be increased. The publication to appear in 1996 with the aim of communicating the results of work in a clearly understandable form to policy-makers meets this need. As soon as the data permit, the Committee will also publish the database on tourism economic accounts in its entirety.

Statistics on international tourism are drawn from a database (1974-1995) containing information on tourist flows to OECD countries (arrivals at frontiers and nights spent in accommodation), accommodation (capacity, occupation rates), payments (receipts and expenditure) in respect of international tourism, payments for transport and reasons, transport modes, employment and prices.

These data allow users to follow international tourism trends in the OECD area, identify the main tourism generating and receiving countries throughout the world, map tourist flows within the OECD area and situate them in a broader global framework. Given that the OECD area represents about 70 per cent of the world tourism industry, such data are much valued by users. They have been regularly published since the beginning of the 1960s in the Committee's annual report: "*Tourism policy and international tourism in the OECD Member countries*"; the next edition will appear in July 1996. Efforts will also be made to distribute the data electronically. The data published are included in numerous publications in Member countries and contribute to recognition of the Committee's work. Each March, the Tourism Committee issues a press release detailing recent trends in all OECD Member countries. This press release is traditionally presented at the International Tourismus Börse (ITB) in Berlin. Lastly, historical series (1980-1995) could be the subject of a second, ad hoc publication.

The other important aspect of international tourism statistics concerns the processing and collection of data. It is primarily in this field that the improved sharing of work among international organisations could raise productivity, reduce the burden of work on national governments and avoid any duplication.

For the OECD countries there are basically three international organisations dealing with tourism statistics. These are the World Tourism Organisation (WTO), Eurostat and the Organisation for Economic Co-operation and Development (OECD). The organisation for Asia-Pacific Economic Co-operation (APEC) also concerns itself with tourism statistics.

International statistical co-operation also extends to conceptual and methodological developments.

The three organisations are complementary. OECD is the sole global forum for the most advanced countries and sets up statistical tools suited to advanced national statistics systems (e.g. tourism economic accounts). The WTO is more concerned with devising world-wide guidelines and recommendations applicable to all countries with widely differing levels of development. Eurostat prepares statistical regulations based on Community methodology, such as the Directive on tourism statistics, which are binding on all its members.

For some years WTO and OECD (Statistical Working Party of the Tourism Committee) and more recently EUROSTAT (a working party on tourism statistics was set up in 1987) have collaborated, notably

on methods and concepts, with a view to increased international harmonisation of definitions and classifications.

The Working Party has thus been much involved in preparing and adopting international definitions and classifications discussed at the International Conference on Tourism Statistics in June 1991 in Ottawa and subsequently approved by the Statistical Commission of the United Nations in 1993.

On the same lines, the Working Party has over the last three years co-organised an international forum on tourism statistics in partnership with Eurostat and a Member country. The forum is an occasion for independent scientific exchanges for numerous purposes: to promote international tools adopted by Member countries among representatives from the private sector and universities; to discuss scientifically how to use the work of international organisations.

For users, improved international co-ordination makes it possible to develop the harmonisation and comparability of statistics so as to increase recognition of the tourism industry and its economic importance at national and international levels.

In the 1980s, the Tourism Committee developed a second database on national tourism demand published in 1989 in "*1974-1985 National and international tourism statistics*". This database contains available information from 1970 to 1986 on net departure rates, total number of travellers, total number of holiday trips, total number of nights spent, average duration of trips, total expenditure, tourist characteristics (age groups, socio-economic categories) and characteristics of stays (transport mode, types of accommodation, reasons for travel, organisation of trips, main destinations).

For users, these data bring out the importance of national tourism which makes up the primary part of tourism activity in the OECD countries. The Working Party decided to update the existing database and will undertake a feasibility study for the extension and renovation of the database, particularly to include short stays and other reasons for travel.

In the context of the OECD Jobs Study, the Tourism Committee has devoted considerable efforts to questions linked to employment in the tourism industry. The work done has demonstrated the job creation potential of tourism and has also focused on the absence of detailed statistics on labour market trends. The Working Party is giving this matter its consideration with a view to creating a viable statistical framework and methodological guidelines in order to find out the number of persons employed and types of jobs performed.

A number of discussions have taken place within the Working Party or the international forum on tourism statistics. A pilot survey is under way in some ten member countries supported by the Statistical Office of the Netherlands.

For users, gathering data on employment in the tourism industry can have two basic objectives. Data collected can be used to describe and analyse the present situation in the tourism industry in terms of persons employed, labour force characteristics, working conditions, education and training. They may also allow analysis of the impact of changes in tourist expenditure on employment levels and structures in the different tourism sectors.

*Annex 1*

**Mission Statement for the Tourism Committee**

The mission of the Tourism Committee is to promote action to maximise the benefits of tourism to the economies of OECD Member countries by:

- increasing the understanding of the economic importance of tourism;
- promoting the liberalisation of policies towards international tourism flows;
- fostering international co-operation in these fields;
- providing a forum for dissemination, analysis and benchmarking of the tourism policies and administration of member countries against comparable economies.

In pursuit of these goals, the Tourism Committee:

- a) provides a forum for discussion by policy-makers and administrators of current issues concerning the liberalisation of international tourism, the monitoring of trends in tourism policies, the changes in the industry and (the development of statistical tools, including a database);
- b) prepares analysis of a wide range of policy issues for consideration by policy-makers, and where appropriate for publication to a wider audience; undertakes special studies and projects on key issues;
- c) prepares analysis of international tourism trends and disseminates comparable and reliable statistical information; develops measurements of the economic importance of tourism in the OECD economies;
- d) publishes reports, including an Annual Report on tourism policy;
- e) monitors the observance of the "rules of the game" set out in the inventory of measures perceived as obstacles to international tourism, in the OECD Codes of liberalisation related to tourism and in the Decision-Recommendation on international tourism, and provides a forum for dispute resolution under these instruments; examines the possibility of strengthening existing instruments;
- f) conducts country by country examinations of national tourism policies; identifies and assesses options to address major challenges through rigorous analysis and exchange of information on policy initiatives;
- g) provides a forum for discussion with the industry, the academics and other groups through consultation procedures, fora and seminars;
- h) engages in dialogue with Non-Member countries;
- i) co-operates with other international organisations.

*Annex 2*

**Publications**

Tourism Policy and International Tourism in OECD Countries 1994-1995  
(to be released in Spring 1997)

OECD Tourism Statistics  
Design and Application for Policies

Tourism Policy and International Tourism in OECD Countries 1993-1994  
Special Feature: Tourism Policies and Actions

Tourism Policy and International Tourism in OECD Countries 1992-1993  
Special Feature: Tourism and Employment

Tourism Policy and International Tourism in OECD Countries 1991-1992  
Special Feature: Tourism Strategies and Rural Development

National and International Tourism Statistics. 1974-1985, 1989

Manual on Tourism Economic Accounts, OCDE/GD(91)82, 1991

Inventory of Measures Perceived as Obstacles to International Tourism in the OECD Area,  
OCDE/GD(91)116, 1991

## **NEW SOURCES OF TOURISM STATISTICS**

### **User Experience by the European Travel Commission and the European Tourism Action Group**

**Mr Leonard J. Lickorish, ETAG/ETC**

Tourism Statistics are generally criticised by main industry users. This is partly because governments, the principal suppliers of data on international traffic are slow in publishing information. Furthermore, in recent years many have failed to modernise their traditional recording systems adequately, as old methods fail due to diminishing control practices of which they were a by-product. The aim of the European Union to create a borderless Europe will in theory lead to a dismantling of such old records.

The problem was foreseen early on. In 1973 the European Travel Commission published "A European Programme for Travel Statistics", suggesting the replacement of frontier and accommodation record systems, basically police controls, with visitor surveys. In 1989 WTO published "Guidelines for the Collection and presentation of Domestic Tourism Statistics". Since 1990 WTO, OECD and Eurostat have devoted much attention to Definitions, Methodologies and Studies to improve essential technical information needed by governments and industry.

These tasks and notably the work of WTO endorsed by the United Nations Statistical Commission have proved very beneficial. However, the chief problem remains, because governments, the source of key information, have been reluctant to develop new practices, update systems, and ensure comparability, as these necessary steps involve investment of funds.

Tourism continues to grow in absolute terms and potential with vast economic and social consequences. But the inadequacies in basic data lead, in the opinion of many in the industry such as the WTTC, to a lack of appreciation and understanding by governments themselves, low priority for the trade, in spite of its position as the leading world industry, and inappropriate strategies and policies. Industry however, is chiefly concerned with market trends, investment guidance and performance indicators.

Fortunately as official systems decline the widespread introduction of sample surveys and the greater role played by industry, institutions and market research organisations has substantially increased available data. There are now many producers of source material in addition to governments. Provided that more progress can be made in standardisation, methodologies and classification systems to improve compatibility, these varied and partial records can be very useful. It may be necessary in future to use many sources, to fit the big picture together. Much more attention must be paid to labelling and describing source material. Even today many records are flawed by inadequate description. For example, estimates of US visitors to Europe are often reported in terms of the addition of all arrivals at each frontier crossed. This inflates the true movement by two to three times.

However, one of the problems arising from the dispersion of data collection is the difficulty of access, partly because there are few if any satisfactory data centres and partly because availability is restricted or very expensive.

There are differences in user needs and thus in statistics provided from the varying sources. Generally governments produce overall and basic economic information and traffic data, and to a minor extent some indications of tourism impact on national interests. These broad measures are useful and necessary for the trade, if efficiently produced, but they do not go far enough. Tourism is essentially a market force, a demand movement, not a single industry, and so the trade needs demand side information often in detail analysing demand trends in an increasingly volatile business, for guidance on marketing, competition, productivity including benchmarking, and investment.

Unfortunately there is little co-ordination of statistical information amongst the growing number of useful producers in Europe. In the USA the US Travel Data Centre does good work with the Travel Industry Association of America. ETAG has proposed a similar endeavour in Europe.

Partly as a result of this weakness in communication government and industry figures are not always compatible, adding to the difficulties arising from delays in publication in the public sector. Even when there is agreement on standards and definitions these may not be respected because funds are not available to update old systems. Thus in Europe government backed surveys are not all wholly compatible, nor comprehensive.

Eurostat's efforts to help bring about a uniform system are commendable, but much hampered by this reluctance by government to invest in new systems. There is still a long way to go. Their new proposals for measuring incoming movement based on overnights stays, a system limited to commercial accommodation, cannot produce comprehensive results, as a substantial proportion of travellers use private accommodation. The system does not fit the WTO recommended practices easily, as it is an attempt to use supply side mechanism to measure demand. Eurostat is not in fact the source or producer as data will come from the differing individual country systems.

Increasingly countries and their trades must look to sample surveys to measure large traffic flows. Such surveys can provide substantial and up to date information relatively cheaply.

There are four categories of tourism statistics which might be considered in general use and all are affected by the introduction of new sources, principally non-government, but, they cannot replace the essential state records of total movement.

#### DEMAND

1. Records of scale/size. Traffic movement (volume) and expenditure (value)
2. Market information; socio/economic, market research analysing demand/consumer preferences.

#### SUPPLY

1. Capacity; stock of plant, services, facilities.
2. Production records; including tests of performance/efficiency (occupancy rates for accommodation, load factors for transport, and productivity measures).

Most countries in Europe now have the benefit of national surveys, usually household based covering travel by the resident population for domestic and foreign journeys. Some are government operated, some by ETC national tourist office members, some on a co-operative basis with industry. These are supplemented by industry surveys, and a range of institutional or commercial surveys. New technology makes the provision of information not only necessary for market purposes, with increasing specialisation and segmentation as volume rises, but practical in terms of cost and time.

There are a number of national surveys which will carry items from a number of different interests. This is increasingly common with regular shopping or market testing.

There is a limited application of surveys to incoming international movement, easy when access to the country is channelled through a small number of entry ports as in the case of islands, but more difficult with multi-access.

It would be a great step forward if the main surveys available in Europe alone could be the subject of regular reporting on scope, method, compatibility and availability; a prime task for the governmental bodies concerned.

ETA and ETAG have used material from one of the most advanced of the European non-governmental systems the European Travel Monitor, and within its limits it provides a useful rapid and comparable source of key European data.

A number of institutions and commercial concerns, including research and consultancy companies produce useful information on specific sectors or markets. The Economist Intelligence Unit's reports in London are an example. There are a number of others.

It is for this reason that both ETAG and ETC have urged a collective effort to provide an efficient European Data Centre with the help of the European Union.

The World Travel and Tourism Council publishes new information regularly, notably data relating to national accounts, tourism gross output, investment, tax yields. All of which helps to fill the gap in basic information much of which should come from government.

A number of principal industry associations provide very useful data on a regular basis, IATA, EAA (Association of European Airlines), publish regular and up to date traffic movement figures. Other transport information is available. Hotel occupancy figures are often easily accessible. Visitor attendance at tourism sites, and resort and tourism city information is increasingly reported. A number of valuable experiments, some on a co-operative basis as in the UK, have measured day visitor traffic and demonstrated the very substantial economic impact of such traffic, in the case of the UK greater than the value of the domestic visits with overnight stays.

ETC commissioned a study by experts from the George Washington University 10 years ago into the main sources of statistical information for Tourism in North America. The inventory included 26 US Federal Government Agencies alone with tourism related tasks, which they classified as Administrative, General Purpose Statistics, Transportation, Operation and Services and Promotion. In addition there were other agencies, State regional and municipal activities.

The study then listed 36 industry organisations some of which had data collection programmes. The majority carried out some form of assembling material related to their trade.

Another Group of considerable importance were described as the private data vendors, some of whom produce and maintain data series of value on a continuing basis. A limited number were described by the study as first priority sources.

Quite a number provided “value added” in the form of processing government and other published material, for presentation and interpretation to industry interests. This service can be important in sectors where small business is predominant and suitable advisory services, in marketing for example, would be necessary.

The ETC has a long experience of sponsoring co-operative research by National Tourist Offices and industry. In recent years three major surveys were carried out, co-sponsored by bodies such as the International Hotel Association and ETAG, and supported by the European Commission (DGXXIII), into Incentive Travel, Youth Travel, and Senior Citizen Travel. The results were presented at a representative industry conference so that practical follow up would result.

There is undoubtedly room for extension of such activity which would free scarce research funds for a more ambitious programme and avoid duplication in international market research.

One area of concern has been the provision of forecasts. In view of tourism’s record as the world’s largest growth trade, with capability of doubling in size in the next two decades, forecasting techniques deserve a higher priority.

The broad estimates of the WTO, almost the sole source of regular global reports are certainly useful. However, inevitably they tend to be based on projections of government records of traffic movement which are increasingly subject to change or cutback.

A number of industry sources, especially in air transport, national, regional and local governments in city planning, institutions and universities do work in this field. Some in a highly sophisticated way, But they never seem to meet to discuss the basis of their work, which must relate to potential, and secondly the assessment of external factors affecting the achievement of the potential.

Such work requires exchange of ideas or assessment and scenarios for the future. Furthermore the background and assumptions for the forecasts are often not made available.

In an increasingly volatile world tourism market longer term forecasts need a number of varying scenarios for practical guidance, not simply one “target” figure. ETC and ETAG are considering organising on an experimental basis a Transatlantic Forecasting and Research meeting with the public and private sector interests in 1997. ETC in fact held such a meeting some years ago with much success, but there has been no regular meeting place since.

Perhaps the most important conclusion is that while there has been much progress in the last few years, in Methodologies, techniques and range of data available, there is still a long way to go.

Government systems are affected by a decline in old practices and lack of resources and incompatibilities, consultation is lacking.

Non-government systems are growing in a variety of forms, again using varying methods and definitions, and often with restricted access to results.

There is a vacuum in co-ordination and co-operation. Even the national tourist offices and the European Commission carry out separate research activities when pooling resources might be more appropriate in some cases.

But the first task is to know what is going on, what is available, and to achieve this the establishment of a system or forum for co-operation.



## **DERIVATION OF IRISH OVERSEAS TOURISM ESTIMATES**

**Mrs Maureen Delamere  
Central Statistics Office of Ireland**

The national statistical office of Ireland is the Central Statistics Office (CSO). Two continuous sample surveys of passengers, the Country of Residence Survey (CRS) and Passenger Card Inquiry (PCI), are carried out by the CSO. The results of these surveys are used in conjunction with total passenger movement figures, supplied by the transport companies, to provide the national estimates for overseas tourism and travel. For further information on these two surveys and their methodology, please contact the Central Statistics Office directly (Tel: (021) 359000, Fax: (021) 359263, E-mail: Delamerem@CSO.ie).

### **Summary**

Estimates of passengers carried cross-classified by route, country of residence, purpose of journey and ticket type are calculated.

Passenger returns from operators provide numbers of passengers by route. The Country of Residence Survey provides a country of residence breakdown for each route. The Passenger Card Inquiry provides a purpose of journey by ticket type breakdown for each country of residence in each route.

### **Outline of Methodology**

#### ***1. Numbers of Passengers***

Monthly returns giving the number of passengers arriving and departing on all overseas flights and sailings are supplied by the air and sea carriers.

These returns enable arriving and departing passengers to be classified according to the 42 strata which are shown in Appendix 1. These strata distinguish route, port and carrier and, for air passengers, also differentiate between scheduled and unscheduled flights.

#### ***2. Country of Residence Estimates***

The Country of Residence Survey is used to provide analyses of arriving and departing passengers by Country of Residence.

In this survey, a sample of sailings and flights is selected and a systematic sample of passengers on each is surveyed. The selection of sailings and flights is done in such a way as to ensure proper representation of day and night sailings/flights and of week-day and weekend sailings/flights.

On the selected sailings/flights, a 1 in 5 systematic sample of passengers is selected and their country of residence is recorded by the interviewer. The country of residence is taken as the reply to the question "What is your country of residence".

For each period (January - December), the survey sample results are summarised into the 42 strata detailed in Appendix 1 and grossed up to the total passenger numbers for the strata. Arrivals and departures are treated and grossed up separately.

Thus the Country of Residence Survey provides, for overseas arrivals and departures, a breakdown of the total passengers carried in each stratum (Appendix 1) by the country of residence.

### ***3. Numbers of Visitors***

To produce quarterly tourism estimates, the detailed Country of Residence Survey results are summarised into 48 area of residence by route/mode cells (the areas and routes/modes are given in Appendix 2.)

### ***4. Passenger Card Inquiry(PCI)***

The Passenger Card Inquiry details purpose of journey and ticket type and country of residence for all passengers. Expenditure, length of stay and fare payment details are for Irish passengers on incoming routes and overseas passengers on departing routes.

#### *(i) PCI - Purpose of Journey, Ticket Type*

The returns from the PCI are used to provide a purpose of journey by ticket type breakdown of visitors in each cell. Appendix 3 describes the purposes of journey and ticket types distinguished.

In the PCI, sailings and flights are selected ensuring as far as possible a fully representative coverage and inquiry cards are distributed to all passengers or groups of passengers on the selected sailings/flights. Completed cards are collected and returned to the CSO for processing. When time permits, the enumerators assist the passengers in the completion of the cards.

In the CSO, the completed cards for each quarter are edited and erroneous cards are removed.

The remaining cards are then summarised into area of residence by route/mode cells (Appendix 2). Within each cell, the purpose of visit by ticket type distribution of persons is calculated and applied to the estimated total number of visitors in each cell per country of residence estimates from the Country of Residence Survey. This provides estimated numbers of visitors cross-classified by cell, purpose of journey and ticket type.

#### *(ii) PCI - Average Expenditure, Length of Stay and Fare Payment*

The PCI cards which contain expenditure, length of stay and fare payment data are used to estimate average expenditure, length of stay and fare payment for each cell by purpose of journey by ticket type combination.

These averages are combined with the estimated numbers of visitors already derived to provide grossed up estimates.

These estimates of numbers of visitors, expenditure, length of stay and fare payments are available for every cell by purpose of visit by ticket type combination.

#### ***5. Final Estimates for Irish Visitors Abroad***

The data for the cells relating to Irish (resident) visitors is combined to provide the estimates for Irish Visitors Abroad.

The data on numbers of Irish visitors abroad and length of stay are published as such while the data for expenditure and fare payment is summarised to provide the published expenditure (including international fares but excluding passenger fare payments by Irish visitors to Irish carriers) figures. (I)

#### ***6. Final Estimates for Visitors to Ireland***

The data for the cells relating to non-Irish resident visitors is combined to provide the estimates for Visitors to Ireland.

The data on numbers of visitors to Ireland and length of stay are published as such while the data for expenditure and fare payment is summarised to provide the published expenditure (excluding international fares but including passenger fare receipts of Irish carriers from visitors to Ireland) figures.(II)

Passenger fare receipts data are provided by Balance of Payments Division.

If (I) subtracted from (II) yields a positive figure, then this implies that there is a net inflow of tourism revenue. The converse is also true.

*Appendix 1*

**Country of Residence Survey Grossing Strata**

Stratum No.	Stratum Definition
01	Dublin Air Cross Channel Irish Scheduled
02	Dublin Air Cross Channel Irish Unscheduled
03	Dublin Air Cross Channel Foreign Scheduled
04	Dublin Air Cross Channel Foreign Unscheduled
05	Dublin Air Continental Irish Scheduled
06	Dublin Air Continental Irish Unscheduled
07	Dublin Air Continental Foreign Scheduled
08	Dublin Air Continental Foreign Unscheduled
09	Dublin Air Transatlantic Irish Scheduled
10	Dublin Air Transatlantic Irish Unscheduled
11	Dublin Air Transatlantic Foreign Scheduled
12	Dublin Air Transatlantic Foreign Unscheduled
13	Shannon Air Cross Channel Irish Scheduled
14	Shannon Air Cross Channel Irish Unscheduled
15	Shannon Air Cross Channel Foreign All
16	Shannon Air Continental Irish Scheduled
17	Shannon Air Continental Irish Unscheduled
18	Shannon Air Continental Foreign All
19	Shannon Air Transatlantic Irish Scheduled
20	Shannon Air Transatlantic Irish Unscheduled
21	Shannon Air Transatlantic Foreign All
22	Cork Air Cross Channel Irish Scheduled
23	Cork Air Cross Channel Irish Unscheduled
24	Cork Air Cross Channel Foreign All
25	Cork Air Continental Irish Scheduled
26	Cork Air Continental Irish Unscheduled
27	Cork Air Continental Foreign All

### Country of Residence Survey Grossing Strata

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Stratum No.	Stratum Definition
28	Dunlaoire Holyhead Car/Coach
29	Dunlaoire Holyhead Foot
30	Service discontinued
31	Service discontinued
32	Rosslare Sealink Cross Channel Car/Coach
33	Rosslare Sealink Cross Channel Foot
34	Rosslare Continental Car/Coach
35	Rosslare Continental Foot
36	Cork Sea Cross Channel Car/Coach
37	Cork Sea Cross Channel Foot
38	Cork Sea Continental Car/Coach
39	Cork Sea Continental Foot
40	Rosslare B&I Cross Channel Car/Coach
41	Rosslare B&I Cross Channel Foot
42	Service discontinued
43	Dublin Sea Holyhead Car/Coach
44	Dublin Sea Holyhead Foot
45	Dublin Sea Isle of Man

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*Appendix 2*

**Summary Area of Residence and Route/Mode groupings used in definition  
of 48 cells for grossing up Passenger Card Inquiry**

***Country of Residence Groupings***

Group	Area of Residence
1	Ireland
2	Northern Ireland
3	Great Britain
4	France and Germany
5	Belgium, Luxembourg, Denmark, Italy, Netherlands, Spain, Greece and Portugal
6	Norway/Sweden, Switzerland and Other Europe
7	USA and Canada
8	Australia/New Zealand and Other Countries

***Route/Mode Groupings***

Group	Route	Mode
A	Cross Channel	Sea, Car/Coach
B	Cross Channel	Sea, Foot
C	Cross Channel	Air
D	Continental	Sea
E	Continental	Air
F	Transatlantic	Air

*Appendix 3*

**Purposes of Journey and Ticket Type categories used in tourism expenditure estimation**

*Purpose of Journey Categories*

Category	Purpose of Journey
A	Business
B	Tourist
C	Visit to relatives
D	Other

*Ticket Type Categories*

Category	Ticket Type
A	All-in
B	Single or Return



# STATISTICS ON PRIVATE TOURISM ACCOMMODATION EXEMPLIFIED BY THE DANISH STATISTICS ON RENTED DWELLINGS

**Mr Erik Grib**  
**Denmark Statistics**

## **1. Introduction**

In the Recommendations on Tourism Statistics, as adopted by the United Nations Statistical Commission in March 1993, tourism accommodation is divided into the following classes

1. Collective tourism establishments
  - 1.1 Hotels and similar establishments
  - 1.2 Specialised establishments
  - 1.3 Other collective establishments
2. Private tourism accommodation

Private tourism accommodation is further subdivided into the following types of accommodation:

- 2.1 Owned dwellings
- 2.2 Rented rooms in family homes
- 2.3 Dwellings rented from private individuals or professional agencies
- 2.4 Accommodation provided without charge by relatives or friends
- 2.5 Other private accommodation

Private tourism accommodation is an important type of accommodation. The statistical information on the tourists' stays in owned or rented dwellings etc. is however scarce. The yearbook of tourism statistics published by World Tourism Organisation, the annual report by the Tourism Committee of OECD and the recent Eurostat publication of Tourism in Europe contain very few, if any, data on visitors' stay in private accommodation.

This paper deals with the needs for statistics on private accommodation, the existing international statistics and examples of Danish statistics on tourist stays in private owned dwellings.

## **2. The need for statistics on private accommodation**

### ***2.1 For national and regional planning purposes***

Because of the extent of the number of tourists in private accommodation, national and regional authorities, tourism organisations and the business for planning purposes need information on the tourism capacity and its use at the regional level. Given estimates of tourist expenditures per day regional spending

can be calculated based on the number of tourist nights spent in the region. Impact on employment and environment may be estimated based on expenditures and nights spent.

Household surveys on holiday trips can supply some information on private accommodation, but in order to have regional data surveys from the supply side are found very useful. Information on the capacity of houses for rental can only be obtained from supply side surveys.

## ***2.2 To support investment plans and sales promotion***

Enterprises and organisations involved in tourism need information on the development trends in tourism, nationally as well as internationally. For the tourism business information of the private accommodation capacity and its use is necessary. In particular the collective accommodation business may need data concerning the activities of the competitive types of private accommodation, that is the rented private rooms, houses and flats.

For enterprises selling goods and other services than accommodation to tourists, i.e. transport companies, retailers, restaurants and bars, museums and entertainment establishments knowledge of the development in inbound tourism to the region is of great importance, and the flow of tourists using private accommodation forms a considerable part of all tourists.

## **3. Existing statistics on private accommodation**

### ***3.1 Europeans and their Holidays. 1985***

At the request of the Directorate General for Transport (Tourism) of the EC Commission surveys were carried out in the beginning of 1986 on the European holiday patterns. The surveys were based on interviews with about 1.000 adults in each of the 12 Member States using identical questionnaires in all countries. The persons were asked to give information of there holiday trips in 1985. Only trips with at least 4 overnights were included.

One of the questions asked related to the type of tourism accommodation used. The main results are presented in Table 1.

Table 1. **Holiday trips by type of accommodation used.**

<b>Type of accommodation</b>	<b>Per centage of trips</b>
Owned dwelling	7
Rented rooms in family homes	5
Rented dwellings	17
Accommodation provided by relatives or friends	21
Hotels and similar	32
Camp sites	16
Youth hostels, cruisers or others	6
Total	104

*Source:* Europeans and their Holidays. EC Commission 1986

Private accommodation is used on about half of the holiday trips. Rented dwellings and rented rooms in family homes made out 44 per cent of the private tourism accommodation, accommodation provided by relatives and friends accounted for 42 per cent and stays in owned dwellings for 14 per cent .

Holiday stay in owned dwelling was a type of accommodation particularly used by tourists from Greece (15 per cent), Spain (14 per cent), the Netherlands (12 per cent), Italy (11 per cent) and Denmark (10 per cent).

Stays during holidays at relatives and friend were particularly used by tourists from Portugal (42 per cent), France (33 per cent), Spain (32 per cent) and Ireland (30 per cent).

Rented dwellings were used by 15-20 per cent of the European tourists with the exception of Greeks who only used rented dwelling on 2 per cent of there holidays.

Rented rooms in family homes were particularly used by Greeks (22 per cent) and Germans (10 per cent).

### 3.2 OECD Statistics

OECD annually collects and publish statistics on nights spent by tourists in various means of accommodation. Generally only paid overnight lodgings are included. Nights spent in owned dwellings and accommodation provided by relatives or friends without charge are not covered. Nine countries have supplied information on tourist nights spent in rented private rooms, houses and flats in 1994, cf. Table 2.

Table 2. **Accommodation in rented private rooms, houses and flats. 1994**

	Nights in rented rooms, houses and flats (per 000)		% of all nights stayed	
	Foreign tourists	Domestic tourists	Foreign tourists	Domestic tourists
Australia	10737	14737	15	9
Austria	12812	3777	14	13
Belgium	1024	6514	7	31
Denmark	15492	1616	59	10
Germany	1371	26653	4	10
Iceland	5	5	1	1
Italy (1993)	3537	6741	4	4
Switzerland	11071	13110	31	35
UK	-	45900	-	20
<b>TOTAL</b>	<b>56049</b>	<b>119053</b>	<b>15</b>	<b>12</b>

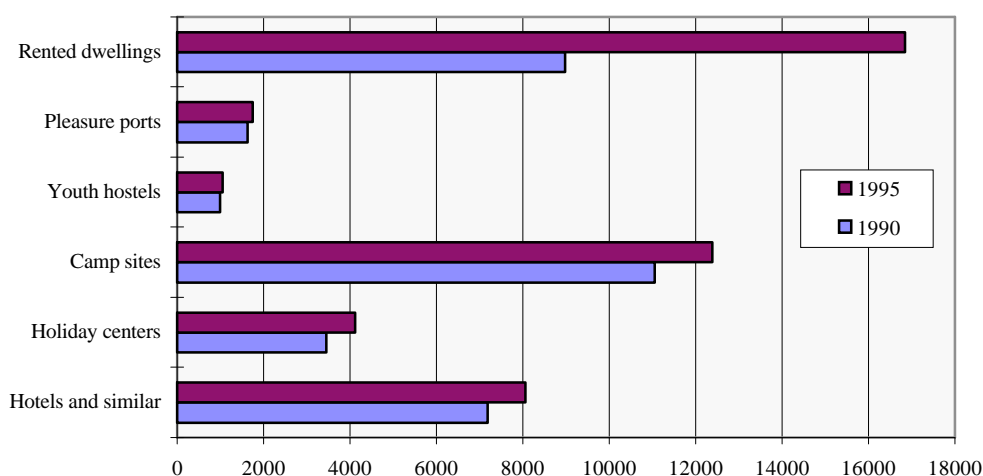
Source: OECD

#### 4. Statistics on accommodation in rented dwellings in Denmark

As tourist accommodation in rented private rooms and flats is of minor importance in Denmark, the Danish figures in Table 2 only comprise nights spent in rented dwellings. It appears from Table 2 that more than half of the nights spent by foreign tourists in Denmark are in rented houses.

In 1995 rented private owned holiday dwellings (second homes) accounted for 38 per cent of nights spent by tourists in Denmark in paid tourist accommodation, cf. Figure 1.

Figure 1. Guest nights in various types of tourism accommodation.  
Denmark 1990 and 1995. In 1000 nights.



Source: Statistics Denmark

For this reason Statistics Denmark carries out regular surveys on rental of private dwellings to tourists through agencies.

There are about 185,000 private dwellings (second homes) in Denmark. 78 per cent of the houses are solely used by the owner, relatives or friends. The other 22 per cent are partly or totally for rental. On average they are rented for 13 weeks during the year according to a survey made in 1992.

Since 1990 Denmark has experienced a considerable increase in tourist overnight stays of about 38 per cent. In particular there have been a remarkable increase of 88 per cent for nights spent in rented tourist dwellings. The share of nights spent in rented dwellings has increased significantly from 26 per cent in 1990 to 38 per cent in 1995 of all tourist nights.

In order to monitor market trends Statistics Denmark in 1986 established an annual survey on private dwellings for rental to tourists through rental agencies.

In the beginning only houses rented in the period April - September were included but from 1990 the low season was also covered.

Data are collected by postal questionnaires, which are filled in by the rental agencies. All agencies disposing of more than 25 houses for rental are included in the survey. Information on the population, i.e. addresses of the rental agencies, is obtained from the General Business Register and from other lists of enterprises. In 1995 there were about 100 agencies in Denmark.

From 1995 the survey was carried out as a quarterly postal inquiry of the 12 biggest agencies with about 80 per cent of the rental, and an annual survey of the other agencies.

In both the quarterly and the annual survey Statistics Denmark collects data on

- houses for rental on a weekly basis
- houses rented on a weekly basis
- rental measured in full house-weeks, by site of house (NUTS III) and by guest nationality (6 groups)
- average number of persons per rented house for 6 groups of guest nationality
- average number of rented house-weeks per hire contract for 6 groups of guest nationality

As subcontracting occurs the rental agencies are asked to include only houses for which they settle directly with the house owner.

The capacity of houses for rental is made up in house-weeks. The capacity varies over the year because some of the houses are used by the owners in part of the year and because some houses are unfit for rental in winter. The house capacity for rental through agencies has increased significantly in the past 5 years mainly because of sales promotion towards as well the house owners as the potential users.

Table 3 presents key figures for dwellings rented by tourists through Danish agencies.

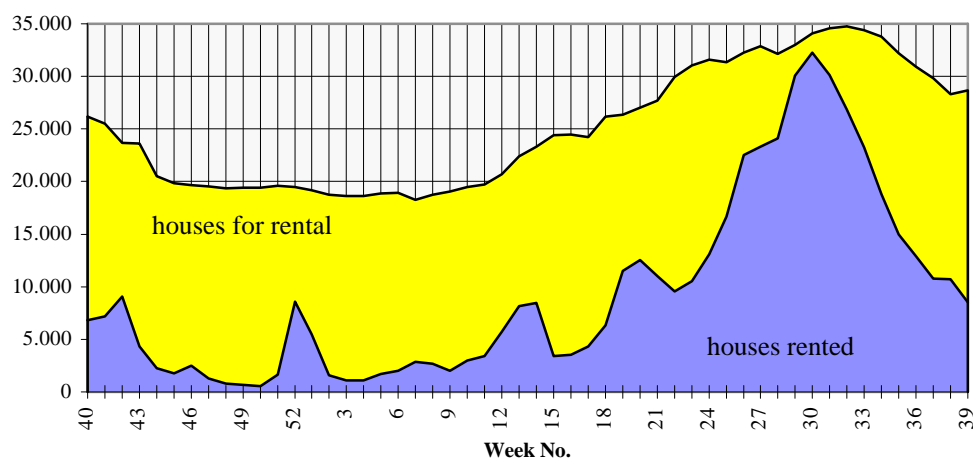
**Table 3. Dwellings rented through Danish agencies.  
Key figures 1994/95**

Renting capacity of agencies, 1000 house-weeks	1227
Houses rented, 1000 house-weeks	528
Hire contracts, 1000	339
Tourists, 1000	1621
Tourist nights, 1000	16847
<i>of which from</i>	
<i>Denmark</i>	1428
<i>Sweden</i>	197
<i>Norway</i>	427
<i>Germany</i>	14381
<i>Netherlands</i>	299
<i>Other countries</i>	121
Average daily spending of tourist (1991), DKK	238

*Source:* Statistics Denmark and the Danish Tourist Board

The key figure from the agents' point of view is the number of rented house-weeks. It is reported for each week of the year. This allows Statistics Denmark to calculate the net capacity use of houses for rental. It varies from about 3 per cent in mid December to 95 per cent in July, cf. Figure 2.

Figure 2. **Houses for rental and houses rented. 1994/95**



Source: Statistics Denmark

The rental period is normally one or more weeks. In the low season, however, some houses are rented for a shorter period. Houses booked for a weekend will generally not be rented for the rest of the week. The trend towards more but shorter holiday periods therefore makes it important to measure as well the occupation of the houses as the real use.

The calculation of total nights should be based on the real rental period. Consequently the agencies are asked also to report the rental measured in full house-weeks. An occupied house-week in 1995 was on average rented for a period of 6.7 days.

The rental agencies have good knowledge of the site of the houses. In principle it should be possible for them to make up the rental of houses by locally, but in order to limit the respondent burden information is only required on a county level (NUTS III).

The tourists are classified by 6 groups of nationality based on the addresses of the tourists which in general will be contained in the hire contracts.

The number of persons staying in a rented house will often be written in the hire contract. This information is however of minor value for the agencies and accordingly not always processed. In such cases the reported average number of persons per house is estimated by the agency.

The number of nights is calculated as number of rented houses \* 7 \* average number of persons per house.

The number of tourists (arrivals) is calculated as number of rented house-weeks \* average number of persons per house/average number of house-weeks per hire contract.

## 5. Statistics on private owned holiday houses

The survey of tourism accommodation in houses rented through agencies does not give full information of the market for house rental, as it is not covering the rental arranged directly between tourists and house owners. Accordingly the survey results can only be representative for the total rental to tourists if the market share of the agencies does not change significantly over time.

Consequently Statistics Denmark every 3-4 year carries out a sample survey among owners of second homes (houses). The population of second homes is known from the General Dwelling Register.

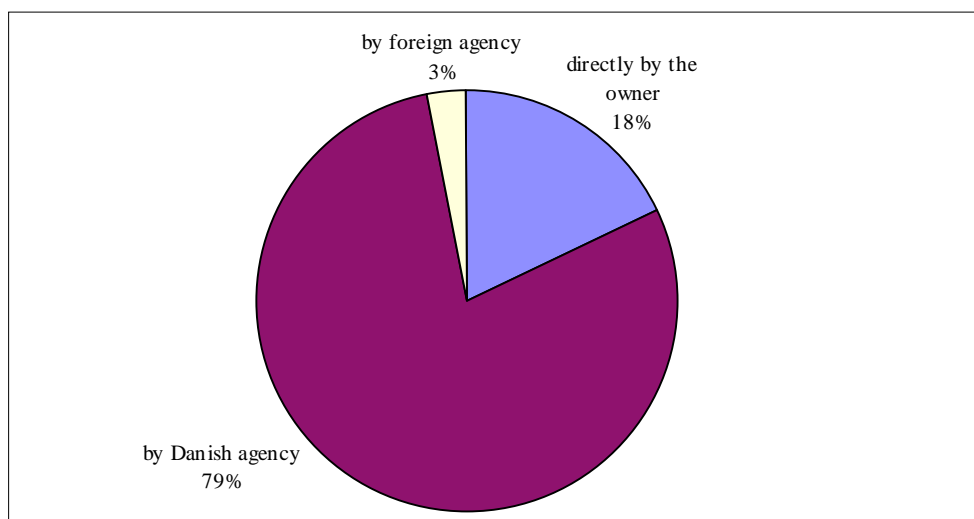
3,500 houses out of total 185,000 private owned second homes are selected. The response rate is about 70 per cent..

The latest survey was carried out in January 1993 and dealt with the use of the houses in 1992. Information was collected on

- own use of houses, weeks
- rental, weeks
- rental method, directly or via agency
- nationality of tourists

On average the houses are used 15 weeks à year by the owner family and friends and let out for other 3 weeks à year to tourists. So still there exists a huge potential for letting out. By Danish law the houses cannot be used for more than 30 weeks à year.

Figure 3. Channels for renting dwellings to tourists. 1992



Source: Statistics Denmark

Seventy-nine per cent of the rental of dwellings was provided by Danish rental agencies and 10 per cent of the rental took place directly between the owner and the tourists, cf. Figure 3.

In 1992 the houses were occupied on average 18 weeks à year, 15 weeks by the owner and 3 weeks rented by tourist. 22 per cent of the houses were rented for 1 or more weeks. On average they were rented for 13 weeks during the year.

## **6. Recommendations for future work**

Tourist stays in private homes - owned by the tourists themselves, rented or borrowed free of charge - is a widespread phenomenon in Europe, and the number of nights spent by tourists in private accommodation forms a significant part of all tourist overnight stays.

For these reasons it is recommended that more attention should be focused on development of statistics on nights spent in all significant types of private means of tourism accommodation. Setting up of regular registration of tourist overnight stays in private accommodation should be encouraged. To ensure international comparability harmonised definitions should be used.

It is suggested that a common OECD/Eurostat action plan should be set up to improve statistics on private tourist accommodation.

Firstly, an inventory of existing statistics in the various countries should be made up containing a description of population, survey methods, frequency, data collected and definitions used.

Secondly, proposals for common regular statistics should be worked out.

Thirdly, recommendations of survey methods should be elaborated and tested in pilot surveys.

## THE CONSTRUCTION OF SECTORAL ENVIRONMENT PRESSURE INDICATORS: THE CASE OF TOURISM

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### 1. Introduction\*

Tourism plays an important part in the society and for the economy. This ancient tradition corresponds to the aspirations of people who aims to travel and to know new culture so it can be considered an essential aspect of people lifestyle in developed countries. Moreover, the tourism sector represents an important economic resources for many countries. In fact, the increased demand for tourism services brings, no doubt, income and jobs, investment in infrastructure, in other words economic benefits. On the other hand, many tourism related aspects affect the natural environment. The negative impact of the tourism sector is determined both by unplanned urbanisation and abnormal infrastructures (which refer to the development of tourism supply) and by tourists' behaviour which could lead to excessive burden on the natural environment (e.g. via energy and water resource use, waste generation). Since tourists usually prefer to enjoy in an area with an interesting flora and fauna, where drinking water is healthy and so on, information about negative impacts on the environment from tourism, may influence the tourism demand.

The importance of the negative impacts of tourism on the environment are emphasised in the Fifth Environmental Action Programme, where tourism is one of the selected sector considered for a *sustainable development* and *respectful to the environment*. The line of this policy is to integrate the environment in other linked sectors of economic activities which produce a negative impact on the environment.

In order to take into account tourism related human activities which are harmful to the environment, the development of a specific set of indicators is urgent. Environmental indicators describe the environment itself, or trends in important aspects which are related to the environment: generally, they can be defined as *values derived from parameters which provide information about a phenomenon* (OECD, 1991). The construction of some kind of very structured system of sectoral environmental indicators, among which environmental indicators on tourism, is considered in a number of projects of international organisations. Eurostat, in particular, is developing a set of tourism pressure indicators within the "Pressure Indices Project"<sup>1</sup>.

There are several frameworks which, in general, are suitable to develop and organise indicators. In this paper, experiences from two sectors of official statistics - environmental statistics and tourism statistics -

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\* Whilst this paper is the result of the combined effort of the authors, sections 1, 2, 4 are attributable to Mara Cammarrota, while sections 3, 5, 6 to Carmine Pappalardo. This paper represents a preliminary draft of the research currently conducted in Istat.

1 ISTAT is currently involved in the mentioned European Project as far as tourism is concerned.

meet; the theoretical approaches of the so-called *Pressure-State-Response (PSR) model* and the *sustainable tourism* are presented. The first involves exclusively environmental aspects and is followed for drafting reports on environment of many countries. The second implies a wider dimensional range of analysis involving economic, social and environmental problems.

The main aim of this paper is to present a preliminary set of *Tourism Sectoral Indicators*. In the second and third sections the PSR framework and the approach of sustainable tourism are considered from the two point of view: environmental and tourism statistics. In the fourth section some *potential indicators*, derived from the existing literature, will be considered in the light of some environmental problems considered. In the fifth section, a set of *operational indicators* is discussed which can actually describe environmental pressure from tourism on the basis of existing statistical information in Italy.

## **2. Environmental pressure indicators within the PSR framework: a green accounting project by Eurostat**

While the existing extensive statistical information on tourism subject is of great importance, the development of a specific set of indicators is urgent, in order to take into account tourism related human activities which are harmful to the environment. In particular, *tourism pressure indicators* describe human activities related to tourism which may have a negative effect on the natural environment.

Indicators to monitor environmental pressure from tourism are under consideration at the European Commission (Eurostat). The development of a set of tourism pressure indicators is in fact part of the Eurostat project "Pressure Indices" announced in the Communication to the Council and the European Parliament on "Directions of the EU on Environmental Indicators and Green Accounting" (COM(94) 670 final, 21-12-94). This project interests the National Statistical Services (NSS) and includes six "Pressure Indices Infrastructure Projects. Each sectoral Infrastructure Project (SIP) is split into two sub-projects, shared between two NSS, one focusing on basic data for the calculation of indicators and the other on indicator issues <sup>2</sup>.

A variety of environmental indicators can be used, so a theoretical framework is needed to classify indicators for developing this project. From the strictly environmental point of view, the framework used is the so-called *Pressure-State-Response (PSR) model*, developed in the framework of OECD activities. Since the environmental implication, this framework is followed for drafting the reports of the state of the environment of many countries.

Within the PSR framework, three types of indicators can be distinguished:

1. indicators of environmental pressures;
2. indicators of environmental conditions;
3. indicators of societal responses.

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2 The Italian Statistical Institute and the Swedish one are co-operating in the project on "Environmental Pressure indicators from the Sector Tourism". ISTAT is dealing with the indicator issues and its purpose is to collect a first provisional indicators, to harmonise and/or develop methodologies to calculate pressure indicators, and to assess the need and the possibility to link pressure data with information on the state of the environment. We are now in the first phase that includes identifying a first set of possible environmental pressure indicators from tourism activities.

The first set corresponds to the *pressure* box of the PSR framework and consists of indicators for the causes of the environmental problems, such as certain flow quantities (emissions, use of raw materials, products and energy) or infrastructures that place a burden on the environment.

The second set of indicators corresponds to the *state* box of the PSR framework and pertains to the quality of the natural environment.

The third set corresponds to the *response* box in the PSR framework and refers to measures taken in society to improve the environment. For example, response of society to solve environmental problems consists in measures to reduce pressure, e.g. standards, economic incentives, behaviour change,...

In this context, it is clear that the PSR framework is based on a chain: human activities cause pressures on the environment, pressures change the state of the environment and changes of state lead to response of society <sup>3</sup>.

With specific reference to *tourism pressure indicators*, what is to be done is to examine all activities related to tourism that have a negative impact on the environment. This impact is determined both by unplanned urbanisation and abnormal infrastructures (which refer to tourism supply) and by tourists' behaviour itself which could lead to deterioration of natural resources.

The mentioned Eurostat project, following the "themes" of the Fifth Environmental Action Programme "Towards Sustainability", aims to develop *tourism pressure indicators* linking ten policy fields to a number of economic sectors defined in the System of National Accounts (*target sectors*) which are of particular importance from an environmental point of view. The ideal objective of the project would be to define one pressure index for every policy field starting from the basic indicators and by means of successive aggregation.

The *target sectors* are those defined in the Fifth Environmental Action Programme, that is energy, agriculture, transport, industry and tourism, with the addition of waste management, because of the rapidly growing importance of this new sector.

The ten environmental issues, according to which tourism pressure indicators are to be developed, are the following:

- Climate change
- Ozone layer depletion
- Loss of bio-diversity
- Resource depletion
- Dispersion of toxins
- Waste
- Air pollution
- Marine environment and coastal zones
- Water pollution and water resources
- Urban problems, noise and odours.

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3 One could say as well that the state indicators are themselves a kind of response from the environment as a result of human activities.

These “clusters” take into account a variety of aspects. For example, change of climate is caused by pollution of the atmosphere, which comes from different substances, in principle the so-called greenhouse gases<sup>4</sup>. The depletion of the ozone layer is caused by pollution of the stratosphere by substances that disintegrate ozone. Problems related to wastes are linked to their generation as well as to not optimal collection, treatment, processing, recycling, reuse and incineration, discharge and dumping of them.

### **3. Environmental pressure indicators in the light of the sustainable tourism concept**

Tourism statistics have been subject to a long and important revision process, both on the side of the implementation of the number of variables to be collected and on the definition of a more complete set of relationships between tourism and other fields of economic activity. The most important result of this analysis led has been the adoption, in November 1995, of the final version of the European Directive on Tourism Statistics.

Very few economic branches include a number of heterogeneous activities as tourism: according to its structural characteristics, tourism could be considered as a *market* rather than a sector, as it is characterised by a great heterogeneity both on demand and supply side.

The demand side includes all market and non-market goods and services consumed by the tourists. Tourist consumption is a real heterogeneous one, since it includes i) exclusively tourist goods (such as accommodation services, organisation and resale of travel and stay); ii) non-typically tourist goods (such as transport, vehicle hire), iii) public goods (such as natural, cultural and artistic resources). The latter set acts as an important input on the tourism supply side too, which, in turn, goes beyond far tourist production.

Hence, as the relationships between tourism consumption and tourism production are very complex, difficult to define and to assess, because of the features of the activities involved, “the economic dynamic of the sector, tourist satisfaction and the preservation of natural and cultural heritage cannot be separated” (Tourism Division of the European Commission, 1995).

In the light of this last concept, the Directive itself explicitly includes a very relevant section which aims to take into account the relations between tourist activities and the natural environment resources, following the fundamental approach of *sustainable development*.

Once has been assessed that tourism is a field of activity which must be considered as an essential policy for the creation of the Economic Monetary Union, it applies the content of Article 2 of the Treaty of European Union, intended to promote “a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment”.

Tourism in the European Union have to be planned and developed according to the principles of *sustainable development*. It aims to design a secure environmentally compatible development of human living conditions and economic activities to be sustainable in the long term and implies the need to make different sectoral policies converge on the same objective. Moreover, the definition of *sustainable tourism*, as it is stated in the document of the Tourism Division of European Commission “Tourism Environment in Europe” can be adopted : “a development will be understood to constitute sustainable tourism development where it takes into account not only aspects in visitor source countries, but the form of outward journey, on the one hand, along with the interests of visitors and residents in a region to be defined. Activities at the

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4 These substances obstruct the heat radiated by the earth, so that the average temperature on earth rises.

destination need to be based on nature's capacity to absorb, whereby consumption of resources should be as sparing as possible" (Tourism Division of the European Commission, 1995).

The potential growth of future tourist flows and the significant pressure, which is expected they could exert on natural resources, need environmental protection requirements to be integrated into the definition and development of European tourism policies.

*Integrability*, more in detail, is the structural feature of the Fifth Community Action Programme on the Environment. According to this approach, any environmental policy should be integrated with the adoption of other policies pertaining to other linked sectors of economic activity which produce a potentially negative impact on the environment. The need to integrate environment policies with tourist sector is a fundamental and crucial feature of the European tourism policy, especially in the light of:

- the growing importance that the quality of non-marketable environmental goods plays in determining the patterns of tourism demand;
- the dynamics of tourist demand, in the case in which it exceeds the limits given by sustainable development requirements;
- the strong external costs resulting from the use of public properties as an input for the tourism industry.

A common structure approach, applying in the context of sustainable tourism policy, should include, a) the weighting of any possible nuisance on the environment due to tourism sector; b) quantifiability and demarcation, in terms of space and time, of environmental burden of tourism; c) the existence of a set of information instruments in order to make this theoretical concept operational.

With reference to the information side, we need indicators which, according to the concept of sustainable tourism, should be organised on the basis of the following breakdown:

1. resource inputs;
2. material outputs and producing services;
3. the impacts on the area concerned.

In the light of a comparison among PSR and sustainable development frameworks, the latter implies a wider dimensional range of analysis, involving economic, social and environmental implications. The PSR approach, on the contrary, deals exclusively with environmental aspects and provides an analysis of the phenomena concerned always limited to their natural environmental implications.

From this particular point of view, items 1) and 2) refer to material flows considered independently of their impact on natural environment. As far as the natural environment is concerned, point 3) is supposed to read "environmental impacts in the territory concerned".

Main *inputs* in economic processes are represented by materials, energy sources, water, soil, a sub-set of transport indicators in terms of consumption of energy, material and land; material outputs affecting the environment can be monitored by considering waste residuals, emissions, dispersion of toxins, buildings and equipment; the environmental impacts in territory concerned is in the form of concentrations of substances, soil pollution, extraction of raw materials, loss of bio-diversity, reduction of natural spaces;

In the light of these arguments, points 1) and 2) refer to phenomena which are normally measured through *pressure indicators*. Pressure indicators are also adopted according to the sustainable development framework as they constitute a fundamental set of variables to take into account to define projects and adopt

policies based on the concept of sustainability. Point 3) refers to phenomena which, in the PSR scheme, are represented by *state* indicators.

Finally, dealing with pressure indicators is something which fits with one context and another.

#### **4. A tentative selection of potential environmental pressure indicators related to the tourism sector**

The annex to *the Council Recommendation for a Community Methodology on Tourism Statistics* and the considerations of the previous sections are the starting point for the tourism pressure indicators developed in the this section. In the mentioned annex some environmental topics of interest in tourism statistics and the variables related to the impact of tourism on the environment are presented, but specific aspects related to state, pressure and response indicators are not separately pointed out. Unlike the annex, we develop exclusively tourism *pressure* indicators with regard to the ten issues.

The construction of a system of environmental pressure indicators for tourism depends on one side on what would be a desirable set of indicators (demand side) and on the other side on what is the existing information in terms of indicators or basic data needed (supply side).

From the point of view of the demand side appropriate scientific expertise would be need of course. At the present stage, however, on the basic of existing literature, it makes sense to tentatively define a preliminary set of indicators as an initial reference for the work to be done on the supply side.

A general impression of the tourist intensity in a given country can be given by the ratio tourists/residents. In addition to that, specific indicators should be developed which allow for different kinds of pressure linked to different activities or phenomena generated by tourism.

There are three main levels with reference to these which can be distinguished. The first one concerns the *tourist transportation*, the second is related to *tourist accommodation* and the last one concerns the *tourist behaviour*. For each of these three levels, we can identify some pressures which burden the natural environment, more or less significantly, furthermore this should be done with reference to specific environmental issues such as the ten policy fields mentioned above.

Referring to the first aspect, for instance emissions of “green house” gases and other air pollutants can be considered measuring the increase in road transportation due to tourism (observed during certain periods); these emissions would hopefully be related for instance to climate change, destruction of the ozone layer, dispersion of toxins, air pollution, separately. Another example is given by waste discharges from augmented number of ships in tourist season which cause water pollution. Last but not least, roads in tourist areas located in mountain or coastal zones are an example of pressure which may cause loss of bio-diversity. As far as tourist accommodation is concerned, the number of hotels and related infrastructures (tourist ports, restaurants, bars, clubs, shopping centre, discotheques, water based theme parks, accessing roads and car parks) represent environmental pressure themselves.

In addition to transportation and accommodation aspects, tourist staying in a certain area may generate itself some environmental burdens. The presence of tourists within a limited area, first of all, will increase energy consumption, water use as well as waste generation. Moreover, all open space activities related to tourism such as trips on mountains, in wooded areas and countryside, riding, tracking and sport activities (skiing, golf, climbing, sailing, hunting, fishing, etc.) can cause damages to the environment.

Starting from the above examples, it can be easily understood how a given phenomenon can be relevant from an environmental point of view under several aspects.

A preliminary investigation of possible indicators of relevant phenomena has been carried out at ISTAT within the environmental unit, with particular attention to linking environmental pressure indicators to the ten environmental issues considered in the SIP project. The following table reports a result of this exercise. The ten policy fields are reported in the first column, followed by the proposed indicators. A given indicator may be shown in more than one cell.

**Table 1. Selected tourism pressure indicators proposed for further research**

<b>Policy fields</b>	<b>Pressure indicators</b>
Climate change	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Greenhouse gas emissions due to tourism transportation</li> <li>3. Greenhouse gas emissions due to energy used for tourist accommodation</li> <li>4. Number of air conditioned room in hotels (for emissions of chlorofluorocarbons (CFCs) and halons)</li> <li>5. Number of refrigerators in hotels (for emissions of chlorofluorocarbons (CFCs) and halons)</li> </ol>
Ozone layer depletion	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Number of air conditioned room in hotels (for emissions of chlorofluorocarbons (CFCs) and halons)</li> <li>3. Number of refrigerators in hotels (for emissions of chlorofluorocarbons (CFCs) and halons)</li> </ol>
Loss of bio-diversity	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Per centage of area occupied by tourist establishments in relation to total residential area</li> <li>3. Per centage of area changed for tourism purposes</li> <li>4. Visitors in protected areas, in absolute terms and as related to the carrying capacity</li> <li>5. Per centage of roads, railways, etc. with regards to the total network of a given country</li> <li>6. Number of ski centres (= deforestation)</li> </ol>
Resource depletion	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Per centage of area occupied by tourist establishments in relation to total residential area</li> <li>3. Per centage of water supply to the tourism sector</li> <li>4. Per centage of roads, railways, tourist ports and airports with regards to the total network of a given country</li> </ol>
Dispersion of toxins	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Emissions of air pollutants due to energy used for tourist accommodation</li> <li>3. Emissions of air pollutants due to tourism transportation</li> <li>4. Per centage of wastes attributable to tourism</li> </ol>
Waste	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Per centage of wastes attributable to tourism</li> </ol>
Air pollution	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Emissions of air pollutants due to energy used for tourism transportation</li> <li>3. Emissions of air pollutants due to energy used for tourist accommodation</li> <li>4. Per centage of wastes attributable to tourism</li> </ol>

<b>Policy fields</b>	<b>Pressure indicators</b>
Marine environment and coastal zones	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Per centage of coastal zones occupied by tourist establishments in relation to total residential coastal zones</li> <li>3. Per centage of coastal zones changed for tourism purposes</li> <li>4. Per centage of coastal zones covered by roads and railways</li> <li>5. Number of tourist ports</li> <li>6. Number of water based theme parks</li> <li>7. Passengers /km for sea transportation of tourist in relation to Passengers /km for all sea passenger transportation</li> <li>8. Amount of hydrocarbons and toxic substances discharged from the augmented number of ships in tourist season</li> <li>9. Amount of waste discharged from the augmented number of ships in tourist season</li> </ol>
Water pollution and water resources	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Amount of hydrocarbons and toxic substances discharged from the augmented number of ships in tourist season</li> <li>3. Amount of waste discharged from the augmented number of ships in tourist season</li> <li>4. Passengers/km for sea transportation of tourist in relation to passengers/km for all sea passenger transportation</li> <li>5. Water supply to the tourism sector</li> <li>6. Number of water based theme parks</li> </ol>
Urban problems, noise and odours	<ol style="list-style-type: none"> <li>1. Ratio tourists/residents</li> <li>2. Road traffic density during the tourist season in relation to road traffic density during other periods of year (for noise)</li> <li>3. Air traffic density during the tourist season in relation to air traffic density during other periods of the year (for noise)</li> <li>4. Railways traffic density during the tourist season in relation to railways traffic density during other periods of year (for noise)</li> <li>5. Emissions of air pollutants due to tourism transportation</li> <li>6. Amount of discotheques in open spaces</li> <li>7. Number of water based theme parks</li> <li>8. Per centage of wastes attributable to tourism</li> </ol>

## **5. Operational pressure indicators: the case of Italy**

The analysis below has the objective to propose, where it is possible, some relevant statistical sources in order to define operational tourism pressure indicators for each of the ten environmental policy fields, as they have been detailed in the previous section.

The list of the reference statistical sources cannot be considered as an exhaustive one. Even if a preliminary analysis in the context of the PSR approach has already been carried out in ISTAT, its application to the tourism sector is adopted in Italy for the first time and does not take into account other existing studies, developed according to different theoretical frameworks which, moreover, could result complementary to the objective of this project.

At a first stage, the ten policy issues could be sub-divided according to the three main significant items of the tourism demand and supply:

Table 2. **The ten policy issues sub-divided according to three main significant items**

Tourist Transportation	Tourist Accommodation	Tourist Behaviour
- Climate Change	- Climate Change	
	- Ozone Layer Depletion	
	- Loss of Bio-diversity	
	- Resources Depletion	
- Dispersion of Toxins	- Dispersion of Toxins	
		- Waste
- Air Pollution	- Air Pollution	- Air Pollution
- Marine Environment	- Marine Environment	
- Water Pollution and Resources		
- Urban problems, noise and odours	- Urban problems, noise and odours	- Urban problems, noise and odours

Table 2 provides a re-classification of the points considered in Table 1, since the reference variables have been assumed to be the three main levels of tourist activities and the set of policy fields is allocated between them according to the nature of the potential tourism pressure indicators proposed. It has the preliminary aim to distinguish, by referring to the set of potential tourism indicators, which of the three main levels of tourist activities has the more significant effect on the ten policy fields involved in the survey. This is absolutely a quantitative approach in the sense that it does not consider any qualitative analysis on the nature of the indicators involved; a more exhaustive definition of the intensity of the tourism sector pressure on the environment need to evaluate each indicator and, successively, to compare them.

In such a way, this table aims to show two important features/roles of the pressure indicators: i) the study of the burden caused by tourist phenomena on natural resources is complex as it implies a cross-sectional synthesis of their environmental implications; ii) in developing the analysis, the above indicators are assumed to represent each policy field itself, which they have been related to, according to Table 1.

Only one potential pressure indicator, proposed to investigate tourist phenomena, is common to all tourist activities: it is the ratio tourists/residents. First of all, it can be considered as the reference *operational indicator* in order to measure the pressure of whatever tourist activities on natural environment resources; the level of tourist flows and, more in general, the intensity of human activities in a given territory, directly measured through the number of persons involved in that action, provides a synthetic indicator: it allows to take into account of a series of effects determined by tourist activities on the level of existing resources, which includes natural environmental resources too. It is constructed with regard to one of the tourism statistics reference sources, that is the number of tourists acting in a well defined space for a given period of time (length of their stay).

More detailed data on tourist flows for the Italian case are contained in the volume "Tourism Statistics", published yearly by ISTAT (data on a monthly basis could be available too); the reference data source on residents is the Census (the last one refers to 1991); data provided by population forecasting (according to various hypothesis on mortality rates) could be useful to the aims of this analysis, especially because they are provided on a yearly basis according to a good geographical breakdown.

Even if some pressure indicators are common to several policy fields, the same methodology and the same reference statistical sources apply.

In the following, we describe the statistical sources, available in Italy, to construct tourism pressure indicators, shown in Table 1, for each of the ten policy fields separately.

### *Climate change*

According to Table 1, the reference source for the analysis of the emission of greenhouse emissions due to tourism transportation is provided by the Italian Environment Agency (ENEA). ENEA produces official statistical data by emission and by vehicle typology. These set of information is published on CORINAIR<sup>5</sup> report on the state of the environment and for the definition of the "Emission Accounts". More in detail, this source is not available on an annual basis and last existing data, which refer to 1985 and 1990, vary according to technological improvements and laws and regulations. Hence, data on the amount of emissions by vehicle and its features are available. The crucial point is to distinguish the amount of means of transport, distinguished by typology, which have been used for tourist transportation. In Italy, these variables are not contained in any survey and it is necessary to try to estimate these flows. Two possible approaches could be based: i) on number of vehicles rented by tourists and/or visitors; ii) on Census data on vehicles owned by the travel agency and tour operator sector. A good improvement for this estimate, only in the case of the internal tourism, can be provided by the implementation of a new survey concerning the investigation of inter-regional tourism expenditure, which should include travel expenses and their breakdown by means of transport used.

The amount and kind of energy used by hotels and other accommodation establishments can be assumed to be energy demanded for tourism purposes. In this case, these data represent a significant indicator and an operational indicator too. Very detailed data on the consumption of electric energy of hotels and other tourist accommodations are provided by the Italian Authority on Electric Energy (ENEL): this source is also important in defining the rate of consumption of finite resources respect to the amount of self-raw material resources. Data on energy resources demand, other than electric energy, from the tourism supply side can also be drawn from ISTAT enterprise surveys: the survey on "Enterprise Account System" and the survey on "Enterprises with less than 19 employees" contain information on the use of several kinds of energy sources according to sectors of economic activity and, hence, including the hotel and other accommodation establishment sector too.

Both the number of air conditioned rooms and that of the number of refrigerators in hotels are not provided by any official statistical source; in any case, data referring to variables which act as indicators in determining the amount of CFCs emissions due to tourist accommodation can be easily obtained by Tourist Enterprise Organisations (the more relevant of which, for the Italian case, are Federalberghi and Federturismo).

### *Ozone layer depletion*

According to Table 1, leading indicators in evaluating the effects of tourist phenomena on the ozone layer depletion are the number of air conditioned rooms and the number of refrigerators in hotels, already considered according to the climate change policy field and pertaining exclusively to tourist accommodation establishment activity (cf. Table 2).

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5 CORINAIR projet (CO-ordination-IN-formation-AIR) is promoted and co-ordinated from DGXI of European Communities as a part of CORINE program (COoRdinated INformation on the Environment in the European Community).

### *Loss of bio-diversity*

In order to successively assess the item "percentage of area occupied by tourist establishments", several sources are available: i) "Tourism Statistics" (source: ISTAT), which contain a detailed analysis on hotels and other accommodation establishments by their localisation; a more detailed source is of administrative nature and is provided by Local Government Authorities, as they have the role to monitor the number of tourist establishments existing in their reference area. Both these sources can be integrated to take into account information on the structure of a given residential area and its relative importance in terms of environmental resources. Data on the area occupied by tourist establishments are contained in the Census, detailed according to sectors of economic activities or, alternatively, in the HORECA/TA pilot survey, which is a particular inquiry on the supply side tourism sector which collect a lot of information on the structure of accommodation establishments.

The number of tourists staying in a given area and its carrying capacity are indicators both provided by ISTAT and contained in the volume "Tourism Statistics", collecting information coming from the accommodation establishment survey and the tourist monthly inquiry.

The number of roads by kind, with regards to the total extension of a given country is an indicator produced by the Italian Transport Authority and contained in "Transport National Accounts".

The ratio of mountain road related to all existing roads define an operational pressure indicator as it can be constructed by data contained in the "National Account of Transports" or, otherwise, in the "Statistics on the Environment" published, respectively, by the Italian Transport Authorities and by ISTAT.

The number of tourist establishment in mountain are contained in the annual volume published by the Italian National Institute (ISTAT) "Tourism Statistics" which collects data on tourism accommodation, their localisation and structure.

### *Resource depletion*

Two indicators for this item have already been defined in advance, with regard to the need to take into account of the loss of bio-diversity due to tourist activities. Also in the case of resources depletion item, the statistical sources previously defined for the same pressure indicators apply (percentage of area occupied by tourist establishments and percentage of roads, railways with regard to the total extension of the country).

The percentage of water supply to the tourism sector define an operational indicator. The official sources, collected in the form of an exhaustive survey, are published by ISTAT. An indirect indicator on the consumption of energy resources and so, on the impact of transport on the environment, can be obtained by analysing the *travel* component of tourism expenditure. In this view, for foreign tourist flows, it could be possible to use the Italian Exchange Office (UIC) sample survey on the international tourism in Italy. For internal tourism, the only available data are contained in the "Family Expenditure Survey" or in the "Italian Holiday Survey", both carried out by ISTAT.

### *Dispersion of toxins*

For data, we refer to the emission of air pollutants due to energy used for tourist accommodation (cf. to the climate change item analysis). Moreover, the analysis of CFCs emissions due to tourism transport demand and the evaluation of its impact in term of ozone layer depletion need to take into account some particular features of Italian transport supply. Air and train transport are affected by structural rigidities since it is not significantly flexible to the high seasonality of tourism flows. More notably to our aims are

road and sea transport. In this context it is possible to define some operational indicators, defined as follows:

- i) number of vehicles used for road transport: these data need to be estimated. An alternative methodology refers to data taken from border survey by nationality (source: ISTAT) and the mean rate of car occupancy by nationality (source: ENEA). In any case, this approach could imply a sensible underestimate;
- ii) rate of increase of sea transport supply: reference sources are provided by shipping companies, the Italian Transport Authority and ISTAT survey on "Internal Maritime Transport".

Wastes are an excellent indicator for the analysis of tourism phenomena in their wide view. On the contrary, there is no a systematic source of information and, hence, it is necessary to estimate the amount of waste due to tourism consumption or to carry out an ad hoc survey. A complementary interesting source is the European Project on Tourism Sector applied at the Italian case, namely "Ecologia in albergo - manuale per il recupero ambientale dei luoghi ed ospitalità" (Tourism Division of the European Commission, 1995). According to this manual, 45% of all waste in Italy is organic, 22% consists of paper and cardboard, 7% of glass and plastic, 3% miscellaneous. Tourism share of the waste is put at 0,5-1 kg per person per day. In this case, we have focused the attention to the amount of waste produced in urban centres as it constitutes the more reliable tourism indicator in terms of pressure. A complementary source could be defined by data referring to the environmental tax, detailed by sector of economic activity.

#### *Air pollution*

Negative effects on the environment in terms of air pollution determined by tourism supply and demand is significant only when it is connected to transport and accommodation activities. In this context, the main source is the ENEA-CORINAIR data-set, which contains values on emissions in the environment according to the kind of energy resource and to the means of transport used. The definition of the share of transport due to tourism demand and supply need to be estimated. In any case, it applies the same analysis developed for the item "climate change".

#### *Marine environment and coastal zones*

Sources about the definition of the share of coastal zones occupied by tourist accommodation establishments are obtained integrating information contained in the survey on "Tourism Statistics" with those coming from the HORECA/TA pilot survey (yearly basis data). Another reference source is the Census on enterprises, local units and institutions.

The number of coastal zones changed for tourism purposes can be considered as an operational indicator. The reference sources are the Government Local Authorities. An exhaustive data-set has also been developed by Formez.

The number of water based theme park is not contained in any official statistical source but, as an indicator, detailed information can be drawn from hotels and other establishment associations (for example, Federturismo)

#### *Water pollution and water resources*

There are no statistical sources about the discharged of toxic substances and/or the waste from ships.

Data on the number of passengers per sea transportation are not contained in direct statistical sources. A consistent estimate have to take into account the stagional component of passengers flows. ISTAT provides monthly data on this item, contained in the survey on "Internal Maritime Transport". The other indicators have already be developed referring to the above themes and, obviously, the same methodology applies.

#### *Urban problems, noise and odours*

The conclusion developed for the item "dispersion of toxins" applies. Moreover, statistical data on this indicator can be provided by the Italian Environment Agency (ENEA). They define an official statistical source. To make this indicator operational, it is necessary to estimate the component of road and air traffic due to tourist flows. One consistent statistical source is the ISTAT survey on "Air Transportation" which, in turn, can also be integrated with data on passengers flows collected by airline companies.

## **6. Conclusion**

In the Fifth Environmental Action Program, tourism is considered one of the selected sector considered for a *sustainable development and respectful to the environment*; the same program stresses the *integrability* in the sense that any environmental policy should be integrated with the adoption of other policies pertaining to other linked sectors of economic activities which produce a potentially negative impact on the environment.

The need to integrate environmental policies with tourism sector led also to the adoption, in November 1995, of the final version of the European Directive on Tourism Statistics.

In order to take into account the integrability and the measures necessary for a sustainable development, a specific set of indicators is urgent. In this paper we deal, in particular, with tourism pressure indicators, which considered all human activities related to tourism which are harmful to the environment.

There are several frameworks which in general, as suitable to develop and organise indicators. Experiences from two sector of official statistics, environmental statistics and tourism statistics, meet in this research. From the first point of view, the so called PSR model is presented due to its dealing exclusively with environmental aspects and provides an analysis of the phenomena concerned always limited to their natural environmental implications. In light of tourism statistics, the sustainable tourism concept is treated. This definition, as it is stated in the document of the Tourism Division of European Commission "Tourism Environment in Europe", consists of: "a development will be understood to constitute sustainable tourism development where it takes into account not only aspects in visitor source countries, but the form of outward journey, on the one hand, along with the interests of visitors and residents in a region to be defined. Activities at the destination need to be based on nature's capacity to absorb, whereby consumption of resources should be as sparing as possible".

These two approaches are the starting point for defining a preliminary set of *pressure tourism indicators*. The construction of a system of environmental pressure indicators for tourism depends on one side on what would be a desirable set of indicators (demand side) and on the other side on what is the existing information in terms of indicators or basic data needed (supply side).

From the point of view of the demand side appropriate scientific expertise would be need of course. At the present stage, however, on the basic of existing literature, it makes sense to tentatively define a preliminary set of indicators as an initial reference for the work to be done on the supply side.

A preliminary investigation of possible indicators of relevant phenomena has been carried out at ISTAT within the environmental unit, with particular attention to linking environmental pressure indicators to the ten environmental issues considered in the SIP project. Moreover, the existing statistical information necessary for the construction of these *potential* indicators are considered for the case of Italy, in order to propose *operational* indicators.

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# CONCEPT FOR A NATIONAL REPORT ON TOURISM, ENVIRONMENT AND NATURE PROTECTION IN GERMANY

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## 1. Introduction

A correlation between tourism and the environment is undoubted. The world conference and Charter for Sustainable Tourism in Lanzarote in 1995 created a global awareness for environmental problems caused by touristic development. Although numerous studies and acts have been carried out since the early eighties, tourism policy is still missing a comprehensive framework for concerted action. This situation applies to Germany as well. The need for systematical research on the impact of tourism on the environment is underlined by the steps of the European Commission undertaken in the following Environmental Action Programme. Here the tourism sector has been selected among five other target sectors to be subject to the development of pressure indices and integrated parameters.<sup>1</sup> The approach is based on the Pressure-State-Response-Model aiming at identifying tourism's contribution to ten central policy fields ranging from "depletion of atmospheric ozone layers" to "urban problems, noise".

A commission from the the national agency for nature protection, the Deutsches Wirtschaftswissenschaftliches Institut für Fremdenverkehr (DWIF), in co-operation with the Büro für Tourismus und Erholungsplanung (BTE) is working on a concept for a national report on tourism, environment and nature protection. This report has been acclaimed by all political forces in Germany, recognising that tourism policy has reached a turning point. Useful but mostly regional, local or sectoral activities have to be connected.

The concept for such a national report has to overcome a variety of problems. To name a few:

- A framework system and binding definitions for co-operation between the environment and tourism has to be set up. Co-operation cannot be one-dimensional. The effects of tourism on the environment are facing "feedback" relations like the influence of the environmental quality on the choice of the destination by the tourist.
- Data based assessment of environmental effects has to be combined with political requirements to set up priorities in aims and actions. Clearly outlined targets and timetables should be set down.

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<sup>1</sup> This refers to the development of an European System of Environmental Pressure Indices (ESEPI) and an European System of integrated Economic and Environmental Indices (ESI).

- All information must be addressed to the relevant parties. Given the complexity of the tourism sector, this poses high demands on the presentation and systematisation of indicators, information, codes for conduct etc.
- Compatibility with existing environmental monitoring and assessment systems like that of the national agency of environment (UBA) or the “Systems for Integrated Environmental Accounting” (UGR) should be guaranteed as far as possible.
- As a cross-sectoral branch, tourism requires complex analysis. Information and data have to be collected through a wide network involving many institutions and touristic actors. Because environmental monitoring focused on the producing economic sector, services are not yet thoroughly analysed, continuing survey is missing. New approaches for measuring or filtering out the impacts of touristic activity are necessary (e.g. MIPS - material input per service).

A key element of the concept is the elaboration of a set of indicators and a data basis which represents the correlation between tourism and the environment. This quantitative as well as qualitative instrument shall enable the in-depth assessment of the environmental effects of tourism.

The national plan on sustainable development in Austria stresses continuous monitoring in this field as one of the few essential needs. A study by SEILER identified indicators for harmonised tourist development in Swiss communities according to the Swiss tourism concept. Eurostat recommended a framework for environmental indicators in connection with the tourism sector.

Environmental monitoring itself in Germany looks upon a fairly long tradition, but has obviously concentrated on the impact of producing sectors and industry and not on services like tourism.

## **2. Life-cycle analysis - framework for a systematical analysis of the impact of tourism on the environment**

As mentioned above, the assessment of the impact of tourism on the environment is missing a systematical and comprehensive approach. If one takes the official publications, documentation on statistics or tourism management plans it has to be said that:

- If the correlation between tourism and the environment is mentioned it is either on a very general basis or the analysis seems to be largely action-oriented.<sup>2</sup>
- There are many case studies and examples of regional research to be found. But these have been conducted separately from each other, using different methodologies and limited to a single research period. They have not yet been linked to an overall national assessment.
- There is no model or "forerunner" for such a report. Tourism statistics have not mentioned the impact on the environment to date, documentation on the state of the environment scarcely mentions tourism as a pressure factor. If so, again the approach is diffuse as in the "Report on

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2 MEZZASALMA 1994 differentiates between action-oriented and systematical approaches. Action-oriented approaches aim at giving staff, clients and management immediate experience and success in making tourism more sustainable (learning by doing). Systematical approaches require a concept or management system with clearly defined goals, measures, responsibilities and timetables.

Sustainable Development in Germany 1994" (Federal Ministry of Environment and Nature Protection 1994).

In searching for a general framework which could support a systematical approach, the life-cycle analysis was chosen (see Figure 1). The open scheme allows different aspects and methods of measurement (e.g. environmental effects like emissions, waste, etc.) to be integrated. It follows the characteristics of the tourist product with its several components and its differentiation in time and space. Environmental effects as well as the need for action can be related to their cause and to the parties responsible. The life-cycle-analysis therefore serves as a holistic tool, ensuring that:

- travel is understood and looked upon as a process
- every phase and stage of travel is included in the analysis, from the moment the desire to travel is born to the final activities like cleaning of clothes.

Theoretically, it implies the analysis of the life cycle of every product connected with travelling, from the production of raw material to waste management. In principle, the environmental dimension is completed by also taking into account the economical and social aspects of the product or service delivered. As you can imagine, an overall assessment of all stages and products related to travelling cannot possibly be obtained. The cross-sectoral character of tourism would lead to multi-dimensional matrices which would have to be filled for many different products and services contributing to the touristic product. Therefore restrictions had to be set to the scope of interest:

Concerning the report, the analysis is concentrating on the "environment and nature" dimension. Accordingly this dimension is shown in bold letters "ev" in figure 1.

As far as the objective is a national report, a limitation was set to the tourist flows<sup>3</sup> included in the project. Domestic tourism is to be included thoroughly, Only the process of transport to and from a foreign destination will be included from outbound tourism. Transportation due to inbound tourism and the impact related to the stay of foreign tourists in Germany is also part of the research.

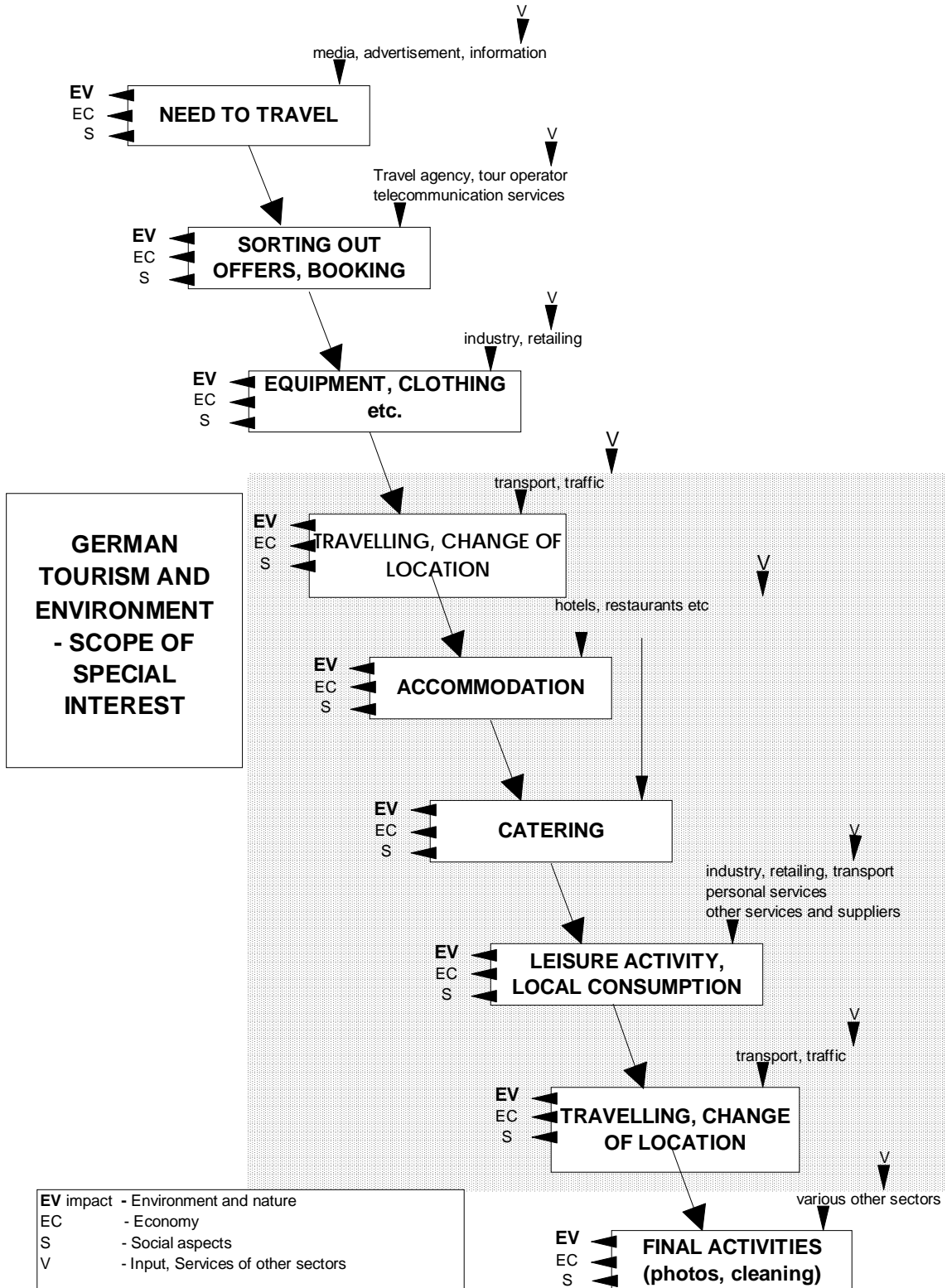
In order to outline a limited field of research and a manageable volume of data, the acquisition of parameters is limited in many cases to those which can be quantified and are approved indicators in the field of environmental assessment. Nevertheless, the multiple qualitative and complex processes by which tourism affects the environment will also be described.<sup>4</sup>

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3 Inbound, outbound and domestic tourism have been defined by the WTO/ Statistical Commission of UN including overnight stays as well as excursionists. Domestic tourism is understood as travelling of natives in their own country, inbound tourism is foreigners travelling to the country and outbound tourism is natives leaving the own country for travelling abroad (compare WTO et al.)

4 This is done by BTE, whose part of the project concentrates on the measurement and assessment of leisure activity on environment and the impact on protected areas.

Figure 1. Life-cycle analysis of an inclusive tour



Source: Projektgruppe Ökologische Wirtschaft 1987, S. 127

Many studies on life-cycle analysis, eco-balances, pressure indices and indicators agree on the need for a limited number of parameters and data to make results intelligible to decision-makers and the public.

The framework and methodology of the life-cycle-analysis has already been adapted to the field of tourism in a case study “Sustainable tourism in the town of Munich” (compare FEIGE/SCHERR 1994). Although many fields of the matrices could not be filled by detailed data, or even remained empty, the general concept ensured that:

- every aspect was considered and missing data and information was obtained
- certain matrices were linked to future goals and the elements needed to achieve these goals
- different methods and sorts of data were integrated in a system framework

Analysing the impact of tourism on the environment is only one step. As explained later (see 4) this first step is necessary to be able to assess the crucial environmental problems caused by tourism by gathering all the information available (case studies, research projects, calculation and extrapolation). In the case of a national report, these results will have to be brought up to the national level, if possible. The contribution of tourism to the critical environmental damage such as “depletion of the ozone layer”, “pollutants in air and water”, etc., will be estimated by the quantitative share of tourism among other economic sectors and human activities. This scientific evaluation will have to be followed by a participatory process of discussion. Finally, a concept for prior actions and measures will have to be worked out (proceedings described in 4.).

### **3. Indicators and methodological problems**

The assessment of environmental impacts of tourism on the environment requires a data base. The problems of indicators at this stage will only be discussed on the level of measurable direct effects like the use of primary energy in touristic transport, occupation of surface by touristic infrastructure, the output of waste in accommodation facilities etc. The more complex effects on vulnerable ecosystems e.g. through disturbance of species by leisure activity of tourists are undoubtedly a severe problem especially in certain areas (the Alps, coastal zones, mountainous regions). They are covered by the partner institution of DWIF, BTE.

Indicators and data on resource depletion, emissions, waste output or deposits have to be gathered on the basis of case studies, special research projects, grey literature, because there is a lack of official data in this field.

These case studies clearly illustrate that indicators have to consider specific attributes of tourism in order to give a precise picture of the impact of tourism. The following examples aim at showing those characteristics:

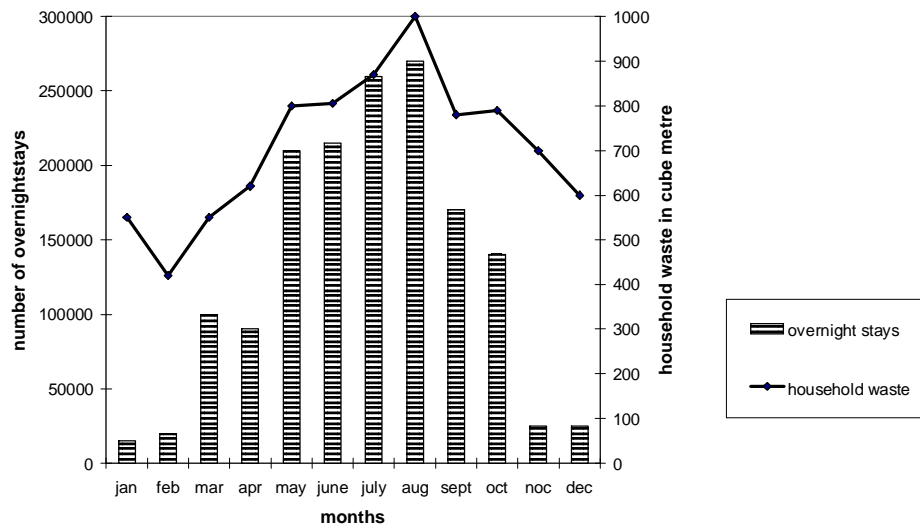
#### ***The impact of tourism and its seasonal dimension***

Environmental impacts by tourism might be driven and intensified by the seasonal structure. This might lead to extreme concentrations of visitors in certain locations during specific periods of time.

The example of a health spa near to the north sea coast, St. Peter-Ording, clearly illustrates the influence of seasonality in tourism on the monthly waste output. The curve of collected waste obviously

follows the number of overnight stays (see figure 2, compare MÖLLER 1992). The consequences of seasonality have been repeatedly discussed in terms of infrastructure capacity needed to meet seasonal maximums and the high costs deriving from maintaining those oversized facilities. In the St. Peter-Ording case the seasonal maximum of waste output required an additional vehicle for waste collection and the additional staff during the summer period. The waste water plant needed an extra processing unit which only operates during the peak season. Comparable problems can be stated for the general traffic situation, where on hot summer weekends the concentration of overnight guests combined with large amounts of day visitors can only be managed by more parking lots and special traffic management. In many German tourist municipalities the emissions by traffic, both noise and pollutants, endanger the officially acknowledged designation as a health spa (compare ADAC 1993).

Figure 2. Household waste and overnightstays in the health spa St. Peter-Ording 1989 - seasonal spread



Source: MÖLLER 1992

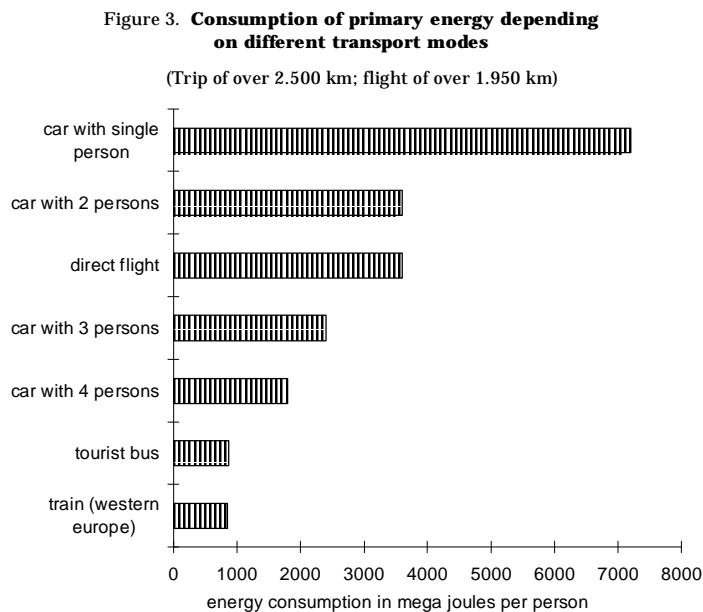
### *The impact of tourism and its regional dimension*

Because tourism is a typical regional phenomenon the impact of tourism can only be identified on a regional basis. The amount of waste caused by 550 Million overnight stays in Germany per year does obviously not even reach equal dimensions to the waste produced by the private households. 80 million German inhabitants would equal 29,2 milliards overnight stays<sup>5</sup> per year. In addition it can be argued that waste deriving from German tourists in Germany is not additional waste but substitutes the amount of waste the tourists would normally have caused at their home. On the other hand studies have verified that e.g. certain leisure activities during excursions or holiday lead to additional waste in parks, at beaches or at public swimming pools (compare FEIGE/MÖLLER 1992).

5 80 million inhabitants multiplied by 365 days .

But as shown in the St. Peter-Ording case study the concentration of tourism in a certain region leads to specific problems because the average tourist destination is of rural structure and therefore not prepared to handle these additional waste loads. The situation has to be valued differently when dealing with a metropolitan area as a touristic attraction. An analysis for the town of Munich proved that tourism only accounted for 5 % of the municipal waste. This dimension does not pose serious problems to the waste management of a 1.3 million inhabitants city (compare FEIGE, SCHERR 1994).

The analysis of collected waste per capita and year in the counties of Bavaria in 1984 illustrates the regional differentiation of waste-related problems. The highly attractive tourist region bordering the Alps, the so-called "Alpenvorland" shows equal waste amounts to the metropolitan regions of Munich, Nürnberg and Erlangen/Fürth. Detailed research in the county of "Berchtesgadener Land" (SIEBERT 1991) in fact identified tourism as the major waste generating sector.



Source: MEZZASALMA 1994

### ***The impact of tourism and its different appearances***

Tourism is a combination of many different products. Although characterised by similar features - change of location, overnight stay or day visit to a place outside the place of living - the actual tourism products differ. This implies differences in the environmental impacts as well. The mode of transport e.g. has an inevitable influence on the consumption of primary energy. Whether one travels by train, as a single or as part of a group by car or decides to take the direct flight - either choice has a tremendous influence on the resource consumption (see figure 3). The same is true for even the composition and amount of waste comparing different types of accommodation. The amount of waste per guest is higher in hotels<sup>6</sup> than in

6 The influence of external guests in the hotels restaurants certainly accounts for a considerable share of the total waste amount. Nevertheless the waste amount per guest proved also above average because of additional services and supply in this accommodation type.

pensions or on camping sites, where one finds a lower standard in service and supply. Concerning the composition of waste certain fractions or materials characterise the different types of accommodation. Waste of hotels is dominated by organic fraction due to the restaurant and catering.

### *Conclusion*

Obviously impacts of tourism have to be differentiated. To analyse them in their complex structure and to come to an adequate assessment, it will be important to decide:

- on the seasonal pattern, in which some indicators should be gathered
- on which regional level indicators should be measured and for what characteristic segments of the tourism market and which tourism products environmental impacts should be compared.

## **4. Perspectives - from analysis to action**

The analysis of the impact of tourism on the environment is only the first step of the project (see figure 4). This quantitative and qualitative research serves as a basis for the participatory process where the fields and goals for prior action are identified. There are many ways of getting there. The results of the quantitative and qualitative impact analysis allow the assessment of the share of tourism in crucial environmental problems. This can be seen as the most important criteria for putting a certain topic as a field for prior action. But especially from the political point of view international agreements might lead to other priorities. It could also be the ability of raising public awareness which might put preferences on a specific topic.<sup>7</sup> The accessibility to control is important when it comes to the realisation of goals through taking measures.

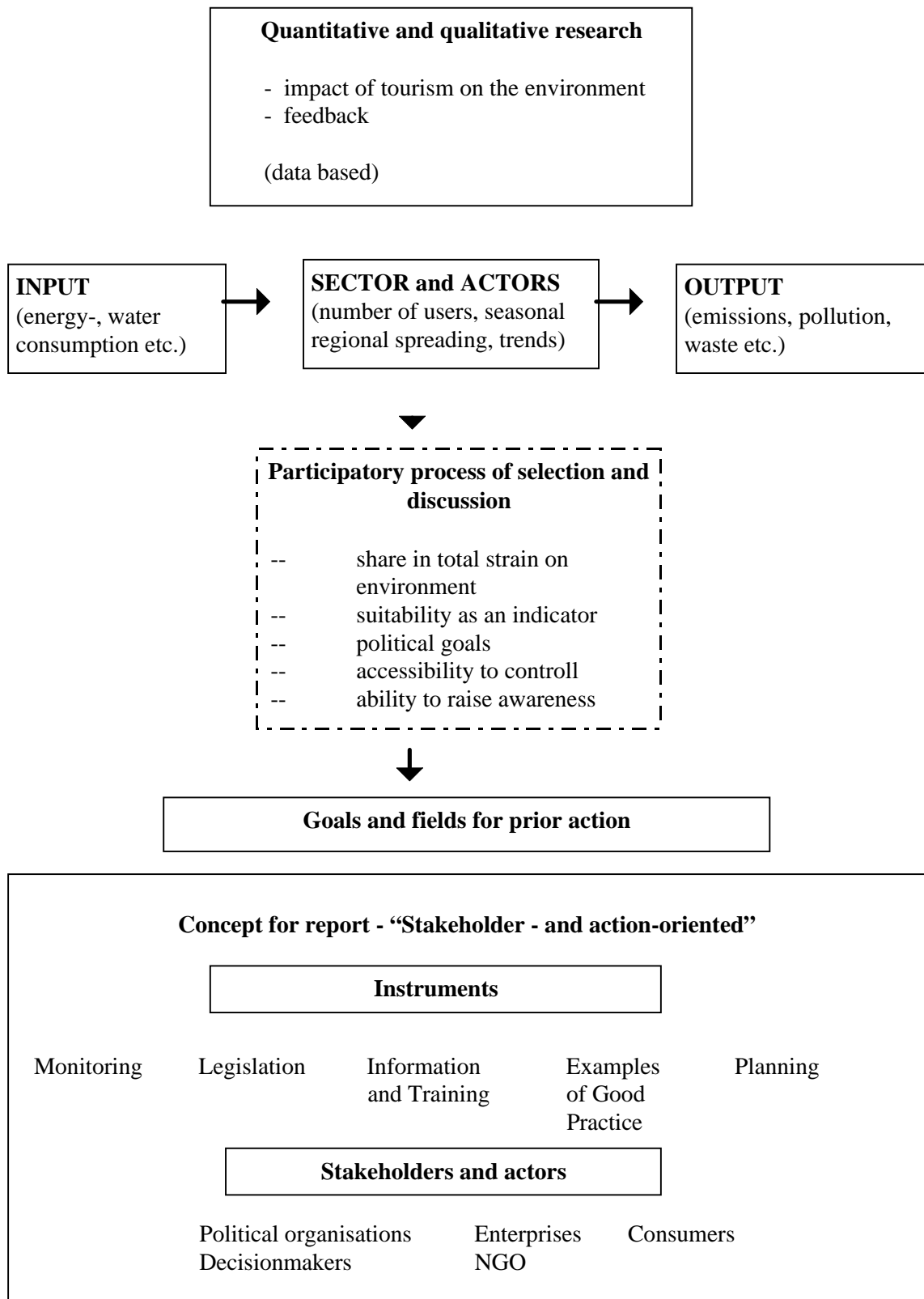
Goals and fields for prior action therefore will have to be intensively discussed between the different stakeholders and the politicians.

The actual concept for the report aims at being again "action-oriented" and involving as well as addressing the various stakeholders in tourism. Several instruments support the realisation of the goals. The presentation of "Examples of Good Practice" should serve as models for making tourism in Germany more sustainable. Monitoring, legislation, information and training add to this process. To involve tourism industry, tourism bodies, administration and the consumer in the process, all information has to be clearly addressed to the different partners. "Sustaining" tourism is also a question of channelling the right information in the most efficient way.

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<sup>7</sup> The campaign on wasteless or at least minimized waste at breakfast tables in hotels and guesthouses is an example for putting the focus on a minor problem in order to get widely spread attention to waste problems in the tourism industry.

Figure 4. **From analysis to action - the concept and steps**



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# FORECASTING TOURISM INDICATORS BY TRANSFER FUNCTION MODELS

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National Statistical Institute, Portugal

## 1. Introduction

The European Community establishment, by simplifying the movement of persons and goods, brought at the same time new challenges to the statistical system.

A substantial part of the statistical information concerned to the frontiers flows became, in this new free circulation context, dependent on complex inquiry processes, involving time and costs increasing for results output.

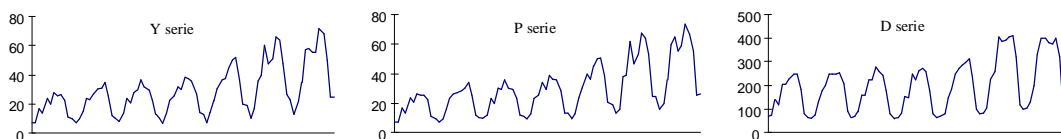
It is the case of tourism statistical information. However, in this statistical area, there are variables which the quantification procedures are relatively simple (number of vehicles that cross the border, number of passengers entered by air and railway, hotels occupation,...), providing a reasonable time slices for the results being available. In this point of view, this kind of variables can be treated as leading indicators of turistic activity.

We propose to integrate variables like “number of vehicles that cross the border”, “number of passengers entered by air and railway”, “hotels occupation” as input factors of transfer function models wich can be used to forecast tourism indicators.

The case studied refers to the forecast model where the output ( $Y_t$ ) is the “german tourists flow by airway” and the input factors are ( $P_t$ ) the “number of passengers landed in Portugal from flights proceeding from Germany” and ( $D_t$ ) the “hotel’s nigh’s lodging of german citizens”. Sample is composed by monthly data from january 1986 to decembre 1992.

## 2. Stationary transformation of data series

According to the chronograms, all data series are nonstationary.



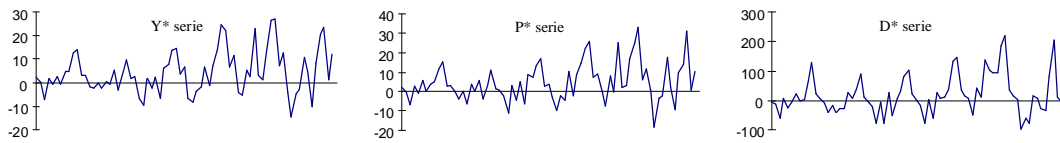
The data transformation with the seasonal differencing operator of order 12 and degree 1 has permitted the construction of a new “output” time series,

$$Y_t^* = (1 - B^{12})Y_t,$$

and two new stationary “input” time series,

$$P_t^* = (1 - B^{12})P_t \text{ e } D_t^* = (1 - B^{12})D_t,$$

represented by the next chronograms:



### 3. Prewhitening the input series

To prewhitening  $P_t$  and  $D_t$  values series we used a  $SARIMA(2,0,0) \times (0,1,0)_{12}$  model, respectively,

$$\phi_2(B)(1 - B^{12})P_t = \alpha_{[P]_t},$$

$$\phi_2(B)(1 - B^{12})D_t = \alpha_{[D]_t}.$$

These two models were estimated by the maximum likelihood method and we have obtained the following results ( $t$  ratios between parentheses):

$$\hat{\alpha}_{[P]_t} = -1,907 + \begin{pmatrix} 1 - 0,241B - 0,374B^2 \\ [2,28] \quad [2,13] \quad [3,31] \end{pmatrix} (1 - B^{12})P_t$$

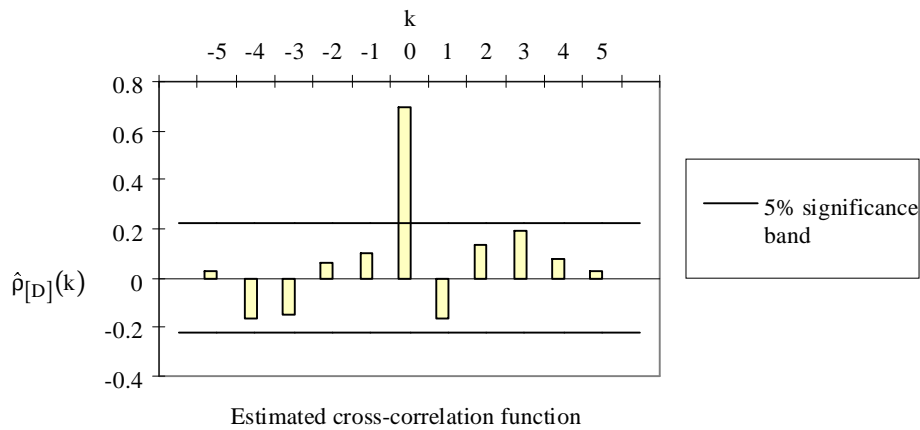
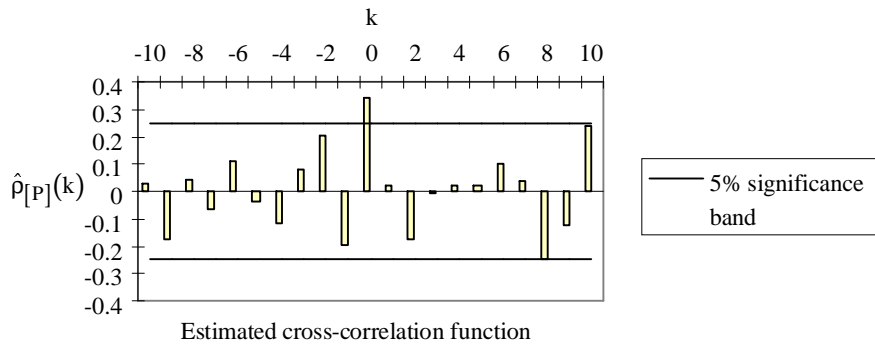
and

$$\hat{\alpha}_{[D]_t} = \begin{pmatrix} 1 - 0,360B - 0,488B^2 \\ [3,40] \quad [4,61] \end{pmatrix} (1 - B^{12})D_t.$$

We note that all coefficients are significant and the residual analysis confirm the hypothesis that  $\alpha_{[P]_t}$  and  $\alpha_{[D]_t}$  are not autocorrelated.

#### 4. Identification of transfer function model

The cross-correlations,  $\rho_{[P]}(k)$  e  $\rho_{[D]}(k)$ , between input noise processes,  $\alpha_{[P]t}$  and  $\alpha_{[D]t}$  respectively, with the correspondent “whitened” output value series,  $\beta_{[P]t}$  and  $\beta_{[D]t}$  respectively<sup>1</sup>, as shown in the pictures below, lag 0 exception, are not significant:



According to the variables nature this result is particularly interesting. As we could expect the input factors can be treated as coincident indicators of the output variable.

If this result suggests a preliminary transfer function model with impulses periods at lag 0 on both inputs series,

$$Y_t^* = v_{[D]0}D_t^* + v_{[P]0}P_t^* + \eta_t,$$

all analysis has confirmed this specification as the most satisfactory.

<sup>1</sup>  $\hat{\beta}_{[P]t} = -1,907 + (1 - 0,241B - 0,374B^2)(1 - B^{12})Y_t$  e  $\hat{\beta}_{[D]t} = (1 - 0,360B - 0,488B^2)(1 - B^{12})Y_t$

## 5. The final transfer function model

The preliminary estimation results point out that noise series,  $\eta_t$ , are a moving average process of degree 6 and order 1,

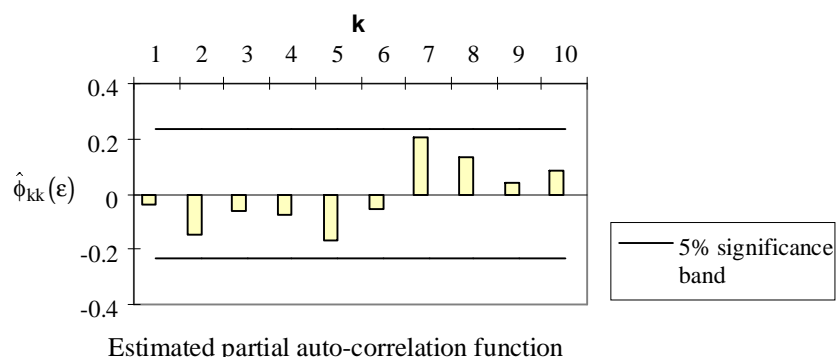
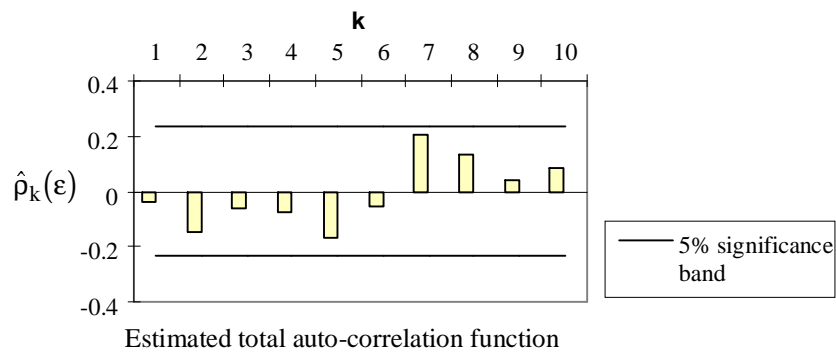
$$\eta_t = \theta_1(B^6)\varepsilon_t.$$

According to this specification we have obtained by maximum likelihood method, the following estimated final transfer function:

$$\hat{Y}_t^* = 0,014 D_t^* + 0,910 P_t^* + \left( 1 - 0,260 B^6 \right) \hat{\varepsilon}_t.$$

$[2,12]$ 
 $[25,86]$ 
 $[-2,12]$

The pictures below make evident that nor total neither partial autocorrelations of noise processes are significant from lags 1 to 10.



Finally, the diagnostic checks by cross-correlations between noise process and the prewhitened input series allows us to accept the hypothesis of model sufficiency and unidirectional causality.

## 6. Prevision

The following table presents the point and confidence interval (95%) forecasts of output monthly series over years 1993 and 1994:

1993				1994			
Month	Y <sub>prev</sub>	inf95	sup95	Month	Y <sub>prev</sub>	inf95	sup95
1	13.8	11.6	15.9	1	15.6	12.4	18.7
2	21.6	19.4	23.8	2	23.7	20.5	26.8
3	34.3	32.1	36.5	3	37.5	34.4	40.7
4	53.8	51.6	56.0	4	57.0	53.8	60.1
5	54.6	52.4	56.8	5	65.1	62.0	68.3
6	51.3	49.1	53.5	6	66.6	63.4	69.7
7	52.1	49.8	54.4	7	61.2	58.0	64.4
8	65.7	63.4	67.9	8	73.1	69.9	76.3
9	63.4	61.1	65.6	9	70.3	67.2	73.5
10	46.6	44.3	48.8	10	46.7	43.5	49.9
11	24.2	21.9	26.4	11	26.2	23.0	29.4
12	24.5	22.2	26.7	12	27.8	24.5	30.9

Assuming that there is no uncertainty in input values (in fact we dispose the information about these factors over all period of forecasting), we can verify the efficiency of this forecasting method looking to the very small confidence interval amplitude results.

## 7. Final remarks

After the implementation of European Union a large set of statistical information about international goods and people flows are no longer available by using administrative sources. To settle variables like “number of tourists” national statistical system are now obliged to implement a very complex inquiry operations involving broad times delay to dispose data.

However, there are variables like “number of passengers entering in Portugal by way of transportation” or “hotel’s occupation by nationality” witch the statistical quantification is not so hard. The existence of

structural relations between this group of variables and the “number of tourists” allows us to forecasts the later by using the former as input factors.

Transfer function models become a theoretical and practical powerful methodology for our purposes. If celerity on input factors quantification is a main argument of this problematic, output forecasting doesn't need exogenous input factors data. Forecasting by transfer function models is possible even if we haven't input factors observations. In fact, as input factors values series are structured by a ARIMA model, we can forecasts those variables themselves by transfer function methodology.

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# **SOCIO-ECONOMIC STRUCTURES IN TOURISM REGIONS. COMPARISON OF SELECTED TOURISM AND NON-TOURISM COMMUNITIES IN AUSTRIA**

**Alfred Franz and Peter Laimer, Austrian Central Statistical Office**

## **Introduction**

From the outstanding importance which tourism has attained for the Austrian post-war economy a major impact may be expected on socio-economic structure as well. Interestingly, for the latter there is less statistical evidence than for tourism itself.

The present study on the socio-economic structures in touristic regions attempts a basic two-fold approach: 1991 figures are cross-compared; then time series of selected socio-economic indicators are combined (1971, 1981 and 1991).

The analysis is done on the basis of ad hoc-samples of (highly significant) tourism (STC) and non-tourism communities (NTC)<sup>1</sup>. To achieve this, several "basic" socio-economic variables (population, sex, education, age, tourism variables, occupation etc.) and other "derived" indicators (i.e. inhabitants per km<sup>2</sup> of permanently settled areas, number of those occupied in hotels/ restaurants and private accommodations etc.) have been used; this will be done for the basic year 1991 (comparison of selected 1991 figures) as well as for the years 1971, 1981, 1991 (selected time series); the question should be answered on how tourism influences socio-economic and -demographic structures, and whether tourism stimulates certain developments in comparison with non-tourism conditions.

From the statistical point of view the analysis is based on the results of the Population Census (1971, 1981 and 1991) as well as on the results of Tourism Statistics (1972<sup>2</sup>, 1981 and 1991). Only for reasons of comparison the results of Austria as a whole and of the communities altogether recorded in the official tourism statistics are used.<sup>3</sup>

The analysed variables are classified as follows (see Table 2 and Annex):

- General characterisation (communities, permanently settled areas, secondary residences)
- Socio-demographic variables (inhabitants, sex, marital status, size of households, age-structure)
- Educational/professional attainment
- Employment and occupation (by economic sector; unemployment)
- Variables concerning tourism statistics (proper beds, overnight stays)

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1 Selected non-tourism communities are abbreviated "NTC", selected tourism communities "STC".

2 Data for 1971 were not available on data bank.

3 Nearly two thirds of all Austrian communities.

This selection of variables will (most likely) clarify the essential aspects of life in these communities, as well as indications of stress and dynamics of change. However, such analysis is still limited by comparison problems and lack of variables, so that in particular socio-cultural changes cannot be fully grasped.

After a description of Austria's economic development and the touristic condition at large as well as a presentation of the statistical basis; the results will be dealt with as follows:

- Cross-comparison (1991): STC and NTC in comparison with Austria as a whole
- Time series (1971, 1981 and 1991): Development of selected indicators in Austria, STC und NTC, STC and NTC in comparison

In the Annex, the methods used and the following Tables 1 to 6 and Charts 1 to 5 are presented.

## **1. Introduction: Austria and its tourism communities**

### ***1.1 Overview***

Austria, a member of the EU since 1995, is a very small and predominantly rural country geographically situated in the heart of Europe.

The economic development has been quite favourable during the last decades. The inflation rate decreased to 2.2 per cent between 1970 and 1995; in the same period the real GDP doubled and the per capita GDP (real) increased by about 75.0 per cent, from 115,000 ATS<sup>4</sup> (US\$ 10.140<sup>5</sup>; 1970) to 190,000 ATS (US\$ 16.728<sup>6</sup>; 1991). In terms of GDP per capita (in PPS) Austria ranks 8th among the OECD countries in 1994.

The unemployment rate on the other hand increased by about 4.0 per cent points between 1970 and 1991.

Foreign trade (in the wide sense: including tourism) acknowledged extreme increases, with imports accounting for 565 bill. ATS and exports for 467 bill. ATS in 1993. In the same year the surplus of imports reached 98 bill. ATS.<sup>7</sup>

In 1991, Austria had 7.8 mill inhabitants, with a female population amounting to 51.8 per cent. Since 1970 life expectancy (at birth) increased by 6.7 years for men, and by 6.0 years for women. One fifth of the Austrian population is now above the age of 60, while the per centage of children has continuously decreased, due to declining birth rates.

Concerning the educational attainment of the Austrians a tendency in higher education is obvious.

Especially because of increasing participation rates of women (1991: 46.1 per cent), the number of the occupied (as compared with total population) is still growing. Regarding to the economic sectors there is a

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4 Austrian Schilling.

5 1990 exchange rate.

6 See footnote 5.

7 ÖSTAT, Republik Österreich 1945 - 1995.

lasting tendency towards the service sector: In 1971, 420,000 persons worked in the agriculture and forestry sector, 1.3 mill. in the industry sector while in 1991, the persons engaged in agriculture and forestry decreased to 210,000; the number of persons engaged in the industry sector was stagnant, but in the same period the number of occupied in the service sector increased by about 64 per cent<sup>8</sup>

## ***1.2 Tourism statistics***

Overnight stays in tourism have constantly increased (1970: 88 mill.; 1994: 122 mill. overnight stays; +38.6 per cent). In the same period bed-places in commercial accommodations have increased from 531,000 to 682,000; whereas bed places in private accommodations decreased by 30 per cent. In the mid-eighties long-term losses of market shares of Austria in the European travel-economy stopped and the international competitive position (share of receipts) recovered. Only recently, between 1993 and 1994, have nights spent decreased by 4.0 per cent (this negative development is still continuing in 1995). Since 1970 foreign exchange receipts have increased from 26 bill. ATS to 150 bill. ATS (1994). In 1994 the travel expenditure of residents and non-residents in the Austrian market accounted for about 181 bill. ATS, with a decrease by 1.5 per cent only recently. Between 1970 and 1994 travel propensity<sup>9</sup> has increased from 11.8 to 15.2 overnight stays per inhabitant. In the same period the currency receipts have risen from 3,500 ATS/inhabitant to 18,700 ATS/ inhabitant<sup>10</sup>, which most clearly indicates the outstanding degree of tourism intensity in Austria.

In 1990 the share of tourism on GDP accounted for about 4.4 per cent<sup>11</sup>. However, since 1991 steadily increasing losses in (real) market shares have had to be accepted.<sup>12</sup>

Central information concerning the Austrian tourism is based on the regular accommodation and overnight stay statistics. It shows the monthly arrivals and overnight stays of tourists, by kind of accommodation and country of origin. The data is reported by 1.500 "touristic" communities (TTC), which represent two thirds of all Austrian communities (2,300). Those communities with more than 3,000 overnight stays per year are registered. (This fact is checked every five years.)

In this study TTC are only used as a reference, but not analysed per se, because by the mentioned criteria also greater, basically non-touristic units are included (e.g. capitals of provinces).

## ***1.3 STC and NTC in general***

Tourism in Austria shows a clear west-east-separation and an accordingly varying regional importance of tourism; the western Austrian Länder (Tirol, Salzburg, Kärnten and Vorarlberg) account for about three fourths of total overnight stays and thus the coexisting economic activities.

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8 See footnote 7.

9 Nights spent by tourists per inhabitant.

10 ÖSTAT, Der Fremdenverkehr im Jahre 1970 bzw. 1994, ÖSTAT, Republik Österreich 1945 - 1995.

11 See also OECD, Tourism Statistics: Design and application for policies (draft publication prepared with the help of John Joice).

12 Austrian Institute of Economic Research, Bericht über die Lage der Tourismus- und Freizeitwirtschaft in Österreich 1995.

The NTC are mostly found in the eastern Austrian Länder (see [Table 1](#) and [Chart 1](#) - please note that this chart is not available due to technical restrictions).

According to the present criteria, the tourism communities (STC) selected for this study comprise 180 units, the selected non-tourism communities (NTC) 234 units (see also the [Annex](#)).

Thus, the STC represent 7.7 per cent of total Austrian communities. There live 3.9 per cent of the Austrian population. The share of total permanently settled areas<sup>13</sup> accounts for 4.5 per cent

Austrian tourism is - as well as in other countries - a spatially concentrated phenomenon. With about 65 mill. overnight stays in 1991 and 0.5 mill. available beds the STC alone represent for half of the Austrian overnight stays. Within the total population occupied in the hotel and restaurant branch one fifth is found in STC, whereas this share in total population occupied in agriculture and forestry amounts to about 4 per cent.

For purpose of contrast the 234 NTC selected represent 10 per cent of total Austrian communities and 4.5 per cent of all inhabitants. The permanently settled areas-share accounts for 11.5 per cent In the NTC only 1 per cent of total Austrian population occupied in the hotel and restaurant sector works in this branch, whereas the share of population occupied in agriculture and forestry amounts to about 10 per cent.

Thus, with only a quick glimpse at comparative STC and NTC figures, one can see that apart from the differentiated spatial distribution of Austrian tourism major differences are easily found with a view to employment.<sup>14</sup>

**Table 1. Spatial distribution of the selected communities**

	STC		NTC	
	number	in p.c.	number	in p.c.
Tyrol	88	49	0	0
Salzburg	30	17	1	0
Carinthia	21	12	0	0
Vorarlberg	17	9	3	1
Styria	9	5	29	12
Upper Austria	8	4	92	39
Lower Austria	5	3	95	41
Burgenland	2	1	14	6
Vienna	-	-	-	-
<b>Total</b>	<b>180</b>	<b>100</b>	<b>234</b>	<b>100</b>

13 PSA.

14 A&F: Agriculture and forestry; this sector is chosen because A&F is important for tourism quality.

Table 2. Selected indicators 1991 (total Austria, STC, NTC; Austria-shares)

	Austria (A)	of which STC		of which NTC		of which TTC	
	10 <sup>3</sup>	10 <sup>3</sup>	A=100	10 <sup>3</sup>	A=100	10 <sup>3</sup>	A=100
Permanently settled areas (ha)	3,260	148	4.6	371	11.4	1,985	60.9
Secondary residences	539	21	4.0	24	4.4	344	63.8
Inhabitants	7,796	307	3.9	342	4.4	4,963	63.7
Females	4,042	157	3.9	174	4.3	2,561	63.4
Aliens	518	16	3.1	13	2.6	280	54.1
Divorced	386	8	2.1	10	2.5	212	55.0
"Singles"	3,249	145	4.5	141	4.3	2,130	65.6
Higher general secondary school	333	8	2.3	7	2.1	183	54.9
Apprenticeship	2,069	82	4.0	93	4.5	1,317	63.6
Unemployed	216	10	4.7	6	2.8	121	56.1
Private households with 1 person	894	22	2.4	26	2.9	492	55.1
Private households with 2 persons	1,674	46	2.8	62	3.7	989	59.1
:							
15-19 years*	502	23	4.5	24	4.8	331	65.9
20-29 years*	1,347	56	4.1	57	4.2	862	64.0
30-39 years *	1,154	46	4.0	50	4.4	734	63.6
:							
60-69 years*	790	28	3.5	35	4.4	499	63.1
:							
	**						
Beds (February)	964	447	46.4	-	-	964	100.0
Beds (August)	1,155	522	45.2	-	-	1,155	100.0
Overnight stays	130,073	65,620	50.4	-	-	130,073	100.0
Overnight stays - residents	30,431	10,416	34.2	-	-	30,431	100.0
Overnight stays - WS 90/91	51,389	30,073	58.5	-	-	51,389	100.0
Overnight stays - SS 91	78,117	35,164	45.0	-	-	78,117	100.0
Overnight stays in commercial accommodations	80,257	41,979	52.3	-	-	80,257	100.0
Overnight stays in August	23,360	11,042	47.3	-	-	23,360	100.0
Economically active population, total	3,684	144	3.9	162	4.4	2,306	62.6
Economically active population, hotels and restaurants	227	33	14.4	5	2.2	164	72.3
Occupied, total (incl.commuters)	3,406	115	3.4	107	3.1	2,238	65.7
Occupied, hotels and restaurants (incl.commuters)	190	34	18.1	2	1.1	142	74.9
Occupied, private accommodations (priv.acc.; incl.commuters)	147	21	14.6	-	-	147	99.8
Occupied, hotels/restaurants and priv.acc.(incl.commuters)	337	56	16.6	-	-	289	85.8
Occupied, agriculture and forestry (incl.commuters)	211	9	4.1	21	10.0	132	62.6
Commuters	1,942	43	2.2	55	2.8	1,073	55.3

\* Only the age classes mentioned were considered significant for this study.

\*\* All recorded tourism communities (1,486).

- Not applicable

## 2. Cross-section comparison (1991)

### 2.1 Statistical basic data (Table 2)

Broken down by total Austria, of STC and NTC Table 2 shows the indicators, which will be more closely analysed in the following Chapters (sometimes differently grouped). (They comprise some of the indicators presented in full in the Annex.) First the comparison will be done between all of Austria, STC and NTC and secondly, directly between STC and NTC; both cases being supported by some tables and charts. More specifically the comparison comprises: shares in all of Austria (Table 2); average STC/NTC statistics in comparison with Austria (Table 3), and structural comparisons (to simplify matters the latter also standardised on the basis of Austria as a whole; Table 4)

### 2.2 STC and NTC compared with Austria (Tables 3, 4; Chart 2, 2)

There to provide a first idea a couple of selected variables on STC/NTC is selected to the Austrian averages (community averages, see Table 3). Selected variables such as, secondary residences, marital status, educational attainment, number of inhabitants ("real" and "fictitious" inhabitants)<sup>15</sup>, inhabitants per permanently settled areas, the economically active and occupied population as well as commuters point out significant differences between the STC/NTC and Austria.

Table 3. Some average figures in contrast

	Austria (A)		STC		NTC	
	Ø (per community)					
	10 <sup>0</sup>	10 <sup>0</sup>	A=100	10 <sup>0</sup>	A=100	
Sea altitude, m	520	902	173	608	117	
Secondary residences	229	51	192	102	45	
Inhabitants	1,313	1,703	130	1,461	111	
Aliens	220	88	40	57	26	
"Singles"	1,381	807	58	601	44	
Academic secondary schools	142	42	30	30	21	
Permanently settled areas (PSA)	1,386	824	59	1,585	114	
Inhabitant per km <sup>2</sup> PSA	239	207	87	92	38	
"Fictitious" inhabitants per km <sup>2</sup> PSA 1991	250	328	131	92	37	
Economically active population*	1,565	800	51	691	44	
Economically active population in hotels and restaurants	96	182	190	22	24	
Occupied population**	1,448	641	44	457	32	
Occupied, in hotels and restaurants	81	191	236	9	11	
Occupied, Agriculture and forestry	90	48	53	90	100	
Commuters	825	241	29	233	28	

\* Occupied population and unemployed

\*\* Employees, self-employed, paid family workers and persons in waiting period

15 The numbers on the "fictitious" inhabitants are the sum of inhabitants (residents) and the tourists present.

Concentrating on STC and Austria as a whole, the major differences are coming up concerning the age-structure, especially in the age groups from 15 to 19 years (STC: 7.4 per cent, Austria: 6.5 per cent), from 20 to 29 years (STC: 18.2 per cent, Austria: 17.3 per cent) and from 60 to 69 years (STC: 9.1 per cent, Austria: 10.1 per cent). With 47.7 per cent the share of singles seems to be particularly high in STC, comparing to Austria (41.7 per cent). The situation is also quite different concerning the number of divorced (STC: 2.7 per cent, Austria: 5.0 per cent), persons with school leaving certificate of a higher general secondary school (STC: 2.5 per cent, Austria 4.3 per cent), aliens (STC: 5.2 per cent, Austria: 6.6 per cent): in STC in each case the share of the respective total population (see [Chart 2](#)) is lower than on the Austrian average. The share of persons with a completed apprenticeship is just above the Austrian average.

In STC the share of commuters in the total occupied population is below-average (STC: 37.6 per cent, Austria: 5.6 per cent). The share of the population occupied in hotels and restaurants is well over the Austrian average (STC: 29.7 per cent, Austria: 5.6 per cent).

Similarly to STC with Austria is the share of persons according to total population between 15 and 19 years above average (NTC: 7.1 per cent, Austria: 6.5 per cent) as well as the persons with completed apprenticeship (NTC: 27.2 per cent, Austria: 26.5 per cent). The share of people aged between 20 and 29 years (NTC: 16.7 per cent, Austria: 17.3 per cent) is below average, whereas the shares of age groups between 30 and 39 years (NTC: 14.7 per cent, Austria: 14.8 per cent) and between 60 and 69 years (NTC: 10.2 per cent, Austria: 10.1 per cent) are similar to those of Austria. In NTC the share of singles accounts for about 41 per cent which is equivalent to the Austrian average. Shares below average are shown for the unemployed, the aliens, the divorced and persons continuing in a higher general secondary school. In NTC the share of commuters according to total occupied population (NTC: 51.0 per cent, Austria: 57.0 per cent) is below average, and the share of those occupied in hotels and restaurants (NTC: 2.0 per cent, Austria: 5.6 per cent) as well.

In conclusion, the most important differences between Austria and STC appear for the marital status (single and divorced) and the share of the aliens. Also the shares of the "elderly" and the "youth" are different. Understandably the differences between the shares of the population occupied in hotels and restaurants and the commuters are also very high.

Comparing Austria and NTC the major differences are also concerning the "elderly" and the "youth"; a major difference is also obvious concerning the share of divorced whereas the single share is on average. In NTC the share of those occupied in hotels and restaurants is below average.

Little differences exist concerning the proportion of sex, the share of mid aged persons and the share of persons with completed apprenticeship. In STC and NTC the share of persons with a school-leaving certificate is below average.

Table 4. Shares 1991 in contrast (total Austria, STC, NTC)

	Austria		STC		NTC	
	p.c.		p.c.	A=100	p.c.	A=100
<b>Inhabitants (=100 p.c.):</b>						
Females	51.8		51.1	98.5	50.8	98.0
Aliens	6.6		5.2	77.8	3.9	58.5
Divorced	4.9		2.7	53.6	2.8	56.4
"Singles"	41.7		47.4	113.6	41.1	98.7
Higher general secondary school	4.3		2.5	57.4	2.0	47.5
Apprenticeship	26.5		26.9	101.3	27.2	102.4
Unemployed	2.8		3.3	119.7	1.8	63.5
15-19 years	6.4		7.4	114.1	7.1	110.5
20-29 years	17.3		18.2	105.4	16.7	96.7
30-39 years	14.8		15.0	101.2	14.7	99.5
60-69 years	10.1		9.1	89.6	10.2	100.3
<b>Occupied (=100 p.c.):</b>						
Occupied in hotels and restaurants (incl. commuters)	5.6		29.7	533.9	2.0	36.4
Occupied in agriculture and forestry (incl. commuters)	6.2		7.5	120.8	19.7	317.8
Commuters	57.0		37.6	65.9	51.0	89.5

Chart 2. Differences in structure between Austria, STC und NTC 1991  
 (Share in the "respective" total population)

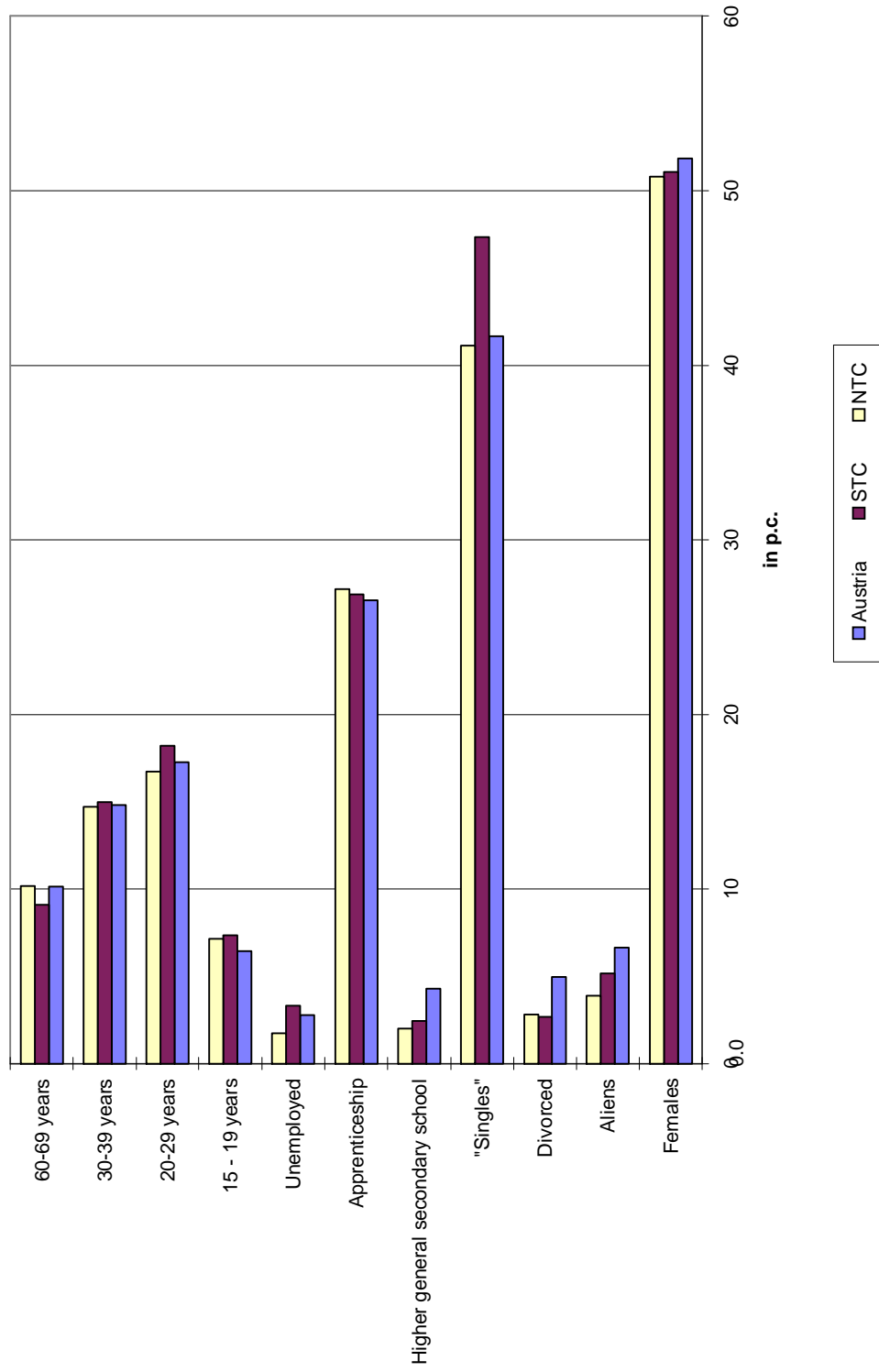
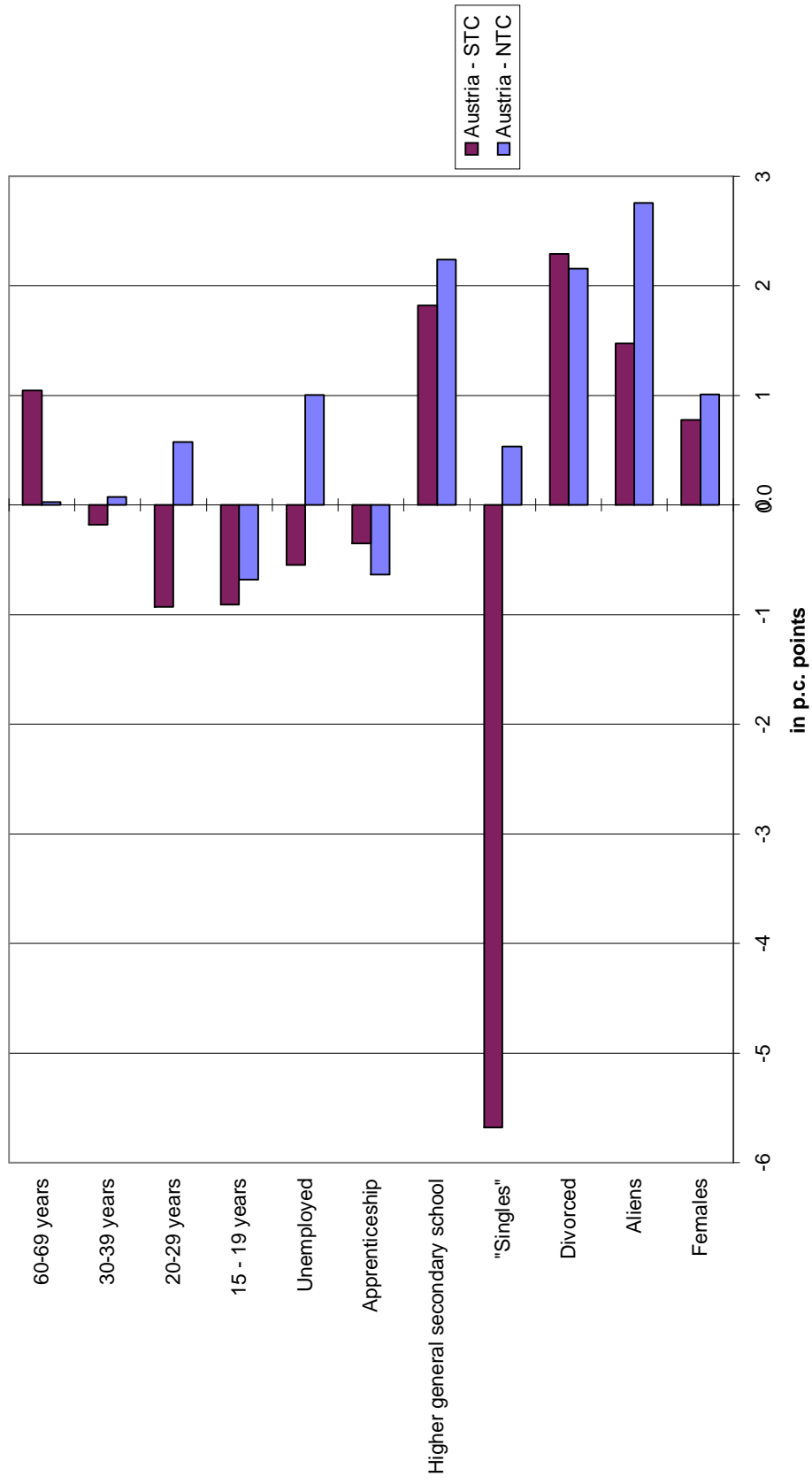


Chart 3. Differences between STC/ NTC and Austria 1991



### ***2.3 STC and NTC in direct comparison (Tables 3, 4; Chart4)***

Referring to certain selected variables STC and NTC are compared. To figure out most significant differences as in Section 2.2 the Tables 3 and 4 may be used for interpretation; in spite of no really new information the following comparison makes the differences clearer, all the same.

The most obvious differences exist for the share of those occupied in hotels and restaurants (27.7 per cent points) and those in the A&F-sector (12.2 per cent points). Also regarding the number of secondary residences, the average number of inhabitants per community, the share of aliens, the marital status, the educational attainment and the number of inhabitants ("real" and "fictitious" inhabitants<sup>1</sup>, related to permanently settled areas) greater differences become obvious.

According to Chart 4 the major discrepancies occur between: the numbers of unemployed, the shares of aliens, the numbers of "singles" and the age structure (especially concerning the "young" and the "old"). Thus, in STC there is an average of 56 unemployed, which is twice as much in NTC. And the share of aliens is by 1.2 per cent points higher in STC than in NTC (5.2 per cent according to total population; this nearly agrees with the figures in larger towns (e.g. Eisenstadt 2.5 per cent, Klagenfurt 4.5 per cent, St. Pölten 6.1 per cent).

Also the larger share of singles in STC (47.4 per cent) seems to be of greater significance (NTC: 41.1 per cent), whereas the differences in shares of the divorced are smaller. Differences are obvious concerning the age structure: the share of 20 to 29 group in STC (18.2 per cent) is larger than in NTC (16.7 per cent) whereas in NTC the share of persons with 40 years and more increases (e.g. age group from 60 to 69 years in STC: 9.1 per cent, in NTC: 10.2 per cent).

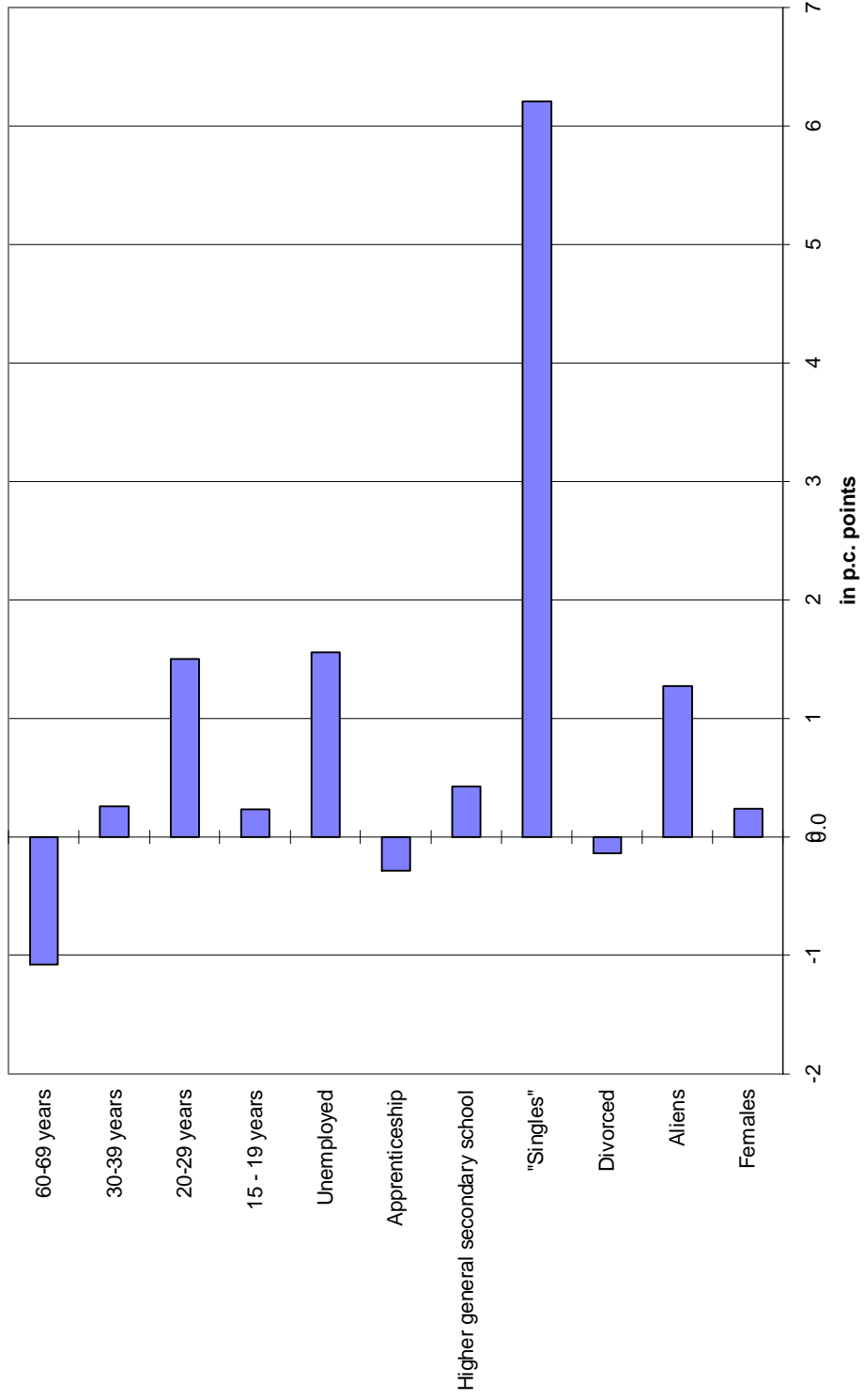
To sum up the analysis indicates that the most significant divergencies between STC and NTC are obvious concerning employment in hotels and restaurants, and the number of inhabitants per unit of permanently settled areas. Regarding the socio-economic structure the largest differences occur in the marital status and age structure variables.

Nevertheless, the differences between STC and NTC if compared directly are less pronounced than those in comparison with Austria (see Chart 3). The sum of the differences (excl. "singles") amounts to 7 per cent points among STC/NTC, 11.2 per cent points among Austria/STC and 10.3 per cent points among Austria/NTC. This may point to the fact that between STC and NTC the structural differences are not as pronounced as expected and that pervasive rural structures are still predominant, most deeply affecting socio-economic structures of the communities.

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1 See footnote 15.

Chart 4. Differences between STC and NTC 1991



### 3. Time series (1971 - 1991)

#### 3.1 *Developments in Austria: STC and NTC (overview)*

The number of inhabitants in Austria increased by 1.3 per cent between 1971 and 1981 and by 3.2 per cent between 1981 and 1991. During the same period the growth rates in STC with 5.2 per cent and 7.6 per cent, respectively, were higher. The NTC show a situation more similar to Austria as a whole; between 1971 and 1981 the growth rates amounted to 1.3 per cent, between 1981 and 1991 3.7 per cent

Between 1971 and 1981 in STC the number of aliens increased by about 30 per cent, between 1981 and 1991 by 100 per cent, whereas between 1981 and 1991 in NTC with 87 per cent the growth rate was lower (Austria as a whole: 78 per cent).

The share of women living in STC decreased by 0.4 per cent points between 1971 and 1991, which is lower than in NTC (-1.1 per cent points; Austria: -1.2 per cent points). The growth rates of the female population in STC were above the Austrian average.

Concerning the average of the "singles" in STC there are increases, in NTC decreases.

In STC between 1971 and 1981/ 1981 and 1991 private households with 1 person ("single-households") show increases by about 44 per cent and 36 per cent, which were lower by 10 to 20 per cent points in NTC (Austria 1971/81: 25.5 per cent, 1981/91).

Concerning the shift of the age structure between 1981 and 1991 in STC, NTC and Austria there occurred strong decreases among the age group from 15 to 19 years, whereas in STC the age group from 20 to 29 years showed increases stronger than in Austria and NTC. In STC between 1971 and 1981 the age group from 15 to 19 years still increased (by about 25 per cent). The age group from 60 to 69 years showed the strongest decreases between 1971 and 1981, which were lowest in STC (by about -14 per cent).

In the last two decades the occupied population showed the strongest increases in STC, whereas between 1971 and 1981 in NTC there were even decreases. Concerning those occupied in the hotel and restaurant sector in STC between 1971 and 1981 there were increases by about 40 per cent: between 1981 and 1991 this dynamic development became stagnant; the increases went down under the Austrian average and under the number occupied in hotels and restaurants in NTC. The occupied population in A&F decreased in STC, NTC and Austria as well. Concerning the number of commuters the highest growth rates occurred in STC (+ 70 per cent) whereas between 1981 and 1991 they approached the Austrian average.

In terms of population density (per unit permanently settled areas (PSA)) a major problem for tourism communities are indicated: in 1991 in STC 207 inhabitants/km<sup>2</sup> were enumerated, whereas in NTC 92 inhabitants/km<sup>2</sup>. In STC, this situation is caused primarily by tourists; i.e. in summer season 1991 the population density reached at 337 persons/km<sup>2</sup> per day. The greatest increases occurred in the winter seasons 1972/73, 1980/81 and 1990/91 (see Table 5).

#### 3.2 *STC and NTC in comparison (1971 - 1991)*

As shown in Chart 5 and Table 6 the largest differences between STC and NTC in the last two decades are obvious concerning the share of unemployed, aliens, persons completed a higher general secondary school, "singles" and the "olds". - Basically regarding the mentioned variables and other ones as well there are tendencies of assimilation. I.e. in 1971 in STC 8.6 per cent and in NTC 7.8 per cent (difference of 0.8 per cent points) of the respective total population are between 15 and 19 years old, whereas in 1991 the

difference amounted to 0.2 per cent points only. In 1971 the share of persons between 60 and 69 years was 8.7 per cent in STC and 10.7 in NTC (difference of 2 per cent points); the difference decreased to 1.1 per cent points in 1991. In 1971 the share of singles amounted to 52.7 per cent in STC, 45.0 per cent in NTC; till 1991 in STC the share decreased more strongly in STC than in NTC (to 47.3 per cent and 41.1 per cent). With (still) a share of 19.6 per cent occupied in the A&F sector (calculated according to total occupied population) in 1971 the STC were by 24.6 per cent points below NTC (i.e. 5.7 per cent points above the Austrian average). These developments continued until 1991 so that the difference between STC and NTC steadily diminished.

In STC the comparison of relative shares of certain groups of population according to total population shows the strongest increases in the number of aliens (1971: 2.0 per cent, 1991: 5.2 per cent). Concerning the divorced NTC (1991: 2.8 per cent) and STC shares (1991: 2.7 per cent) are similar (and both higher than the Austrian average). In STC and NTC as well are the decreases concerning the "singles"-share disproportionately high.

Comparing with NTC (1971: 11.8 per cent., 1981: 15.0 per cent, 1991: 16.7 per cent) in STC the age structure (1971: 14.0 per cent., 1981: 16.2 per cent, 1991: 18.2 per cent) showed a steady increase in the age 20 to 29 years group. The share of "elderly" (60-69 years) is similar to the NTC average (and comes close to the Austrian average). As to the level of education, the share of persons completing a higher general secondary school hardly increases in STC, NTC (and Austria), whereas the apprenticeship yield grows (especially between 1981 and 1991).

In STC the share of those occupied in the hotel and restaurant is close to 20-25 per cent points higher than on the Austrian average, and in NTC this share is below the Austrian average. Between 1971 and 1991 in STC the share of those occupied in A&F decreased by 12.2 per cent points, in NTC by 24.6 per cent points.

With regard to the development of population (see [Table 6](#)) major differences between STC and NTC become obvious; in STC the increase was stronger than in NTC. In the same period the increase of "single-households" was also much stronger in STC than in NTC. In STC the occupied population also shows stronger increases than in NTC (and in total Austria as well). To sum it up, in STC the dynamics of development is by all means more pronounced than in NTC.

#### **4. Summary**

Summing up the analysis showed a mixed situation concerning the socio-economic structure in STC and NTC. Anyway, in highly significant touristic regions tourism has a positive impact on population development, with a small surplus of the younger and a larger number of workplaces. Not surprisingly, there is also an obvious tendency towards predominance of the employment in the hotel and restaurant sector. On the other side certain developments come to the surface which intuitively were not so expected.

Contrary to the cross-section analysis for the year 1991 greater differences become obvious in the dynamic analysis between 1971 and 1991. This might be because of the extensive assimilation of socio-economic structures between STC and NTC.



Chart 5. Changes of selected indicators in STC and NTC between 1971 and 1991

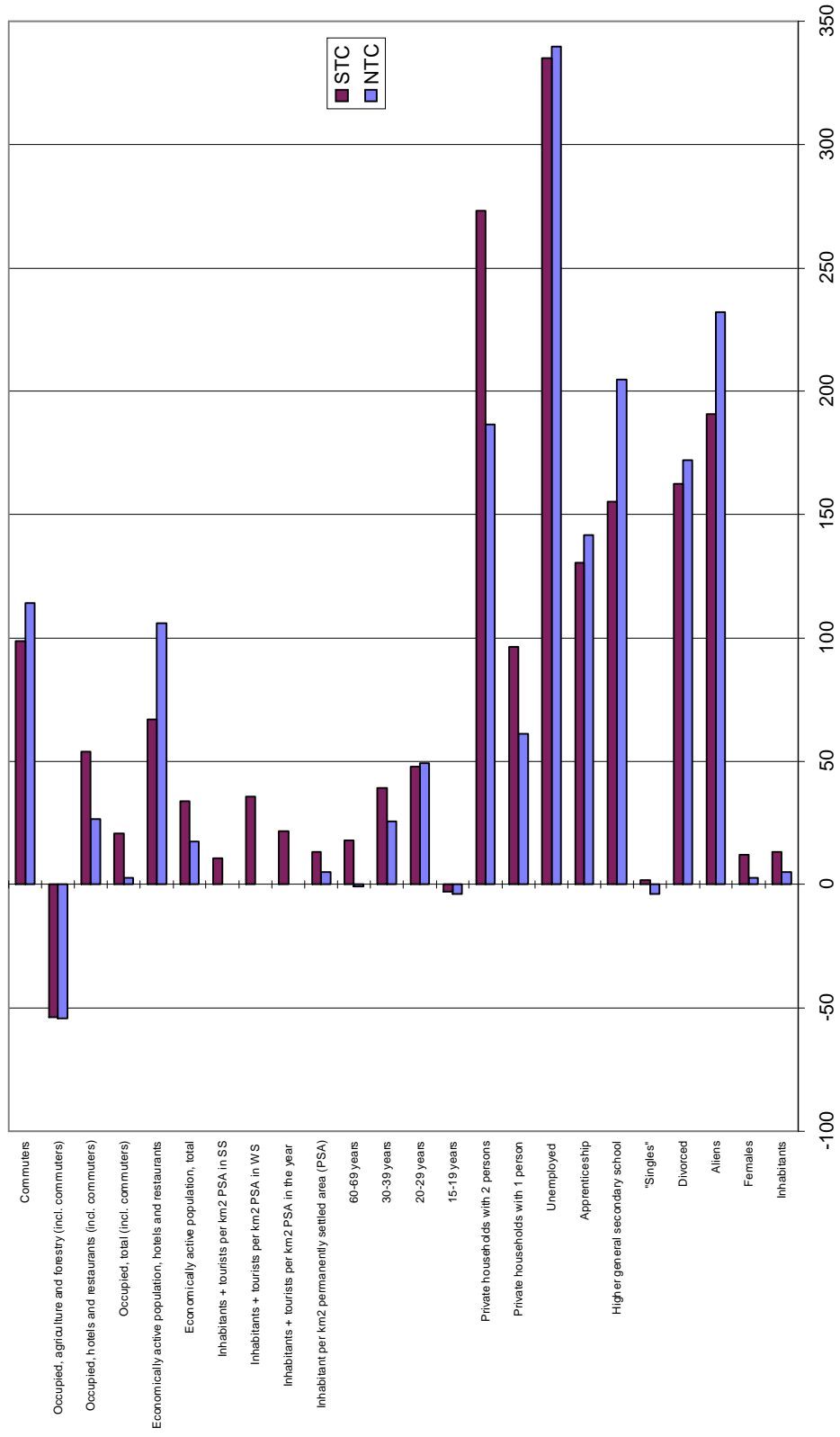


Table 6. Structural changes in STC, NTC and Austria between 1971 and 1991

	STC						NTC						Austria					
	1971		1981		1991		1971		1981		1991		1971		1981		1991	
	10 <sup>3</sup>	+/- %	10 <sup>3</sup>	+/- %	10 <sup>3</sup>	+/- %	10 <sup>3</sup>	+/- %	10 <sup>3</sup>	+/- %	10 <sup>3</sup>	+/- %	10 <sup>3</sup>	+/- %	10 <sup>3</sup>	+/- %	10 <sup>3</sup>	+/- %
Inhabitants	271	5.22	307	7.60	325	330	1.26	342	3.75	7,456	7,555	1.33	7,796	3.18				
Females	140	5.06	157	6.74	169	170	0.54	174	2.25	3,955	3,983	0.71	4,042	1.48				
Aliens	5	30.78	16	122.34	4	7	77.24	13	87.37	177	291	64.87	518	77.63				
Divorced	3	56.94	8	67.30	4	5	53.95	10	76.69	192	270	40.65	386	42.76				
"Singles"	143	0.26	145	1.53	146	143	-2.26	141	-1.63	3,197	3,176	-0.64	3,249	2.29				
Higher general secondary school	3	84.05	8	38.72	2	5	123.81	7	36.16	195	261	33.48	333	27.72				
Apprenticeship	36	55.02	82	48.77	38	64	66.63	93	45.03	1,308	1,640	25.43	2,069	26.17				
Unemployed	2	122.27	10	95.78	1	3	97.59	6	122.58	45	99	119.31	216	117.74				
Private households with 1 person	11	43.87	22	36.39	16	22	33.93	26	20.33	623	782	25.53	894	14.25				
Private households with 2 persons	12	168.85	46	38.78	22	50	130.26	62	24.45	672	1,442	114.61	1,674	16.12				
15-19 years	23	26.34	23	-23.13	25	32	25.03	24	-23.02	511	658	28.69	502	-23.66				
20-29 years	38	21.79	56	21.25	38	50	29.47	57	15.23	1,015	1,124	10.74	1,347	19.83				
30-39 years	33	10.49	46	25.91	40	39	-1.51	50	27.52	910	1,016	11.64	1,154	13.54				
60-69 years	24	-14.42	28	37.76	35	27	-23.85	35	30.40	849	658	-22.55	790	20.20				
Permanently settled areas (PSA) (ha)(10 <sup>6</sup> )	824	-	824	-	1586	1586	-	1586	-	1,405	1,386	-1.35	1,386	-				
Inhabitant per km <sup>2</sup> PSA (10 <sup>6</sup> )	183	5.22	207	7.60	88	89	1.26	92	3.75	231	-	-	239	-				
Inhabitants + foreigner per km <sup>2</sup> PSA in the year (10 <sup>6</sup> )	269	12.47	328	8.18	-	-	-	-	-	239	-	-	250	-				
Inhabitants + foreigner per km <sup>2</sup> PSA in WS (10 <sup>6</sup> )	234	22.15	318	11.11	-	-	-	-	-	235	-	-	248	-				
Inhabitants + foreigner per km <sup>2</sup> PSA in SS (10 <sup>6</sup> )	304	5.33	337	5.06	-	-	-	-	-	244	-	-	252	-				
Inhabitants + foreigner per km <sup>2</sup> PSA in August (10 <sup>6</sup> )	-	-	447	-	-	-	-	-	-	-	-	-	262	-				
Economically active population, total	108	17.73	144	13.62	138	153	10.81	162	5.98	3,098	3,412	10.12	3,684	8.00				
Economically active population, hotels and restaurants	20	32.56	33	25.95	2	4	58.39	5	30.10	132	174	32.54	227	29.96				
Occupied, total (incl. commuters)	96	15.27	115	4.74	104	100	-3.70	107	6.74	3,053	3,312	8.50	3,406	2.83				
Occupied, in hotels and restaurants (incl. commuters)	22	40.81	34	9.20	2	2	8.81	2	16.25	126	161	27.55	190	17.85				
Occupied, agriculture and forestry (incl. commuters)	19	-37.50	9	-26.33	46	29	-35.90	21	-28.62	425	289	-32.07	211	-27.01				
Commuters	22	68.33	43	18.14	25	37	45.97	55	46.72	1,232	1,636	32.84	1,942	18.68				

The largest structural differences are found concerning the permanently settled areas, the number of unemployed, the number of the younger, the number of employed and those occupied in the hotel and restaurant sector (as well as in A&F), and concerning commuting.

In STC the number of "singles" (the "single-households") still increases more strongly than in NTC or on the Austrian average as well. Concerning the employment between 1971 and 1991 in STC the growth rate was twice as much as on the Austrian average. Especially between 1971 and 1981 commuting increases stronger in STC.

A situation specific for tourism communities turns out with regard to the higher (seasonal) unemployment and the high population density, which increases (temporarily), due to the tourists at the peak seasons (available area per inhabitant) .

Surprisingly, the increase of the number of divorced was stronger in NTC than in STC; since 1981 the increase of the number of aliens was also greater in NTC and on average in Austria (about two thirds) than in STC.

However, the present study can only give a first idea of this subject; from the statistical point of view for a deeper analysis, additional information concerning developments (1951 and 1961), the structure of age, additional household and family variables (size and type of households, marital status, number of children, etc.), as well as additional analysis concerning employment structure etc. would be necessary. Such a relatively rough approach is also not conclusive on socio-cultural impacts of tourism.

Overall, the study shows that socio-economic and socio-demographic structures of highly touristic communities are still rurally characterised compared with typically non-tourism communities: Tourism communities show surprisingly little socio-economic and socio-demographic differences. Thus it may be concluded that tourism does not determine communities to such an extent as often assumed.

On the other hand structural developments in STC as well as in NTC - both rural - differ more significantly from the situation in Austria as a whole. Fast de-ruralisation is similar in both cases.

Therefore, it seems to be true, that even in a country like Austria tourism is still a limited "phenomenon", which predominantly influences the economic development and situation of a community. But it does not seem to have similar consequences on socio-economic and -demographic structures, while more long-lasting and pervasive tendencies may influence the developments most effectively.

## Annex

### 1. Methods

#### 1.0 Data basis

The selection of the communities and the respective variables for the years 1971, 1981 and 1991 (VZ) was done with the help of the ISIS data bank<sup>1</sup>, which provides structural data on all Austrian communities (2,353).

#### 1.1 Basic indicators for the separation of STC and NTC

With a view to analysing several indicators have to be calculated first, to serve as the basis for the separation of significant tourism vs. non-tourism communities:

- Share of the tourist overnight stays of total overnight stays:  
Residents - nights (Residents x 365 overnight stays); Share of the tourist overnight stays 1991 in total overnight stays (= residents + tourist overnight stays) per community;<sup>2</sup>
- Share of occupied population in the hotel and restaurant sector:  
Occupied population in the hotel and restaurant sector : total occupied population<sup>3</sup>
- Share of occupied population in the hotel sector:  
Share of occupied population in the hotel sector according to Census of Work Places (Local Units) 1991, NACE Rev.1 (=55.1 Hotels; 55.2 Camping sites and other provision of short-stay accommodation (incl. private room letting)); occupied population in the hotel sector according to Population Census 1991 (activity of the supplier: "Hotels and restaurants", comprising non-commuters, commuting within the community, commuting to other communities) adjusted by shares according to Census of Work Places;

#### 1.2 Thresholds

##### 1.2.1 Selected tourism communities (STC)

For the base year 1991 the selection of STC was done according to the following criteria (steps):

- ⇒ 1,486 tourism communities (TTC), registered in official tourism statistics
- ⇒ Share of overnight stays of tourists in total overnight stays (incl. inhabitants)  $\geq$  20 per cent
- ⇒ Share of employed population in hotels and restaurants in total occupied population (incl. commuters)  $\geq$  10 per cent

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1 Integrated Statistical Information System (ÖSTAT).

2 Tourism Statistics 1991 and Population Census 1991.

3 Population Census 1991.

⇒ Share of employed population in the hotel sector on total occupied population (incl. commuters)  $\geq$  10 per cent

The selection yields 180 communities.

For the years 1971 and 1981 exactly the same tourism communities (STC) were chosen as for the base year 1991.

The selected communities are rather small (up to 9,000 inhabitants), with up to 30 km<sup>2</sup> of permanently settled areas. The majority of the communities are located in the western part of Austria, on an average sea altitude of 900 meters.

### *1.2.2 Non-tourism communities (NTC)*

For the base year 1991 the selection of NTC was done according to the following criteria (steps):

- ⇒ 867 communities, not registered in official tourism statistics
- ⇒ Share of occupied population in hotels and restaurants in total occupied population (incl. commuters)  $\leq$  3 per cent
- ⇒ Districts of Vienna (~ communities) are not taken into consideration

The selection yields 234 non-tourism communities.

For the years 1971 and 1981 exactly the same non-tourism communities (NTC) were chosen as for the base year 1991.

Like the STC the selected NTC are also small (up to 9,000 inhabitants); the average of the permanently settled areas accounts for 57 km<sup>2</sup>. The majority of the communities are located in the eastern part of Austria, on an average sea altitude of 340 meters.

### *1.3 All communities registered in the official tourism statistics (TTC)*

For the base year 1991 the selection of TTC was done according to the following criteria (steps):

- ⇒ Communities, registered in official tourism statistics
- ⇒ Districts of Vienna (~ communities) are not taken into consideration

The selection shows 1,486 communities.

Again these communities are minor (up to 9,000 inhabitants); the average of the permanently settled areas accounts for 57 km<sup>2</sup>.

For the years 1971 and 1981 the method of selection was the same as for the base year 1991; but there are certain (minor) differences between 1971/81 and 1991 (1971: 1,530, 1981: 1,601), for technical reasons.

## 1.4 Total Austria

For analysing the total Austrian results in 1991 and 1981 in each case 2,353 communities are available, in 1971 2,301 communities (in each case incl. Vienna).

## 2. Definition of the variables used

Variable	Definition
Community	Smallest Austrian administrative unit
Sea altitude in meters (m)	Altitude above the sea in meters
Secondary residences	Additional residences besides the ordinary residence
Inhabitants/Residents	Population with ordinary residence in Austria or in the respective community
Females	Women living (including female children)
Aliens	Persons of non-Austrian citizenship
Divorced	Persons who are not married again (regardless whether the former spouse is still living or not)
"Singles" .....	Persons who have never been married
Higher general secondary school	Persons who completed school and have received a school-leaving certificate
Apprenticeship	Persons with completed apprenticeship
Unemployed.....	Persons over 15 years who are not economically active and who are searching for a working place or an apprenticeship, regardless, whether they receive unemployment benefit or not
Private household with 1 person	Private household in which 1 person is living
Private household with 2 persons	Household consisting of 2 persons who are living together in a flat and who are running the house-hold together.
15-19 years.	Persons aged between 15 and 19 years
20-24 years	Persons aged between 20 and 24 years
25-29 years...	Persons aged between 25 and 29 years
20-29 years...	Persons aged between 20 and 29 years
30-34 years.....	Persons aged between 30 and 34 years
35-39 years.....	Persons aged between 35 and 39 years
30-39 years.....	Persons aged between 30 and 39 years
40-44 years.....	Persons aged between 40 and 44 years
55-59 years.....	Persons aged between 55 and 59 years
60-64 years.....	Persons aged between 60 and 64 years
65-69 years.....	Persons aged between 65 and 69 years
60-69 years.....	Persons aged between 60 and 69 years
Beds (February).	Registered beds available during the winter season
Beds (August).....	Registered beds available during the summer season
Overnight stays	Nights spent yearly
Overnight stays of residents	Nights spent of residents

<b>Variable</b>	<b>Definition</b>
Overnight stays in (WS)....	Nights spent in the winter season (between November and April)
Overnight stays (SS)....	Nights spent in the summer season (between May and October)
Overnight stays "in gewerblichen Betrieben"	Nights spent in commercial accommodations
Overnight stays in August	Nights spent in August
Permanently settled area in ha (PSA).....	Permanently settled area (PSA) comprises areas used for agricultural, structural and/or traffic purposes
Inhabitant per km <sup>2</sup> PSA	Average number of residents per km <sup>2</sup> PSA
Inhabitants + tourists per km <sup>2</sup> PSA	Average number of residents + tourists (overnight stays of tourists/365) per km <sup>2</sup> PSA per day (according to one year)
Inhabitants + tourists per km <sup>2</sup> PSA in WS	Average number of residents + tourists (overnight stays of tourists/188) per km <sup>2</sup> PSA per day (according to WS)
Inhabitants + tourists per km <sup>2</sup> PSA in SS	Average number of residents + tourists (overnight stays of tourists/188) per km <sup>2</sup> PSA per day (according to SS)
Inhabitants + tourists per km <sup>2</sup> PSA in August	Average number of residents + tourists (overnight stays of tourists/31) per km <sup>2</sup> PSA per day (according to August)
Share of overnight stays of tourists according to total overnight stays (residents and tourists)..	Share of overnight stays of tourist according to total overnight stays (overnight stays of tourists and residents within the year)
Economically active population	Occupied and unemployed
Economically active population, hotels and restaurants	Economically active population in the hotel/ restaurant sector
Occupied population, total (including. commuters)	Comprises employees, self-employed, paid family workers and persons in waiting period
Occupied, hotels and restaurants (incl. commuters).	Occupied in the hotel/ restaurant sector
Occupied, hotels	Share of population occupied in the hotel sector according to Census of Work Places of Employment 1991 and NACE Rev.1; occupied population in the hotel and restaurant sector according to Population Census 1991
Occupied, private accommodations	Ratio of overnight stays in commercial accommodations and of those occupied in hotel and restaurant sector, applied to overnight stays in private accommodations (for the estimation of those occupied in private accommodations)
Occupied, hotels and restaurants and private accommodation	Sum of those employed in hotels and restaurants and private accommodations
Occupied, A&F	Occupied in the agriculture and forestry sector
Commuters	Occupied persons, whose working place is not their residence place

Table 1. **Spatial distribution of the selected communities**

Variable	Definition			
	STC		NTC	
	number	per cent	number	per cent
Tyrol	88	49	0	0
Salzburg	30	17	1	0
Carinthia	21	12	0	0
Vorarlberg	17	9	3	1
Styria	9	5	29	12
Upper Austria	8	4	92	39
Lower Austria	5	3	95	41
Burgenland	2	1	14	6
Vienna	-	-	-	-
<b>Total</b>	<b>180</b>	<b>100</b>	<b>234</b>	<b>100</b>

Table 3. **Some average figures in contrast**  
Ø (per community)

	Austria (A)	STC		NTC	
	10 <sup>0</sup>	10 <sup>0</sup>	A=100	10 <sup>0</sup>	A=100
Sea altitude	520	902	173	608	117
Secondary residences	229	51	192	102	45
Inhabitants	1,313	1,703	130	1,461	111
Aliens	220	88	40	57	26
"Singles"	1,381	807	58	601	44
Academic secondary schools	142	42	30	30	21
Permanently settled areas (PSA)	1,386	824	59	1,585	114
Inhabitant per km <sup>2</sup> PSA	239	207	87	92	38
"Fictitious" inhabitants per km <sup>2</sup> PSA 1991	250	328	131	92	37
Economically active population <sup>1</sup>	1,565	800	51	691	44
Economically active population in hotels and restaurants	96	182	190	22	24
Occupied population <sup>2</sup>	1,448	641	44	457	32
Occupied, in hotels and restaurants	81	191	236	9	11
Occupied, Agriculture and forestry	90	48	53	90	100
Commuters	825	241	29	233	28

1. Occupied population and unemployed
2. Employees, self-employed, paid family workers and persons in waiting period



## NORWEGIAN BORDER SURVEY 1995

**Arne Rideng and Jan Vidar Haukeland, Institute of Transport Economics**

The most usual method of obtaining knowledge about the scope and structure of foreign tourists' holiday patterns in a country is through holiday surveys, overnight stay statistics, and border statistics. A pilot project aimed at examining the possibility of establishing border statistics was initiated in Norway in the summer of 1994, and continued in 1995 and 1996. The present report discusses the main features of the project and compares the results with those of the more established overnight stay statistics. Lastly, foreign holiday tourists' consumption during their stay in Norway is looked at, based on a survey which was carried out as part of a border statistics initiative in the summer of 1995.

### **1. How does one gain knowledge about foreign tourists?**

Knowledge about the scope and structure of foreigners' holidays in a country can be based on a number of different sources of data. The most common methods used are holiday surveys, statistics on overnight stays, and border statistics.

#### *Holiday surveys*

National holiday surveys are the primary method used in many countries, and encompass holidays in the tourists' own country as well as holidays abroad. The EU has issued guidelines on how these types of surveys are to be carried out in member countries and affiliated countries (Council Directive 95/57/EC of 23 November 1995). This will make it possible to compare the results of holiday surveys in several countries, with a view to gaining an overview of foreign tourism in a given country. One example of this type of multi-country survey is the European Travel Monitor (ETM).

For a country such as Norway, lying on the outer edge of Europe and with a modest number of foreign tourists, the material to be gained from adapting national surveys from other European countries will be limited. Apart from the neighbouring countries, the material from most other countries will be so scant that it will not shed much light on the matter. Another drawback of this approach is that it does not encompass tourism from non-European countries, a market segment which is of considerable interest and in a strong growth phase. In the absence of better data, however, the Norwegian Tourist Board (NORTRA) has used ETM for a number of years as an information base for monitoring the foreign holiday-makers' market.

#### *Statistics on overnight stays*

A second method is to keep statistics on overnight stays. Statistics Norway has published hotel statistics since 1950, which have been gradually expanded and improved. They are considered today to be of good

quality and encompass hotels with over 20 beds, and campgrounds with an «indoor capacity» of at least eight cabins or rooms. The number of guest nights at hotels is given for each month, broken down according to nationality. Camping statistics are only given for the summer season as a whole.

Overnight stay statistics only cover part of the market, however. Tourists who hire rooms or cabins directly from the party hiring them out, who stay with friends or relatives, or who sleep in tents, their own motor homes or caravans outside campgrounds, etc., are not included in the statistics. These segments of the travel market have grown faster in recent years than the more regular types of accommodation.

### ***Border surveys***

Recording border traffic is a third method used to generate statistics on foreign tourists and was, for many years, a source of information in most countries. As borders between countries have opened up, however, this method has gradually become more and more cumbersome and resource-intensive to use in practice. For example, passport controls between the Nordic countries were abolished as early as 1958, thereby eliminating the traditional source of inward-bound statistics for Norway.

There have been considerable technical and methodological developments since then, however. Automatic traffic counts on the roads, data bases for ticket bookings for planes and ferries, data processing making it easier to carry out large-scale interview surveys, etc., are now available. Thus, in 1994, the Ministry of Industry and Energy initiated a survey to examine the possibility of again establishing statistics on foreigners' holiday travel patterns in Norway, based on border statistics. The project was carried out by the Institute of Transport Economics and has run continuously since that time. The purpose of the present report is to give an account of the experience gained from the project, and discuss to what extent these types of statistics can be used to supplement the overnight stay statistics.

## **2. Border statistics - arrangement and implementation**

Norway's geography and location make it possible to carry out border surveys using moderate resources. The country is a peninsula geographically joined with Sweden, Finland, and Russia. Most of the border lies along thinly populated areas, while the border areas in the north are mostly uninhabited. Road traffic is thus concentrated at a limited number of border crossings, three of which account for two-thirds of the traffic. There are three through-going train connections, all with Sweden. The coast of Southern Norway has ferry connections to Sweden, Denmark, the Netherlands, Great Britain, and the Faeroe Islands, some of which only run in the summer. Four airports offer connections abroad, while others have a bit of charter traffic.

The target of the survey was defined as «all departures from Norway by persons who are non-residents of Norway», with a number of specified exceptions. The definition took into account the classification of the World Tourism Organisation (WTO) of international travellers and the need for having a target population which would be manageable in practice. The statistics system comprised base statistics and structure statistics in which more detailed interview surveys were carried out.

### ***Base statistics***

The base statistics included information such as:

- Means of transport used to cross the border to leave the country
- Country of residence
- Main purpose of the trip
- Length of stay in Norway
- Type of overnight accommodation during the stay

The target population was divided up into 24 levels according to place and means of transport upon departure. This was necessary because the individual levels had different demand profiles for the various distinguishing characteristics. Our study concentrated on departures by road, ferry, train, and air, and volume figures and distribution according to country of residence for holiday tourists were gathered in different ways, depending on means of transport. Information on purpose, length of trip, and overnight accommodation was based principally on interviews.

The main purpose of the trip was categorised according to the following reply options, which are in accordance with WTO recommendations:

- Visiting family/friends
- Holiday/pleasure
- Shopping
- Course/conference
- Business trip
- Other purpose

Lastly, respondents were asked whether they had been on a day trip or whether they had stayed overnight during their trip to Norway. Respondents who had stayed overnight were asked to specify the number of overnight stays at a hotel, at a campground or outside a campground, in hired or borrowed cabins, and/or overnight stay with family or friends. Information like this is vital for measuring the scope of the holiday (number of guest nights), and comparing border statistics with overnight stay statistics.

### ***Structure statistics***

While the content of the base statistics is stable from year to year, that of the structure statistics tends to vary. The idea is to get hold of topics which are of interest but which do not necessarily require continuous monitoring. It is also possible to focus on a given time period, for example, the summer season. Examples of topics covered include: organisation of the trip, itinerary, activities during the trip, appraisal of certain aspects of the trip, and tourists' consumption patterns. It is also possible to include the most common background variables, such as age, gender, income, etc., in the structure statistics.

All of the information used in the structure statistics must be gathered through interview surveys. In the summer of 1995, tourists' consumption expenses were the main topic. A total of 2,068 interviews were conducted with foreign tourists at the time of departure. The material was then weighted, based on the results of the base statistics, so as to obtain a representative picture of consumption. The last part of this report discusses this part of the project further.

### ***Road traffic***

Information on road traffic was based on data collection at three levels:

- Gathering and processing of the traffic counts already conducted.
- Recording of traffic, based on number plate counts of vehicles.
- Interviews of a selection of foreign holiday tourists as they leave the country.

The Norwegian Public Roads Administration carries out continuous automatic vehicle counts at three border crossings in Southern Norway, and periodic counts at the other crossings. For Northern Norway, corresponding data has been obtained from the Swedish public roads administration and Finnish customs. Total cross-border traffic volume can thus be calculated with a fair degree of certainty.

Distribution according to country of residence and type of vehicle (personal car, motor home, etc.) is estimated based on a selection of traffic statistics taken at border crossings. Statistics are throughout the day on selected weekdays, at least once a month. For all of 1995, some 62,653 vehicles were registered in this manner.

Other information for the base statistics and structure statistics is gathered during roadside interviews conducted by the Norwegian Public Roads Administration when the tourists leave Norway. Some 3,859 interviews were conducted in 1995, with a response rate of 95%.

### ***Ferry traffic***

Six ferry companies are involved in year-round ferry voyages to and from Norway. The companies participate in the project and deliver traffic statistics for each line (route) each month, including persons and vehicles according to country of residence, with some companies also reporting on length of stay. Purpose of trip, type of overnight accommodation, and data for the structure statistics are collected through interviews conducted with passengers as they wait to board the ferry. Some 1,836 interviews were conducted in 1995, but the response rate was lower than for road traffic interviews.

### ***Train traffic***

Cross-border train traffic is light compared with road and ferry traffic. Norwegian State Railways have figures for total cross-border traffic, while other information was gathered through interviews on board the trains. A total of 664 completed forms were collected.

### ***Air traffic***

Air transport is used for a significant portion of international holiday and leisure travel, and for intercontinental travel air transport virtually controls the market. This is the most difficult part of the project, from a methodological standpoint. This is due to a number of factors, including the dearth of available statistics, and the methodological difficulties involved in arranging interview surveys at airports which are sufficiently representative with respect to aspects such as country of residence. Consequently, we have had to draw estimates based on a major air travel survey from 1992 (Rideng, 1993).

In our further work with the project, one of the most important things will be to improve the statistical basis for tourist traffic by air. This will be done firstly in co-operation with the Norwegian Civil Aviation Administration, which is currently carrying out travel habit surveys at airports. Binding co-operation with the individual airlines is, moreover, desirable. The goal must be to have ongoing statistics which cover the content of the base statistics. Several countries, including Great Britain, have lengthy experience with these types of surveys (BTA/ETB, 1994).

### **3. Principal results**

#### *Attempts are made to minimise uncertainty in the results*

Substantial portions of the border statistics are prepared based on estimates of a number of important variables, such as country of residence. The estimates are calculated using sample counts and interview surveys, and so necessarily carry some degree of uncertainty. A detailed look at the uncertainty is beyond the scope of the present report. It is generally somewhat greater than for usual household surveys, as practical adaptations must be made in drawing up the selection plan and methodology. The better one knows the traffic structure, the easier it is to set up a survey which minimises uncertainty while at the same time being feasible in practice.

The border statistics for 1995 were obtained in such a way that the uncertainty was greatest for air traffic and least for ferry traffic, the latter as gleaned from ongoing statistics gathered by the ferry companies.

#### *3 million foreign holiday tourists in Norway in 1995*

Approximately 3.2 million foreign holiday tourists visited Norway in 1995 (Table 1). Of these, 0.8 million came on a day trip, while 0.1 million were passengers on cruise ships who did not stay overnight ashore. The other 2.3 million holiday tourists had an average 8 overnight stays, representing 19 million guest nights. Table 2 shows the number of guest nights, according to country of residence. Germans accounted for one-third of the guest nights, while neighbouring countries Sweden and Denmark were also important countries for Norwegian tourism.

Table 1. **Foreign holiday traffic in 1995. Calculated number of departures from Norway, expressed in '000**

	Means of transport at departure				
	Total	Ferry/ cruise ship	Road	Air	Train
Number of holiday tourists	3 210	925 <sup>1)</sup>	1 890	335	62
- of which: day trip	835	145	690	0	2
- of which: cruise ship passengers	110	110			
Number of overnight guests	2 265	670	1 200	335	60
Number of guest nights	18 890	7 235	7 615	3 645	395
Number of personal cars	640	135	505		
Number of motor homes	45	9	34		
Number of cars with caravans	31	4	27		
Number of buses	18	4	14		

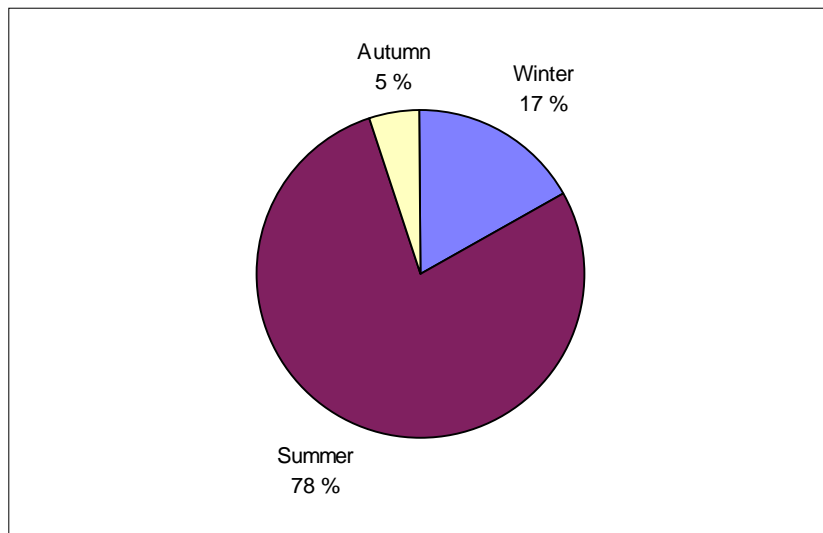
<sup>1</sup> Incl. 110 000 cruise ship passengers.

Table 2. **Number of foreign guest nights in Norway in 1995, according to country of residence, expressed in '000 and relative distribution**

	Guest nights 1995	Per cent 1995
Total	18 890	100
Sweden	3 210	17
Denmark	2 830	15
Finland	730	4
Great Britain	810	4
Netherlands	1 220	6
Belgium	150	1
France	705	4
Germany	6 375	34
Italy	260	1
Switzerland	315	2
Austria	230	1
Rest of Europe	505	3
United States	940	5
Other countries	610	3

Foreign tourists in Norway come mostly during the summer months, although there is also some winter tourism, see Figure 1. In the wintertime, tourists tend to stay at one location during their entire holiday, while in the summer very many travel around the country. A fairly high proportion of holiday tourists come in motor homes or cars with caravans.

Figure 1. **Number of foreign guest nights in Norway, according to season**



***19 million guest nights, according to type of accommodation***

Overnight stays in cabins are the most common form of accommodation when foreign tourists visit Norway, see Table 3. One-third of overnight stays are in hired, borrowed or owned cabins. Many overnight stays also take place at hotels and campgrounds. A fair number of tourists also have friends or relatives who put them up. Overnight stays in motor homes, caravans, or tents *outside* campgrounds are less common.

Table 3. **Calculated number of foreigners' guest nights in 1995, according to type of accommodation**

Type of accommodation	% share	Number of guest nights
Total	100	19.0 million
Hotel, boarding house, etc.	22	4.2 million
Cabin	33	6.3 million
Friends and relatives	17	3.2 million
Camping	23	4.3 million
Wilderness camping	3	0.6 million
Other	2	0.4 million

It is interesting to compare the border statistics in this respect with the overnight stay statistics from Statistics Norway, which shows 5 million foreign guest nights at hotels for 1995. This figure includes both business trips and personal trips, but it is not possible to break down the number of guest nights precisely according to purpose of trip. The 4.2 million figure in the guest night statistics would indicate that business travellers account for 20%, which appears reasonable. This would also appear to concord with hotel statistics and the border statistics.

Camping statistics from Statistics Norway shows 2.1 million guest nights at campgrounds during the summer season, while the border statistics show more than twice that figure for the entire year. Some of the difference can be explained by the fact that the smallest campgrounds are not included in the camping statistics. There may also be some under-reporting due to other reasons. There is nonetheless a significant gap between the statistics from the two sources, for which an explanation has not yet been found.

The overnight stay statistics from Statistics Norway also cover roughly 35% of all guest nights recorded in the border statistics. They show that there is clearly a need to follow trends in the rest of the market. The border statistics have thus proved to be a useful supplement to the overnight stay statistics.

#### **4. Holiday tourists' expenditure**

##### ***Border survey data***

During the summer of 1995, tourists' expenditure was focused on within the structure portion of the border statistics, and by means of a questionnaire answered by foreign tourists at border crossings when leaving Norway, a fairly representative picture of the expenses incurred by foreign tourists has been obtained.

The tourists' total expenditure for their entire visit to Norway was registered. The unit of consumption would be an individual, a household or travel companions with joint finances for their trip (in practice the units would primarily be individuals travelling alone or in groups, in addition to couples or family units travelling together or as part of a larger group). Based on supplementary information on the number of people travelling together with the respondents, the number of guest nights, etc., it has been possible to calculate the expenses per guest night.

When the tourists leave the country is probably the best time to register the total consumption associated with the trip in Norway. It is reasonable to assume that the respondents have a relatively good idea of the total expenses they have incurred in Norway at this point in time.

##### ***On-site survey in selected tourist areas***

Even though one can assume that the respondents are best qualified to give an estimate of their total expenditure in Norway when they cross the border on their way out of the country, there will nevertheless still be problems related to the measurement of consumption at the border crossings, since one must also assume that it is difficult for the respondents to give a *detailed* account of the distribution of their consumption among the various expense categories. Reliable estimates can only be obtained when the time frame for the reference period is short.

Therefore detailed information on "yesterday's consumption" was obtained - i.e. we asked questions about what expenses the consumption unit had had the *day before* the form was filled in. It is not, however,

very appropriate to ask this question at border crossings, since the consumption would then always refer to the next to the last day of the respondent's trip in Norway. It is reasonable to assume that the constitution of the consumption will vary from the beginning to the end of a trip, and that emphasis solely on the last whole travel day in Norway would create systematically skewed data.

In order to obtain more reliable information on the distribution of the expenditure the survey was based on registration at various tourist destinations in Norway. The questionnaire contained a number of consumption items classified according to the main categories of accommodation, meals/snacks served, transport, purchase of goods, activities and other expenses, with reference to the day before the day the questionnaire was filled in.

The main reason for making a supplementary survey based on on-site registration has thus been to obtain reliable figures for tourist expenditure with greater detail. In addition, this method allows us to illustrate the consumption pattern for various accommodation categories and possible geographic variations in consumption. In selecting locations for registration, emphasis was thus placed on obtaining a certain geographic variation, where urban and rural districts as well as different regions in Norway were represented.

Even though the locations were selected to reflect variation between the different regions and types of tourist destinations, it is nevertheless likely that the locations selected have a better developed tourist related infrastructure than is generally found in Norway. In other words, it cannot be said that these locations are representative for the entire range of locations visited by tourists while they are on holiday in Norway. The geographic variation in the consumption measured is nevertheless far greater than the sample of registration locations alone would indicate. Very many tourists on holiday in Norway are on tours of the country, and only 27 per cent of the foreign tourists stated that they had been "at the same location yesterday" as they were when they filled in the questionnaire. This means that the consumption figures in the survey are related to a far greater number of geographic areas than is indicated by the sample locations. A greater cross-section of the structure of the traffic in Norway is recorded by this on-site registration method due to the high level of mobility exhibited by tourists in Norway.

There is a significant geographic bias in this data in relation to the real distribution of tourist traffic in these areas. This bias applies to the sample of destinations as well as the number of forms distributed in the various locations selected. In addition, there may be a systematic bias in the manner the respondents were selected within the various survey locations. This is a problem in general in connection with on-site surveys in tourism research (Bardon & Harding, 1981). The problem is associated with the fact that the respondents have no known or equal probability of being chosen. In order to counteract a systematic bias in the sample of tourists within each area, an attempt was made to vary the times of day when the survey was conducted and the location of the registration points locally. Specific locations were also chosen, which were assumed in general to be neutral with regard to consumption, i.e. locations where most tourists visit and spend time regardless of their consumption profile (for example, streets in the centre of town, ferry queues, major attractions, etc.).

Here the traffic structure from the Border Survey is a correction factor which enables us to overcome some of the sampling problems. We therefore weighted the consumption figures according to the relative size of the nationalities and type of accommodation in order to obtain relatively representative values for the tourists' daily consumption.

A comparison of the results from the two surveys indicate a very similar level of total consumption per guest night with regard to the overall weighted average and the largest foreign markets.

## Main results

The following presentation of results is based on the on-site survey carried out at tourist destinations in Norway:

Table 4. **Foreign tourist spending by type of accommodation. NOK per guest night**

	Overall	Hotel etc.	Cabin	VFR	Regular camping	Irregular camping	Motor caravan at campsite	Motor caravan outside campsite	Other
Total expenses	520	919	367	417	349	328	463	338	512
Total prepaid expenses	177	471	91	97	41	22	70	50	207
- Transport	88	215	38	73	30	16	49	29	99
- Accommodation	64	184	41	14	7	2	8	10	94
- Other expenses	25	72	11	11	5	4	12	12	14
Total direct expenses for trip in Norway	344	448	276	320	308	307	393	288	305
- Transport	91	86	73	99	94	109	141	133	70
- Accommodation	69	127	67	15	81	33	42	2	49
- Meals/snacks served	60	107	34	78	38	43	30	33	54
- Goods	89	89	72	101	84	94	130	90	86
- Activities	19	20	19	20	16	15	28	13	14
- Other expenses	16	20	11	17	14	12	23	17	33
N = no. of observations	2445	791	267	121	542	113	239	160	212

As Table 4 shows, average total spending is approximately NOK 520 per night for all *foreign tourists* who spend their summer holiday in Norway. About one-third of these expenses are paid in advance, and the remaining two-thirds are expenses incurred while travelling in Norway. Transport expenses are the largest single item, and lodging expenses per night amount to approximately NOK 130. Transport costs for foreign tourists total NOK 90, and they spend a corresponding amount on goods. Spending on meals is about NOK 60, while NOK 20 is spent on different activities.

Foreign tourists who spend the night in hotels, also have the highest spending level per night (about NOK 920). Tourists using cabins are the largest lodging group of foreign tourists, and spend just over NOK 100 on transport and accommodation, while meal expenses are more modest for this group. Those who stay with friends and relatives use the most on transport and goods, and they spend as much as NOK 80 on meals, while direct lodging expenses are very low among this group of foreign tourists. Those who lodge at camp sites use the most on transport (just over NOK 120 in total), and their spending on lodging and goods is substantial, while only about NOK 40 is spent on meals. Campers lodging outside camp sites have, as one would expect, lower lodging expenses than those who use the camp sites, but in other respects the spending profiles for these two groups are relatively similar.

Of all the groups, motor caravan tourists using camp sites have the highest spending related to transport (around NOK 140) and the purchase of goods (around NOK 130) in Norway. Their spending on lodging and meals is modest, but even so they spend as much as approximately NOK 30 on activities. Motor caravan tourists lodging outside camp sites incur almost no expenses on lodging and meals, but use a lot on transport and even more on goods (about NOK 90). The consumption of foreign tourists with motor caravans on

holiday in Norway who lodge at camp sites is the second highest after the hotel tourists. It should also be noted that the great majority of the motor caravan tourists do in fact stay at camp sites.

## 5. Conclusion

Some important conclusions can be drawn from this project:

- It is practically and methodologically possible to establish border statistics in Norway which are a valuable supplement to other statistics on foreign tourists.
- Border statistics are easiest to implement in countries which have most of their foreign traffic concentrated at a limited number of border crossings.
- The system is completely dependent on close, binding co-operation with the national Public Roads Administration and transport companies involved in cross-border travel.
- There is a clear connection between data quality and the scope of resources allocated to the project.
- A large portion of the foreign tourist market is not covered by the overnight stay statistics.
- Consumption surveys on foreign tourists conducted at border crossings as they leave the country give a good picture of tourists' total consumption during their holiday stay.
- The composition of their consumption can be best plotted by using surveys of «yesterday's consumption» at selected locations in areas where experience has shown there to be many tourists.
- The border statistics give a picture of the total traffic for the entire country, and can thus serve as a basis for weighing results from regional studies.

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## SAMPLE SURVEYS ON ITALIAN INTERNATIONAL TOURISM

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### **Introduction**

In the third quarter of 1995, the *Ufficio Italiano dei Cambi (UIC)* conducted a pilot sample survey on Italian international tourism. A further survey is being conducted since January 1996 and it will continue throughout the whole year.

In this paper the reasons and the aims of the project are explained. The methodology of the pilot survey is described and the main results regarding balance of payments and sectoral statistics are analysed.

Tourism has always represented an important source of net currency inflows for Italy. This feature has become more important during the last three years, because of the increased price competitiveness of national tourist services due to the depreciation of the lira. In 1994, the credits in the tourist balance of payments were approximately twice the debits, thus causing a surplus of about 19,000 billion lire, about 75 per cent of the current account surplus and 1.1 per cent of the gross domestic product. In 1995 a further increase was registered, with a balance of approximately 25,000 billion lire. If we consider travel credits, Italy ranks in the third position in the world, following the United States and France.

In the international context, the evolution of the socio-economic background has caused a growth of the tourist phenomenon, both in industrialised countries and, particularly for inbound flows, in developing countries. The importance of tourist transactions in the balance of payments makes it necessary to acquire accurate, timely and reliable information. Moreover, the growing awareness of the importance of accurate information for tourist enterprises implies a growing demand for detailed statistics on this subject.

Both in Italy and in other countries, the *Travel* item of the balance of payments has been the object of methodological considerations for some years. In general, the large number of subjects who take part in the exchange, both on the demand (travellers that use tourist services) and on the supply side (tourist enterprises), makes it difficult to produce satisfactory information. Moreover, the expansion of the tourist market implies a diversification and an increase of the supplied services, causing a growing complexity of the phenomenon.

The full liberalisation of foreign exchange transactions and the consequent revision of the statistical data collection system imply, in many countries, further complications. In Italy, until 1990, international tourist transactions were subject to compulsory rules: they had to be carried out through banks, who had to report regularly to the UIC. After the removal of the restrictions, data had to be collected directly from the non-bank operators. Consequently, the Statistical Foreign Exchange Form (*Comunicazione Valutaria Statistica - CVS*), was introduced. This form is required for the communication of transactions over 20 million lire and implies some lack of information on tourist transactions, which are frequently under that threshold.

This *statistical evasion* results in an underestimate of gross flows related to tourism. In fact, the use of Italian banknotes both by Italian and foreign travellers and of means of payment (i.e. traveller's checks and credit cards) which makes it hard to identify the reason of the expenditure. The frequent settlements through clearings between enterprises that operate in this sector also make it difficult to determine tourism-related gross flows.

Many difficulties arise in the determination of the correct geographical allocation and of the breakdown of tourist expenditure by reason of journey (holidays, business, etc.). It is also extremely difficult to obtain detailed information on the means of payment used by international travellers. The lower reliability of data, if compared with the past, generates a deterioration of related statistics, such as national accounts, and problems of international comparability.

The data collection system based on bank reports cannot be satisfactorily modified, in the short period, in order to obtain better information on tourism transactions. Moreover, this system is likely to become less effective with the progress of the European Monetary Union, as the single currency will imply a loss of information on banknote transactions.

A special task force, composed by representatives of central banks and national statistical institutes, has recently been set up by EUROSTAT, with the aim of finding harmonised methodologies for the compiling of the *Travel* item by Member States of the European Union.

In this context, the UIC has started conducting sample surveys on tourism.

The pilot survey, carried out in the summer of 1995, had an introductory character and made it possible to verify techniques, collection tools and procedures to be used for regular surveys.

The main objectives of the surveys are the following:

- obtain a better quality of the statistics related to tourism in the balance of payments and a greater compliance with the requirements of the relevant international organisations. The main reference is the International Monetary Fund; definitions issued by other international organisations, such as the World Tourism Organisation, the EUROSTAT and the OECD are also considered;
- provide present and potential users with a series of additional information related to the features of the market of international tourist services. This supplementary information is not strictly necessary for balance of payments statistics but will form a rich and new set of data, extremely useful for micro uses.

## **Methodology**

The main difficulty in the planning of the sample survey is finding a methodology to estimate the reference universes. Complete official statistics on foreign and Italian travellers with a sufficient level of disaggregation are not available.

The National Statistical Institute (*Istituto Nazionale di Statistica - ISTAT*), with the help of frontier authorities, collects monthly data on inflows of foreign travellers in Italy<sup>1</sup> but no information is looked either

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1 ISTAT, *Statistiche del turismo*, Roma, various years.

for flows of foreign travellers leaving Italy or for Italian international travellers. Moreover, seaport and airport authorities count passengers arriving and leaving, but they generally do not distinguish between Italian and foreign travellers. Finally, the number of travellers on Italian railways is collected at frontiers but this data base is not systematic.

Consequently, surveys are conducted, following two stages:

1. in the first stage, representative samples of all travellers are submitted to short interviews to estimate the number of foreign travellers leaving Italy and the number of Italian travellers coming back to Italy;
2. in the second stage data on expenditure, behaviours and features of the journey are recorded, both for Italian and foreign travellers. Interviews are always performed at the end of the stay (in Italy or abroad).

A multiple stage sampling is adopted, and first stage sample units (frontiers) are stratified. Four types of frontier are considered: road, railway, international airports and seaports.

Not all frontiers are taken into account. The selection is performed considering annual flows of travellers, derived from ISTAT data on arrivals of foreign travellers. A threshold is determined in order to ensure a coverage of at least 80 per cent of the tourist flows. In particular, the following frontiers are considered (numbers are referred to the summer 1995 survey):

- 21 road frontiers - crossed by at least 200,000 foreign travellers per year - representing 80% of the total crossings recorded by ISTAT statistics in 1994.
- 8 international seaports, with flows over 70,000 travellers per year, covering 83% of flows.
- 8 railway crossings - having flows over 30,000 units per year - representing 98% of the arrivals of foreign travellers.
- 14 international airports, having flows over 50,000 units per year, covering 94% of the flows of foreign travellers.

For the estimate of the universes, a systematic sampling for short interviews is adopted. The mean proportion of countings to passages varies according to different collection points.

During the 1995 survey 46,669 interviews were carried out (13,163 in July, 19,958 in August and 13,548 in September). Data on 320,000 passages through 51 frontier crossings were collected by countings. The interviewed foreign visitors came from over 100 different countries. Interviews took place mainly at road frontiers (56 per cent), followed by airports (29 per cent), railway stations (10 per cent) and seaports (5 per cent), where ferries and cruise boats were considered. Italian travellers were 44 per cent of the respondents, the remaining part of the sample was made of foreign travellers. In the final survey of 1996, about 160,000 interviews will be conducted.

The available information has to be re-processed in order to satisfy the International Monetary Fund requirements on time allocation of transactions in the balance of payments. Tourism expenditure has to be classified according to the period in which the related good or service is actually supplied to the traveller.

Table 1 shows the standard errors of the estimates. Errors are expressed as a percentage of the global expenditure at destination, divided by nationality of travellers (Italians and foreigners) and by type of frontier.

Table 1. **Estimated global expenditure at destination, July-September 1995**  
(in millions of lire)

	Road	Railway	Airport	Seaport	Total
<b>Foreign travellers</b>	8,549,444	1,206,849	3,662,996	454,244	<b>13,873,533</b>
	(0.32%)	(0.92%)	(0.27%)	(5.50%)	<b>(0.15%)</b>
July					<b>(0.55%)</b>
August					<b>(0.30%)</b>
September					<b>(0.49%)</b>
<b>Italian travellers</b>	2,506,737	616,924	3,370,487	217,011	<b>6,711,159</b>
	(0.36%)	(2.54%)	(0.31%)	(2.29%)	<b>(0.16%)</b>
July					<b>(0.63%)</b>
August					<b>(0.29%)</b>
September					<b>(0.71%)</b>

Sampling errors are generally extremely small: about 0.16 per cent for Italian travellers and 0.15 per cent for foreign travellers.

The difficulties in valuing non-sampling errors are well known. Mainly they are errors in measuring phenomena (imprecision of the respondents), missing answers or coverage errors deriving from the partial selection of respondents. To reduce this kind of errors, each question in the form was tested in the pilot phase of the survey. Moreover, interviewers are accurately instructed to ensure that questions are asked without biases due to free interpretations of the text.

The procedure adopted for the survey of summer 1995 implies the use of estimates calculated exclusively from the sample; for the final survey of 1996 an effort is made to integrate collected data with information from other statistical sources.

Airlines, shipping companies, tour operators and frontier authorities - who collect data on countries of destination, often without publishing them - are asked to co-operate in the determination of flows of travellers to and from countries for which a small number of interviews is usually carried out.

For complete interviews, sampling rates used in the survey take into account the need to obtain a better coverage for foreign countries and Italian provinces with small flows of travellers (over sampling).

Finally, information from additional sources is used to improve the precision of estimates, or to reduce sample size or to simplify data collection.

This makes it possible to improve the sample design, by formulating estimators which take into account both sample data and additional information. Alternatively, additional data are used to analyse and verify results.

When long enough time series are acquired, the possibility of modifying the sample design to eliminate redundant information will be considered. Should this be possible, it will permit to reduce the size and the costs of the data collection.

### **Sample Surveys and Balance of Payments**

The main results of the sample surveys are related to travellers' expenditure and its impact on the balance of payments. The various breakdowns have been organised in order to identify Italian inbound (credits) and outbound (debits) monetary flows.

The information collected concerns:

- A. the amount paid in the country of residence before leaving;
- B. the cost of transport paid in the country of residence before leaving (it is a component of A);
- C. the expenditure at destination; for foreign travellers it is the total amount spent in Italy, whereas for Italian travellers it is the total amount spent abroad;
- D. the expenditure for board and lodging (it is a component of C).

In order to compile the balance of payments, A, B and C data are useful to define item *Travel*; moreover, B data are useful to integrate the item *Transport*; D data enrich sectoral statistics.

As regards *expenditure at destination*, in the quarter July-September 1995, foreigners spent 13,874 billion lire in Italy (credits), while Italians spent 6,711 billion lire abroad (debits). The result is a positive balance of 7,163 billion lire.

By eliminating *bank transfers*<sup>2</sup> from bank reports we obtain data comparable to those deriving from the survey. The comparison shows that survey data exceed bank reports by 12.6 per cent for credits, 39.4 per cent for debits and 4.5 per cent for the balance.

Sample estimates are calculated according to the nights spent abroad by travellers, while bank reports are allocated by date of settlement. Consequently, data for single months are not completely homogeneous; in the quarter, on the contrary, the different time allocation of data should have a negligible impact.

The above indicated figures for credits and debits do not represent the actual tourism expenditure of the period. According to international standards, total tourism expenditure is obtained by summing expenditure

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2 *Bank transfers* can be ascribed to amounts spent in the country of residence and subsequently transferred abroad through banks.

at destination to amounts pre-paid in the country of residence. Such amounts are transferred, completely or partially<sup>3</sup>, to the visited countries and thus they contribute to tourism expenditure.

*Pre-paid expenditure* (A) of foreign travellers was estimated to be 6,244 billions lire, of which about 74 per cent (4,634 billion lire) was used for *transport* (B); Italian travellers pre-paid 4,373 billions lire, of which about 67 per cent (2,940 billions lire) for *transport*.

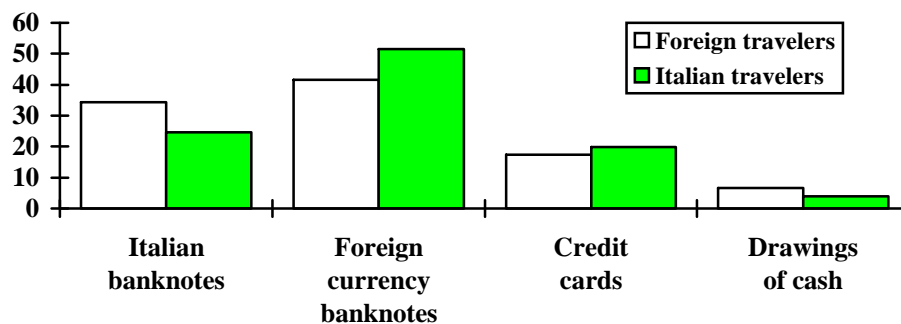
The difference (A - B) can be compared to *bank transfers*, reported by banks. The comparison shows that debits (expenditure of Italian travellers) derived from the survey (1,433 billions) are lower than those reported by banks (1,468 billions); for credits (expenditure of foreign travellers), the amount calculated through the survey is 1,610 billions, while *bank transfers* amount to 802 billions. The difference - 808 billions lire - could be ascribed to the fact that tourist operators prefer to keep these sums on their bank accounts abroad.

*Tourist balance of payments* credits and debits [item *Travel* (A-B+C)], resulting from the survey, amount to 15,484 and 8,144 billions lire respectively, with a surplus of 7,340 billions lire. The per cent differences between survey data and bank reports are: + **18 per cent** for credits, + **30 per cent** for debits and + **7 per cent** for the balance.

The survey data make it possible to analyse the means of payment used by the travellers.

According to the survey results (Figure 1), Italian and foreign travellers prefer to use banknotes changed at home or abroad rather than paying by credits cards or drawing cash abroad. An attitude of the travellers to buy foreign currency in their country of residence is evident.

Figure 1. **Percentage composition of the expenditure at destination by means of payment. July - September 1995.**



**Transfers of Italian banknotes:** they represent a phenomenon far larger than expected. The survey shows that the amount of Italian banknotes flows crossing national frontiers is larger than the amount reported by banks. As a consequence, there is an accumulation of assets abroad larger than that registered.

3 The non-transferred quota is related to amounts kept by tour operators as profit in the sale of tourist packages and recovery of expenses. An additional survey, directed to tour operators, has been started, in order to acquire further information on this subject.

**Credit cards:** as regards credit cards, bank reports represent the balances transferred between companies issuing credit cards, whereas the survey estimates represent the amounts spent by travellers using credit cards<sup>4</sup>.

**Foreign currency negotiations:** bank reports represent purchases/sales of foreign currency banknotes and other means of payment performed by Italian banks versus lire, both with residents and non-residents. As regards survey data, foreign currency negotiations and *travellers' checks* amounts were grouped in a single item because bank reports do not distinguish between negotiations in banknotes and other means of payment. The difference between banks' data and survey data is quite small for debits (about 5.5 per cent), whereas it is larger for credits (about 12.9 per cent). For this item, bank reports show a higher amount than the survey.

The integration of the bank reports with survey data will allow to reprocess several components of the balance of payments. The reprocessing will regard *Travel, Transport* and, considering unrecorded transfers of Italian banknotes, *Capital Movements*. The revision will be carried out when sufficiently long time series are available.

The survey gives indications on the geographical breakdown of the expenditure.

According to the international standards, the expenditure should be allocated with reference to the country of origin (credits) or destination (debits) of the travellers. The survey satisfies this requirement. Tables 2 and 3 show credits and debits by country of origin or destination of travellers, both for survey and bank reports data.

The geographical breakdown regards only continents and Italian areas since the small number of interviews for some Italian provinces and some foreign countries is not consistent with reliable figures. As it can be noted, there are relevant differences between survey and bank reports data.

**Table 2. Percentage composition of expenditure at destination by continent of origin/destination of foreign/Italian travellers. July - September 1995**

Continents	Survey Data	Bank Reports	Survey Data	Bank Reports
	Credits	Credits	Debits	Debits
Europe	82.3	80.3	73.2	69.3
America	6.5	15.9	15.6	27.2
Africa	2.4	0.3	3.8	1.6
Asia	8.0	2.4	6.6	1.4
Oceania	0.8	0.3	0.8	0.4
Not allocated		0.8		0.1
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>4</sup> In order to verify the survey data, the UIC has got in touch with the Italian branches of credit card issuers to get monthly detailed information.

Table 3. **Percentage composition of expenditure at destination by Italian areas of destination/origin of foreign/Italian travellers. July - September 1995**

Areas <sup>1</sup>	Survey Data	Bank Reports	Survey Data	Bank Reports
	Credits	Credits	Debits	Debits
Northwest	17.4	37.7	36.4	52.7
Northeast	47.2	28.8	22.3	18.0
Centre	26.3	20.2	29.0	17.2
South	5.8	5.8	9.3	3.9
Isles	3.1	3.1	3.0	2.2
Not allocated	0.2	4.4		6.0
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

- 1 NORTHWEST: Piemonte, Valle d'Aosta, Lombardia, Liguria.  
 NORTHEAST: Trentino Alto Adige, Veneto, Emilia-Romagna, Friuli Venezia Giulia.  
 CENTRE: Toscana, Marche, Umbria, Lazio, Abruzzi.  
 SOUTH: Molise, Campania, Puglia, Basilicata, Calabria.  
 ISLES: Sicilia, Sardegna.

## Remarks

The data base, made available via the surveys, is much richer than what appears from the presentation of this paper.

In particular it is important to streamline the data fallout of these surveys in term of micro and sectoral information. For example, market analysis and research could be implemented on the basis of data related to traveller's characteristics, type of accommodation used, expenditure patterns, etc..

Expenditure potentialities by region and category of travellers could be identified and exploited by the tourism industry, with a favourable outcome in terms of balance of payments and, eventually, in terms of income growth.

From the standpoint of an efficient and cost-effective production process of tourism statistics, the virtuous circle just described (macro and micro uses of the survey data) is probably the most important result. In fact, the cost of producing a "public good" such as statistical data is more than offset by the benefit of its numerous private and public uses.

## **STREP: A FORECASTING MODEL OF INTERNATIONAL TOURIST FLOWS BY REGION**

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### **1. Introduction**

Understanding international tourist movement trends towards one region rather than another --and knowledge of local tourism system performance-- is a basic priority faced with the recent evolution of competitive conditions, whose dependence on property value assured by the endowment of primary resources is decreasing in so many cases. Great care is nowadays given to the price/quality relationship; at the same time, competition between similar, and substitute tourist products, is rising very rapidly. Furthermore, international and intra-regional tourism mobility is reaching unknown levels and is expected to grow even more in the near future. All these elements bring into the picture economic conditions and behaviour as the determinants of the decision process of tourists choosing one or another holiday destination. The ability to compete and gain higher market shares in this context --where the globalisation and the internationalisation of tourism demand are the strongest challenges to face-- is a preliminary condition that local tourism systems must develop to assure their vitality.

These are crucial problems for the future of the sector that have to be faced with decision. Among the basic needs to reach these conditions, there is the implementation of methods and tools of analysis which could monitor the evolution of the markets. Forecasting models of international tourist flows towards tourist regions offering similar products are one of them. This tool has to be devised to give information to public and private operators in the field of tourism, on the future dynamics of international tourist flows at a regional level, taking into account both the perspectives of the economic factors feeding world tourism demand and the competing conditions of the different destinations. Then, it has to join high levels of operativeness to suitable methodological approaches and to accurate estimation techniques.

Furthermore, since this forecasting tool has to be used to direct management measures in the different fields of activity, expertise and responsibility, it should give two basic pieces of information: on the potential development of the main markets of origin of tourism demand and on the capacity of attraction of tourist areas representative of the geographic distribution of primary resources, and of the tourist flow concentration.

To this end, the methodological approach must be developed in order to:

- analyse tourism demand as part of the consumer-tourist's expenditure decisions;

- explain the mechanism of competitiveness between regions/areas offering similar, and substitute, products. That means to analyse simultaneously a panel of competing regions, instead of each region separately;
- join the needs of regional breakdown, of theoretical structure homogeneity and of statistical efficiency.

Panel data estimation techniques and in particular the formulation of "sliding tourism regional panel" models, represent one of the most suitable methodological choices<sup>1</sup>.

The advantages of such a method are applicative besides theoretical:

- a. it permits greater accuracy of the estimates. In fact, when the coefficients of the same variables can be considered statistically equal for two or more of the regions included in the panel, those coefficients can be estimated with a greater amount of data;
- b. it enables differences in the structure across regions to be tested. Testing for parametric differences gives us the possibility to identify in which region and which variables have a different impact on the phenomenon to be analysed.
- c. it gives the possibility of testing the existence of substitution relationships among the tourist products offered by the regions of the panel, and then to measure their strength through the cross-price elasticities;
- d. it gives results able to capture the comparative dynamics in international tourism demand distribution among competitive regions and then to study the trend of the corresponding market shares;
- e. it produces a flexible tool whose general structure can easily be adapted to the analysis of other groups of homogeneous tourist areas.

This methodology has been developed by the joint Ciset-GRETA research group through the implementation of the **STREP** (Sliding Tourism **RE**gional **P**anel) model of forecasting international tourist flows towards each Italian region. This model fulfils the analysis carried out for Italy with the **TRIP** (Tou**R**ism **I**nternational **P**anel) model, where the determinants of tourist flows from the most important countries of origin to Italy are identified (Carraro-Manente, 1994).

The Veneto region has been the first case study for which two models **W-STREP** Veneto and **M-STREP** Veneto have been carried out. The need to perform two different models comes from the information they can give: the **W-STREP** (World to Region) model evaluates the total international flows to the region; the **M-STREP** (Multi-origin to Region) model estimates international tourist flows to the Veneto from the same 21 countries of origin analysed by the **TRIP** model. The Veneto is studied as part of a tourist area including other three competing regions, Friuli Venezia Giulia, Trentino Alto Adige and Emilia Romagna.

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1 The word "Sliding" means that the group of competing regions changes according to the specific region to be studied. The word "Panel" means that the equations for the chosen group of regions are estimated simultaneously, thus exploiting both the cross-section dimension and the time dimension of the data base.

The paper contains 6 sections. Sections 2, 3 and 4 describe the theoretical approach and the specification of the STREP model, and discuss the variables designed to capture tourist flows at a regional level. Section 5 presents the estimates obtained for the Veneto Region. The final section emphasises the flexibility of the theoretical and methodological approach used: beyond its application to the case of the Veneto Region, the forecasting tool here implemented can easily be adapted to the peculiarities of other tourist regions.

## 2. The Theoretical Approach

Basic assumptions of tourism demand analysis can be described as follows:

- the tourist is a consumer who chooses what part of his income and leisure time to devote to a holiday instead of other goods or other tourist services, following a general process of optimal revenue and time allocation through which he distributes his purchasing power amongst alternative uses. In order to achieve a clearer description of the consumer's consumption choice, his decision process can be split into three stages<sup>2</sup>:
  - a) in the first stage the consumer allocates his inter-temporal income for either consumption or savings;
  - b) in the second stage he chooses between the consumption of durables, non-durables, services and other goods, and the "consumption" of tourism, including tourism abroad and tourism at home;
  - c) finally, in the third stage, he chooses his holiday resort, from the possible tourist destinations abroad. In this step:
- international tourist destinations, including Italy, compete against each other to "capture" the largest possible share in each international tourist market of origin. This competition, which translates itself first of all in different holiday price conditions, needs to model simultaneously several origins and destinations, in order to quantify the relative attractiveness of different destinations and the impact of cross price and supply effects on tourism demand coming from each origin market;
- if such a mechanism of competition operates at a national level it also strongly functions at a local level, and in particular in regions/areas which offer substitute tourist products.

So, starting from these statements, the theoretical structure of the **STREP** model is based on two fundamental ideas:

- first, that the choice of a specific region as a holiday destination is part of the international consumer-tourist's decision process;
- second, that each "regional tourist product" can be substituted with similar tourist products offered by regions with similar tourist resources (seaside, mountains, art cities, etc.).

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2 This division implies appropriate assumptions --that are a standard practice in applied consumption analysis-- on the separability of the utility functions describing the consumer's preferences. These assumptions, here adopted, isolate the set of relative prices that determine the consumer-tourist's decision at each different stage.

The consequence of the first statement is the need to analyse the choice of an international tourist holidaying in a region inside a country, starting from his decisions to spend for tourism abroad and to holiday in a specific country (Italy in our case). A detailed description of this approach is given in Carraro-Manente (1994), where the **TRIP** (Tourism International Panel) econometric model is performed by deriving a reduced-form equation of the first two stages a) and b) described above, and a reduced form equation of the last stage c). More in detail, in the first equation, the number and the dynamics of tourists leaving each of the 21 main countries of origin of tourist demand has been explained by variables such as per capita income, the relative price of tourist services with respect to the price of the other consumption goods, the relative costs of tourism abroad and tourism at home, demographic variables representing both the size and the composition of the population, variables representing consumers' preferences, climatic conditions, and other non-economic variables. In the second equation, the number of tourists coming to Italy from the same 21 countries is estimated as a function of the number of tourists who decide to holiday abroad, and of variables such as the relative price of tourist services in Italy with respect to their price in competitor countries, the cost of reaching Italy from each origin and the availability of different modes of transport, the Italian tourism supply (cultural heritage, natural resources, available facilities), and so on (see Carraro and Manente, 1994). So, the international tourist's decision to holiday abroad and in Italy has been represented by 42 equations, two per each origin market of the tourist demand.

Once the dynamics of international movement to Italy (**ARRITA**) has been described by suitable explanatory variables and has been forecast, giving the future economic scenario, the next question is: "how can we capture the consumer-tourist's decision process through which he chooses one region as the holiday destination of his stay in Italy, instead of another? ".

The structure of the **STREP** model answers this problem. The basic hypothesis is that the substitution between two Italian regional tourist products  $i$  and  $j$  depends mainly on two factors. First, relative prices of tourist services in the region  $i$  ( $PT_i/PTITA$ : direct effect of substitution) and relative prices of tourist services in the other competing regions  $j$  ( $PT_{j\#}/PTITA$ : indirect effect of substitution). Second, the relative supply of tourist services and facilities offered by both the productive sectors ( $PL_i/PLITA$ ,  $PL_{j\#}/PLITA$ ) and the primary resources (cultural heritage, natural resources, etc.) of the region  $i$  and the other regions  $j$  of the panel. Undoubtedly, offering a varied regional tourist product combining cultural attractions with seaside, lake and mountain resorts is a competitive advantage that some areas have over others.

Nevertheless, environmental decay of such primary resources produces short-to-long run impacts on international tourism demand: events such as the mucillagine in the Adriatic in 1989, or the growing pollution of lakes and rivers, or the congestion affecting so many art cities, can modify international tourist's decision process. Consequently these phenomena have to be modelled by the econometric specification of the **STREP** model, together with the economic variables explaining this step of the tourist's choice.

Let us formalise here the general **STREP** equation for the region  $i$  inside the panel of the competing ones:

$$ARR_i = f[ARRITA, (PT_i/PTITA), (PT_{j\#}/PTITA), (PL_i/PLITA), (PL_{j\#}/PLITA), TREND, DUMMIES]$$

where the variables above described will be explained more in detail in Session 4 when the specification for the Veneto region will be discussed.

Finally, this theoretical choice requires the use of the estimation method based on panel data, as the competitive regions have to be considered jointly and their equations have to be estimated simultaneously.

Thanks to this method, the cross-section dimension and the time dimension of the available historical data for the regions of the panel can be exploited<sup>3</sup>.

### 3. The structure of the STREP-Veneto model

As stated in the previous Section, capturing the dynamics of international tourists towards the Italian regions implies the analysis of the economic and structural characteristics of each region compared to each other and in particular to those which offer a substitute tourist product. Hence a choice was made to model the Veneto region jointly with three other regions --Friuli Venezia Giulia, Trentino Alto Adige and Emilia Romagna--: the fact of being territorially close to each other and the typology of the tourist product they offer can constitute an alternative choice for international tourism.

Given the regional data from 1980 to 1991, for the Veneto region two models have been set up:

- the first, **W-STREP** (World to Veneto), to monitor the total number of arrivals of foreign tourists in the Veneto, composed of 4 equations, one equation for each region, based on a sample from 1980 to 1991;
- the second, **M-STREP** (Multi-origin to Veneto), to monitor the segmentation of the market through an analysis of the flows from 21 main countries of origin, composed of 21 x 4 equations and based on samples covering the same period of time as above.

The proportion of the total number of foreign tourists in the Veneto to the total number of foreign tourists in Italy (**ARRVEN/ARRITA**) was chosen as dependent variable in the model **W-STREP**, with the aim of obtaining more efficient estimates, also taking into consideration the limited amount of data available. Formally, given the selected logarithmic functional structure, the implicit hypothesis is that the elasticity of the arrivals in the Veneto compared to the total of the arrivals of foreign tourists in Italy should be equal to one.

This hypothesis was instead dismissed by the model **M-STREP** which estimates the international arrivals in the Veneto from 21 countries in absolute values (**ARRVEN**). The construction of such a model needs, furthermore, a methodological system more complex that is expressed in a set of equations with varying parameters. In fact, to be able to estimate a model in which tourist flows are determined simultaneously from 21 countries to the four regions (the Veneto and its three main competitors), it is necessary to differentiate the behaviour of the tourist consumer from one country to another and towards one region and another. In other words, the panel must contain sufficient inter-regional and inter-national variability.

A model with constant parameters in which, for example, the quota of arrivals in region *j* of foreign tourists from country *i* depends on the relative prices of tourist services in the region, will not be representative because the Veneto attracts more tourists from country *h* than from country *k*. The relative price is in fact the same for all tourists whether they come from *h* or whether they come from *k*. To solve the economic and econometric problem at the same time, it is necessary to hypothesise that, for example, the reaction of the tourist coming from country *h* to a variation of the relative price is different to that of the tourist from country *k*. In more concrete terms, in the model the crucial hypothesis is that the reaction to

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3 See Hsiao (1986) and Carraro-Peracchi-Weber (1993) for a detailed presentation of the adopted methodology.

price variation could be greater for those countries which have a lower income per capita, while countries with a higher income per capita would probably remain untouched by variations in prices.

In the same way it has been hypothesised that a variation in the quality and quantity of the kind of tourist services offered (basically the number of beds available in hotels and other accommodations) could be considered in a different way by tourists whose average length of stay is fairly high compared to those tourists staying for only a limited period in the region.

To express in formal terms these hypotheses concerning the behaviour of tourists coming from diverse origins terms, the model for the Veneto has had to be written in the following way:

$$\log(\text{ARRVEN})_h = \beta_{0h} + \beta_{1h} \log(\text{ARRITA}) + \beta_{2ht} \log(\text{PTVEN/PTITA-1}) + \beta_{3ht} \log(\text{PTFVG} \\ - \text{EMR/PTITA-1}) + \beta_{4ht} \log(\text{PLAV/PLAI-1}) + \beta_{5ht} \log(\text{PLXV/PLXI-1}) + \beta_{6T} \text{TREND} + \beta_{7M} \text{MUCIL} \\ + \beta_{8U} \text{UNSOC} + \beta_{9R} \text{RECES}$$

where:

$$\beta_{2ht} = \sigma_{1h} / \log(\text{PILPC-1})_{ht} \\ \beta_{3ht} = \sigma_{2h} / \log(\text{PILPC-1})_{ht} \\ \beta_{4ht} = \sigma_{3h} / \log(\text{PERMAL-1})_{ht} \\ \beta_{5ht} = \sigma_{4h} / \log(\text{PERMEX-1})_{ht}.$$

with:

PILPC-1 = gross domestic product per-capita for each country of origin, one year lagged

PERMAL-1 = average length of stay in the hotels of the Veneto for the countries of origin of tourist flows, one year lagged

PERMEX -1 = average length of stay in other types of accommodation in the Veneto for the countries of origin of tourist flows, one year lagged.

and furthermore:

t = 1980, 1981, .... ,1991

h = 1,2,...,21, indicates the countries of origin.

Section 4 gives a detailed description of the explanatory variables used in the **W-STREP** and **M-STREP** Veneto models<sup>4</sup>.

#### 4. The specification of the STREP-Veneto model

Let us describe here the variables selected to explain the number of international tourists choosing the Veneto Region:

**International arrivals in Italy**; as already stated, this explanatory variable is used only in the **M-STREP** model. Following the theoretical approach described in section 2, arrivals of international tourists in the Veneto depend primarily on the total arrivals in Italy. (ARRITA). They represent, in fact, the population

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4 Differences on the economic and tourist structure of the regions and/or on the behaviour of the tourists coming from the 21 origins have been tested including a dummy for each explanatory variable per region and per country of origin of tourist flows.

that tourist regions are competing to attract. The expected relationship between this variable and the number of tourists choosing the region is obviously positive.

*The ratio of the tourist price index in the Veneto to the tourist price index in Italy* (PTVEN/PTITA); this accounts for how the decision to choose the Veneto is influenced by the price competitiveness of other regions. An increase in the Veneto tourist prices compared with the prices in other regions would encourage tourists to decide to holiday in the latter. So, the expected value for the coefficient related to this variable is negative (direct effect of substitution). In the case of the **M-STREP** model, a parameter indirectly linked to the per capita income expressed in dollars in the country of origin (PILPC) is associated to this variable, capturing the different reaction to the same price dynamics of tourists coming from each of the 21 countries considered. As already said, the elasticity of arrivals from the country  $k$  to the relative tourist price increases when the per capita income in the country  $k$  reduces. Once accepted that the nature of tourism is that of a luxury good, the hypothesis is that the less richer countries are the more sensitive to price variations.

*The ratio of the tourist price index in the competing regions to the tourist price index in Italy* (PTFVG-EMR/PTITA); the relative tourist prices in the competing regions can affect international tourist flows to the Veneto. If the “tourist products” offered by the regions of the panel can be hypothesised to be substitute products, then a price increase in these areas should produce a positive effect on the flows to the Veneto (indirect effect of substitution). So, the expected value for the coefficient related to this variable is positive and it measures the level of substitution between the tourist products of the regions included in the panel. The lower its value, the more diverse are the regional tourist products. If it were equal to zero the tourist product of the Veneto would enjoy a quasi-monopolistic position. The best specification of the model has shown the weighted index of tourist relative prices in Friuli Venezia Giulia and Emilia Romagna (PTFVG-EMR/PTITA) as the more suitable indicator capturing the cross effect of substitution. Relative prices in other regions were tested not to be statistically significant.

As for the previous one in the **M-STREP** model, this variable has also been related to a variable parameter depending on the per capita income dynamics in each country of origin. So, a price increase in competing regions should produce a positive effect stimulating more tourists from less richer countries to holiday in the Veneto.

*The ratio of the accommodation and recreational services supply of the Veneto to the supply of Italy* (PLVEN/PLITA); this variable has a two-fold role. First it verifies if the supply side of the market is affected by any restriction; second it evaluates if quantitative and qualitative innovation on the accommodation and recreational services supply can produce growing flows of international tourists, also thanks to a stronger promotional activity. The expected value for the coefficient related to this variable is positive. Different variables have been used to capture these phenomena: number of hotels and other means of accommodation, number of restaurants, of swimming-pools, etc. The econometric specification search showed the ratio of the number of beds in the region to the total number of beds in Italy (PLVEN/PLITA) as the more significant variable. The number of beds has been weighted on the grounds of their distribution by typology with the aim of taking into account qualitative information besides the quantitative ones.

This factor has been separated into hotel and extra-hotel components in the **M-STREP** model. Variable parameters have also been estimated also in this case, the length of stay in the hotel and in extra-hotel accommodation being the element changing by country of origin of tourist flows and then influencing the value of the elasticity estimated for each of the 21 areas.

The coefficient is expected to be positive: the shorter the length of stay, the higher its value. Longer length of stay, in fact, is normally related to higher fidelity for the destination and to cheaper holiday and overnight solutions. Furthermore, supply changes can persuade marginal tourists who frequently modify their choices and prefer short stays.

***The ratio of the accommodation and recreational services supply of the competing regions to the supply of Italy***; this variable should measure how many tourists decide to overnight in the Veneto because of the worsening of supply services in other regions. Then, the expected value for the coefficient related to this variable is negative. Nevertheless, the econometric specification search found no variable being statistically significant.

***Characteristics of the regional “tourist product”***; each region characterises itself for a more or less composite tourist product which is in any case a unique and unrepeatable endowment. The peculiarity of the tourist product of the Veneto is its strong variety, able to attract a quantity of tourists larger than the other regions do. These aspects are captured by the fixed effect in the panel estimation, which value is expected to be higher for the Veneto than for the other regions.

***The distance from the most important countries of origin of the international tourist flows***; since the majority of international tourists in Italy and in the Veneto comes from Europe and in particular from the German-speaking countries, the hypothesis that the distance from the origin country could play a very important role as an explanatory factor of the attractiveness of one region compared to another, has to be evaluated. The Veneto enjoys a privileged position as to the German and Austrian tourist demand and this factor has to be included in the fixed effect of the model.

***Phenomena of congestion and environmental decay***; lake, river and coastal pollution is a growing phenomenon in the majority of Italian regions. The strongest effect was produced in 1989 by the mucillagine in the Adriatic sea which discouraged many tourists from holidaying in the Veneto. For this reason a dummy variable has been introduced in 1989 for the Veneto (MUCIL). Beyond exceptional events, environmental decay is a trend not only due to pollution, but also to the increasing congestion of the most important tourist resorts. The role of these phenomena is described by a deterministic trend (TREND) which coefficient, if negative, would indicate a decrease in the tourist movement to the Veneto explained by a worsening in the quality of the regional tourist product.

***Life-cycle variables***; these have long-run dynamics too, linked to the fact that some forms of tourism in the Veneto are mature products whose life-cycle approaches the steady-state. Its effect cannot be distinguished by that of the environmental phenomena, but is similar since it reduces the number of tourists choosing the Veneto as their holiday destination. For this reason and to avoid multicollinearity, this variable has also been captured by a deterministic trend (TREND).

***Exceptional events***; in order to account for some phenomena of an exceptional nature that have influenced tourist flows towards the Veneto several dummy variables have been used, in particular in the **M-STREP** model. Those with a statistically significant effect on the tourist arrivals in the Veneto are the following. The first one is related to the tourist arrivals from Ireland which registered a strong increase in 1990 thanks to the Soccer Cup and the celebrations for the Holy Year. Since these events did not affect the Veneto, but the arrivals in the region depend on the arrivals in Italy, the estimated flows in the Veneto coming from Ireland in that year were overestimated. So, a dummy (UNSOC) was necessary to correct the results of the model: the expected relationship is negative.

A dummy reflecting the recession effects produced in the UK at the beginning of the '80 by Government measures has been used. It should capture the negative impact of such resolutions on the propensity to travel for the UK and Ireland in 1981 (RECES).

Finally, in adopting a specific functional form, a log-linear functional form has been assumed. In this way, the coefficients are easily explained in terms of elasticity. The functional specification has been tested by means of suitable statistics and could not be rejected. Estimate results are discussed in the next Section.

## 5. Econometric Estimates

### 5.1 *The Estimates of the W-STREP-Veneto model (World to Veneto)*

Table 1 summarises the results obtained with the model **W-STREP**, while Figure 1 represents the historical and estimated values of the arrivals of foreign tourists in the Veneto: the econometric model captures very well the turning points and gives a precise picture (the adjusted R2 is 0.997) of the trend in international tourist flows in the region.

In addition, from the point of view of coherence of the theoretical model, the estimates represent the expected economic phenomena; the direct effect of substitution (a reduction in the number of foreign tourists in the Veneto due to an increase in the relative prices in the region) is equal to -0.88%, while the indirect effect of substitution (an increase in the number of foreign tourists in the Veneto due to an increase in the relative prices in Friuli Venezia Giulia and Emilia Romagna) is equal to 2.15%. Hence signifying that if relative prices in the Veneto increase by 1%, the quota of foreign tourists in the Veneto falls by 0.88%; while, if relative prices in the two competing regions increase by 1%, the quota of foreign tourists in the Veneto rises by 2.15%. Note how the second result is even greater than the first, emphasising a strong possibility of substituting the tourist product of the Veneto with one of the other two regions. Note too, that the impact of a variation in the relative prices only becomes significant after a delay of one year. However, there seems to be no significant effect of price substitution in Trentino A.A.<sup>5</sup>.

The number of beds also have a meaningful significance. An increase of 1% in accommodation capacity in the Veneto, instigates a 0.21% increase in the number of foreign tourists who decide to holiday in the Veneto. This variable, as with the relative prices, has a significant impact on the number of foreign tourists after a delay of one year.

Finally, the least positive aspect for the tourist economy in the Veneto must be pointed out. The trend is negative, in that the quota of foreign tourists who choose the Veneto out of the total number of tourists who come to Italy is on a downhill trend. In other words, the long-term effects underlined above (the level of "maturity" of the product, environmental pollution, congestion) tend to have negative repercussions on the number of foreign tourists arriving in the Veneto. Consequently, in spite of the fact that arrivals in the Veneto are growing and that the model **W-STREP** forecasts improved strength for the tourist economy in the Veneto with respect to other regions during the downswing of the economic cycle, in the medium-long term a relative demand contraction has to be expected.

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5 The low value of test t related to these two parameters is tied to the reduced dimension of the sample (in spite of the framework of the panel, there are only 48 observations). Therefore, in structuring the model it was preferred to optimise the adjusted R2 criteria, for which, using the theorem of Pesaran, all the variables with a test t superior to 1 were considered significant.

The parameter which measures the effect of variables with a temporal low dynamics (the distance from the main countries of origin, the characteristics of the artistic-cultural heritage of the region, the multi-faceted tourist supply in the Veneto) on the number of tourists arriving in the Veneto, or rather, the fixed effect on the econometric model, takes on a negative value only because the functional form of the model is logarithmic. Once transformed, the value of this parameter, which represents the quota of the average tourist, independent from variations in economic and non-economic factors as considered above, is 0.366 in the Veneto, 0.066 in Friuli Venezia Giulia, 0.123 in Emilia Romagna and 0.258 in Trentino Alto Adige. This therefore confirms the hypothesis that, *ceteris paribus*, the variety on tourist supply in the Veneto tends to attract a greater number of tourists to the region compared to other regions.

## 5.2 *The Estimates of the M-STREP-Veneto model (Multi-origin to Veneto)*

Table 2 summarises the results of the estimates of the model **M-STREP**, presenting the estimated parameters for each country of origin and each variable tested to be statistically significant, and corrected with the values of the dummies introduced to capture the peculiarities of each region and of the countries of origin<sup>6</sup>.

The parameters which define the elasticity of each of the 21 markets of demand with reference to every variable considered assume values fairly close to the estimated average elasticity in the model **W-STREP**.

The estimate of the elasticity of arrivals in the Veneto compared to the arrivals in Italy was shown to be fairly similar and very close to the unit for all the countries considered. In particular, the value of this parameter is higher for the Veneto compared to the competing regions, a further confirmation of the ability of the region to attract foreign tourists who choose Italy for their holiday destination.

Relative prices (PTVEN/PTITA) became significant for most of the countries after a delay of one year. It is obviously reasonable to suppose that gathering information in order to programme a holiday would take place before the holiday itself. However, tourists from countries further away (USA, Canada, Australia, Japan) who also have to sustain considerable travel expenses are revealed as being more sensitive to the current variation in prices, as are tourists from not so well-off countries (Spain, Portugal, Greece, Ireland). In particular, a 1% increase in relative prices in the Veneto would reduce the tourist movement from Ireland by 5.81%.

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6 In order to make easier the reading and the interpretation of the results, the estimates of the elasticity of price and of the elasticity with regards to accommodation capacity have been reported in terms of the average value, taking into account the estimated parameter, and calculated respectively using the average data for the period 1981-1991 of the GDP per capita of each country, and the average length of stay specific for each country for the period 1981-1991.

Table 1. **Reduced from Arrivals in Veneto: estimated coefficients of W-STREP Veneto Model**

DEPENDENT VARIABLE: LOG(arrivals in Veneto/arrivals in Italy)

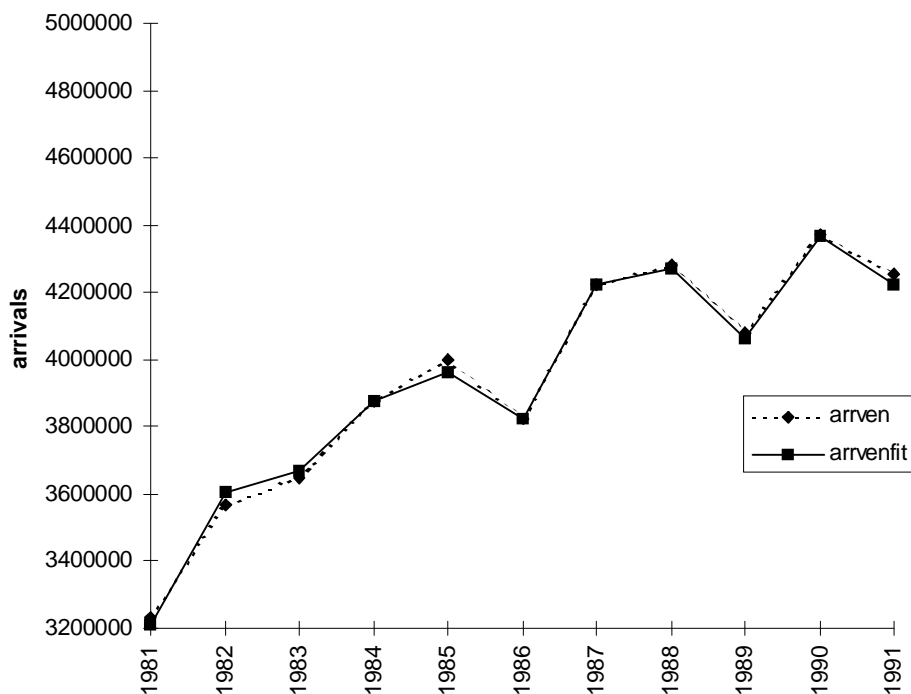
R-Squared = 0.998

Adjusted R-Squared = 0.997

VARIABLES:

	Estimated Coefficient	T-statistic
FIXED EFFECT	-1.00	-3.67
TREND	-0.15	-1.35
PTVEN/PTITA(-1)	-0.88	-1.21
PTFVG-EMR/PTITA(-1)	2.15	1.48
PLVEN/PLITA(-1)	0.21	1.96
MUCIL	-0.09	-6.47

Figure 1. **W-STREP Veneto Model: historical and fitted values and forecasts of international tourism arrivals in Veneto**



Finally, less sensitivity to variations in prices as shown by the countries of Central Europe could be interpreted as a manifestation of a greater affection and sense of loyalty towards holidaying in the Veneto. The number of arrivals from these countries would only fall by about 1.4% if faced by 1% increase in regional relative prices.

The model **M-STREP** also underlines a strong indirect effect of substitution (PTFVG-EMR/PTITA): the value of elasticity for all countries is around 2%. If relative prices in Friuli Venezia Giulia and Emilia Romagna rose by 1%, arrivals in the Veneto would increase by more than double that amount. This increase is even greater for those countries who have a lower income per capita (Greece, Ireland, Spain, Portugal), demonstrating a stronger reaction to price variations.

Neither relative prices of tourist services in the Veneto, nor the relative prices of tourist services in the competing regions, were significant for countries in Latin America and Africa, probably because of the particular composition of tourist flows from these areas to the Veneto (very rich segments, ethnic tourism, immigration phenomena).

As has already been seen from the estimates obtained with the model **W-STREP**, an increase in accommodation capacity increases the number of tourists who decide to holiday in the Veneto. In more detail, the model **M-STREP** demonstrates how tourists coming from countries belonging to the macro-region made up of the USA, Canada, Australia, and Japan are the very ones who show a greater appreciation for the quality of hotel facilities. In fact, tourists from these countries choose the Veneto above all as a destination for cultural tourism and as part of package tours which also visit other Italian and European cities and can only but include hotel stays. Instead, tourism in the Veneto from Central European countries which choose mainly seaside resorts, lakes and mountains, is effected positively by an increase in other types of accommodation.

As far as the other variables of the model are concerned, a downward trend in tourism from Austria, the United Kingdom and Holland should be pointed out. While a positive trend has been indicated in arrivals in the Veneto of tourists from Australia.

The model **M-STREP** also pinpointed the effects of environmental pollution in the Adriatic Sea, which came to a head in 1989. Those countries which react in a significantly negative way to this phenomenon are those which generally choose a seaside holiday in the Veneto: Austria, France, Germany and Switzerland.

Finally, the value of the fixed effect, measuring the different types of impact of all the variables with a temporal low dynamic on the demand for tourism as expressed by each of the countries involved, reveals that the Veneto wields a strong power of attraction on flows from the USA, Canada, Japan, Australia, Latin America and Africa.

## 6. Conclusions

This report has presented the theoretical framework and the econometric models used to forecast the short to medium-run magnitude of tourist flows at a regional level.

The results from the **STREP-Veneto** model, in both the implementations, "World to Region" and "Multi-origin to Region", seem to confirm how effective the theoretical approach and of the estimation method adopted are. Nevertheless, a positive appraisal has to be given by checking the ability of the models to capture the analysed phenomena, their operativity and their application flexibility.

As far as the first aspect is concerned, it is made certain by the fairly good estimates and the tests performed. These results are due not only to the good specification of the explanatory variables, but also to the use of the panel data estimation technique. The choice of modelling simultaneously more than one region, in fact, is coherent with the methodological approach described in section 2 and used also for the implementation of the **TRIP** model. Furthermore it gives undoubted advantages in the application phase. As already said, in fact, the estimate precision obtained by modelling the Veneto together with Emilia Romagna, Trentino Alto Adige and Friuli Venezia Giulia is better than the one coming from a procedure modelling only one region. The reason stands on the possibility to exploit the cross-section dimension and the time dimension of the data, and to take into account both tourist characteristic similarities of the regions and the intra-regional variability.

Following this approach, all Italian regions should have been introduced in the panel analysis both to increase the amount of data and to study the whole direct and indirect effects of substitution. A cost-benefit analysis led us to a cheaper choice, but richer in results. In fact, if the 20 Italian regions had been included, 20x21 equations would have been performed, where both the direct price effects and the 19 cross-price effects would have been considered. Furthermore, both the direct and the cross-effect of variations on the accommodation supply should have been tested. So, the number of variables would have been enormous and difficult to manage and multicollinearity among price series would have happened. For these reasons the analysis has been focused only on the group of regions for which the economic analysis was significant.

From the point of view of the operativity of the methodology used, the good quality of the estimates seems to indicate that the research effort has achieved its main goal: the construction of a reliable forecasting tool at a regional level. Moreover, the demand segmentation analysis allowed by the **M-STREP** model, makes this tool an important aid for private and public tourist programming.

Finally, this effort is a good start leading to the generalisation of the methodology to all the regions. The analysis for the Veneto, in fact, will be able to assume greater importance if it can be compared with the results for other tourist areas coming from specifications of the same approach here discussed. From this point of view let us stress the flexibility of the **STREP** model which can be adjusted to the needs and the objectives of each tourist region.

Table 2. Reduced form of Arrivals in Veneto: estimated coefficients of M-STREP Veneto Model

COUNTRIES	DEPENDENT VARIABLE = LOG(ARRIVALS IN VENETO)										R-SQUARED = 0.933	
	EFFECTS					VARIABLES						
	FIXED	ARRITA	PTVEN/PTTITA(-1)	PTVEN/PTTITA	PTFVG-EMR/PTTITA(-1)	PLAV/PLAI(-1)	PLXV/PLX(-1)	TREND	MUCIL	UNSOC	RCES	R-SQUARE
AUSTRIA	-1.14	1.06	-1.44		2.21	0.09	0.09	-0.47	-0.26			0.96
BELGIUM-LUX.	-2.25	1.06	-1.45		2.23	0.09	0.09					0.76
DENMARK	-4.05	1.25	-2.66		2.15	0.03						0.92
FINLAND	-4.51	1.25	-2.59		2.15	0.03						0.95
FRANCE	-1.99	1.06	-1.43		2.19	0.13	0.14		-0.30			0.71
WEST GERMANY	-2.22	1.06	-1.42		2.17	0.08	0.09		-0.15			0.96
GREECE	-2.72	1.11		-2.60	2.47	0.07						0.89
IRELAND	-2.00	1.06		-5.81	2.33	0.11	0.15			-0.25	-0.19	0.78
NORWAY	-4.18	1.25	-2.60		2.11	0.04						0.92
NETHERLANDS	-1.30	1.06	-1.44		2.21	0.11	0.09	-0.90				0.81
PORTUGAL	-2.72	1.11		-2.74	2.61	0.06						0.89
UNITED KINGDOM	-1.91	1.13	-1.45		2.22	0.10	0.11	-1.23			-0.19	0.79
SPAIN	-2.72	1.11		-2.51	2.38	0.07						0.79
SWEDEN	-4.73	1.25	-2.64		2.14	0.04						0.94
SWITZERLAND	-2.21	1.06	-1.37		2.09	0.09	0.09		-0.22			0.88
CANADA	-1.29	1.00		-2.92	2.10	0.12						0.93
USA	-1.29	1.00		-2.86	2.06	0.14						0.97
AUSTRALIA	-1.29	1.00		-3.03	2.18	0.12		0.22				0.96
JAPAN	-1.29	1.00		-2.98	2.14	0.21						0.99
LATIN AMERICA	-0.72	0.94					0.10					0.84
AFRICA	-0.72	0.94					0.09					0.80

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## **THE ROLE OF INFORMATION TECHNOLOGY IN THE EXPANSION OF STATISTICS**

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The growth registered in tourism in Portugal since the beginning of the eighties gives this sector an incontestable strategic weight within the national economy. This is illustrated by:

- compensates for a significant part of the trade deficit;
- accounts for almost 8 per cent of the tourist VAB on the national GDP;
- involves 5 per cent of Portugal's active population;
- a strong multiplication effect on other activities, through the effects of demand and the composition of investments;
- few imported components in the tourist's consumption (equivalent to 18 per cent of the foreign tourist's expenses in Portugal, according to the latest available data).

However, the tourist sector's contribution to the country's development is not only confined to the economic sphere. Other areas of impact include:

- accelerated regional development ;
- the enhancement of the cultural patrimony and environmental protection;
- improvements in the standard of living.

These aspects in themselves clearly demonstrate a great need for detailed knowledge of the structure and evolution of the tourist sector.

Statistical information becomes, therefore, an important instrument, both for the definition of policies and the evaluation of their impact and for the current management of state and private enterprises. In addition, adequate statistical information makes it possible to analyse sectors and -sub-sectors more accurately, thus helping the activities of commercial enterprises and the transparency of the market itself.

This explains the priority given in many countries with high tourist flows to the maintenance of a statistical database which corresponds to the needs of the sector. Portugal has been relatively active in this respect and within the context of institutional statistics production the INE (National Statistics Institute) and the DGT (Tourism Board) have been working on the following projects:

- implementation of a new methodological system for border crossing as a result of the Shengen Agreement;
- improvement of the procedure used by Banco de Portugal for the settlement of revenues and expenses regarding tourism;

- reinforcement of the information on external tourist markets, through the introduction of periodical studies regarding the foreign visitor's characterisation and the quantification of their average expenditures;
- creation of an indexation of tourist prices (in an introductory phase).

In addition to these initiatives, there is the Permanent Observatory for Tourist Activities (OPAT), which means that the present situation on statistical production for the tourist sector can be considered satisfactory, both from the point of view of quality and diversity.

In terms of concepts and base indicators, Portugal complies almost exactly with the indications given by the World Tourism Organisation. The range of available indicators has made it relatively easy for the national statistical framework to adapt to the demands resulting from the new EC directive regarding statistics on tourism.

This does not mean that there are no gaps or insufficiencies to be corrected or reduced. The various problems which need to be solved are being studied by the Grupo de Trabalho de Estatísticas do Turismo do Conselho Superior de Estatística (Tourism Statistics Work Group from the Higher Statistics Board). This paper, however, concentrates on the need for information which, above all, concerns the creation of statistical instruments which will measure the activities that will be undertaken by the State and the private enterprises in the future.

Portuguese tourism is entering a "new cycle". Following the "explosion" which occurred during the eighties where very high average annual growth rates were observed, it is clear that Portuguese tourism is going through a phase of qualitative evolution which depends, above all, on the capacity to reduce the effects of current structural inequalities (concentration of demand in respect of product, market, region and season; the concentration of the offer in a restricted number of regions; the very high "weight" in the number of parallel beds and the commercialisation dominated by the big operators).

It is important to eliminate some of these weak points in order to ensure the sustained growth of the sector in the medium and long term, which will inevitably pass through a development stage associated with the qualification of the offer (human resources included) and the diversification of markets and products.

In this context, the fundamental question is how to encourage efficient activity in each domain? In aiming to stimulate a varied tourist offer through investment in new products, namely cultural tourism, sports tourism, religious tourism, rural tourism, conferences, incentive tourism and health tourism, will the statistical sources in the sector's base indicator charts correspond to the information needs?

Equally, can traditional statistics support the organisational studies which are essential to the qualification of the tourist offer and its framework?

It is obvious that, from this point of view, the existing base statistics are insufficient, corresponding only to the characterisation of the aspects which concern the tourist markets and their segmentation.

Therefore, to acquire the supporting information on tourist planning, it was necessary to build a specific instrument that would enable the institutional sector to outline, programme and execute an effective and coherent development and organisation policy. This tool is known as the Inventory of National Tourist Resources and has been developed by the Tourism Board.

Within this context, the following outlines certain aspects of this project, giving priority to the analysis of the alternative it constitutes as a credible source of statistical information.

The Inventory of Tourist Resources (IRT) holds an updated and geographically indexed database integrating various kinds of information for use by multiple sectors. This will make possible, in the future, the establishment of a more efficient type of zoning which takes into consideration the state of the environment, the patrimony characteristics, traditional activities, type of habitat and the regional economy.

Apart from its fundamental role as a support to policy measures in the area of tourism organisation, the IRT also constitutes a global reference chart for the promotion of the national tourism products, encompassing a vast source of information of multi-sector interest, to be made available to the public, the tour operators and other public and private institutions within the sector.

The IRT was conceived as an instrument aimed at compensating for an institutional shortage of information in this domain and has rapidly taken on a different status, presently being the biggest data source concerning the Portuguese tourist offer. The vast range possibilities, led to its being linked to a computerised system which allows its internal exploitation by the DGT within the desired framework as well as making the data available to external users, which may range from the sector's operators to tourists themselves.

The IRT comprises all types of tourist resources encompassed within the scope of the adopted definition - *"Tourist Resource" is the natural element as a whole, the human activity or the product thereof which is capable of motivating the movement of people, of occupying their leisure time, of satisfying the needs resulting from their stay.* These resources are classed by means of a coherent hierarchical structure covering the natural and cultural patrimony resources through to the tourist facilities themselves.

The IRT currently contains:

- 190 distinct types of resources (5th level), with local information structures;
- about 60 000 specific resources, covering the mainland, which may be handled on a regional and thematic level (through key words or types of resources), by means of criterion of tourist relevance or even through the attributes of each resource.

The IRT system is based on open platforms with a client-server architecture. The databases containing all information on the Inventory of Tourist Resources reside in a central server installed in the DGT. A second server will be installed in the near future which will hold a copy of the database and feed the external access (multimedia kiosks and professional research) via a connection to a RDIS router.

Having briefly described how the Inventory of Tourist Resources works, we need to look at how a system of this type, clearly supported by the new information and communications technologies, can function as a statistical source.

The system constitutes a repository of the country's or a region's global tourist offer, holding all information concerning facilities and tourist activities and also the primary or basic offer itself. This is already a significant gain as the base statistics only allow quantification of the existing offer for some tourist enterprises. However, it is unquestionable that the primary offer constitutes a fundamental element for the identification of the tourist vocation of a country or a region from where one can begin conceiving and substantiating the secondary or derived offers. These secondary offers allow businesses to welcome, lodge

and entertain tourists who are attracted essentially by the natural resources and by the value of the existing historical, architectonics, monumental, artistic and cultural patrimony. Therefore, the existence of an information (and communication) system with these components of the tourist offer is fundamental.

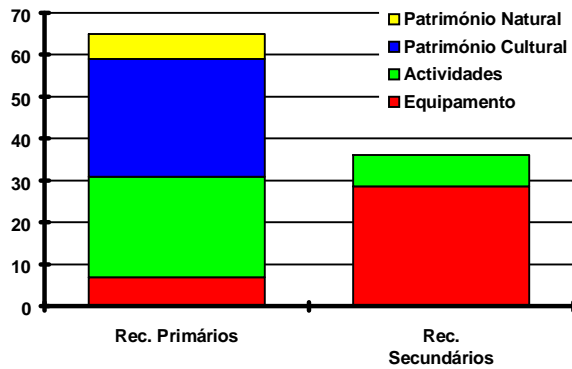
The following gives several examples of the type of statistical information that the system may offer:

- a) In the first example, we show charts which make a comparison of the composition of the basic offer versus the secondary offer for the big promotional tourist areas of the Portuguese mainland.

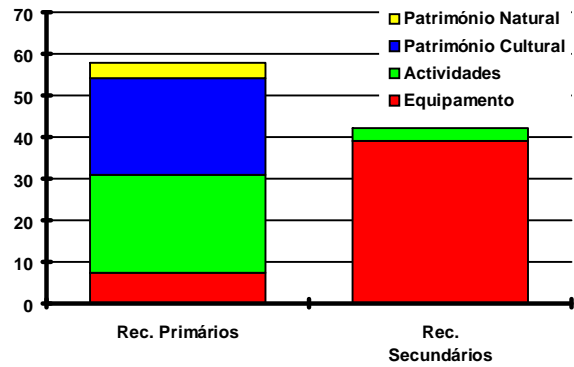
The results confirm the theories. Portugal has a generally well balanced tourist offer, with its primary resources, especially the cultural patrimony crowning them. The Green Coast (Costa Verde) and the Silver Coast (Costa de Prata) have the same composition, with the importance of the existing tourist facilities being clear in the case of the Lisbon Coast (Costa de Lisboa).

This situation is accentuated in the case of the Algarve, where the lodging units take up more than half the region's resources. Lastly one points out the case of the Mountains and Plains (Montanhas e Planícies) where there is great potential with regard to primary resources, along with an offer of tourist facilities which are only slightly developed.

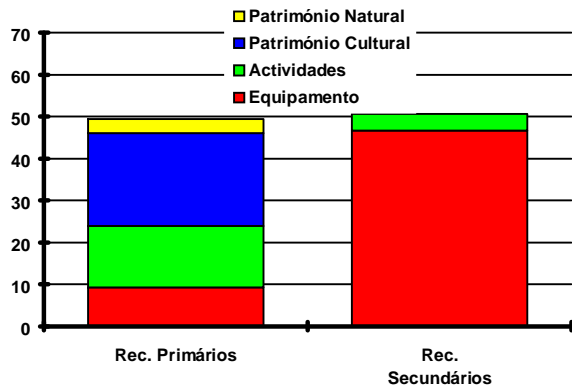
### Costa Verde



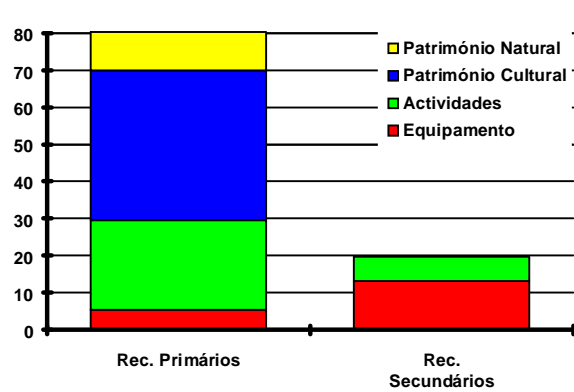
### Costa de Prata



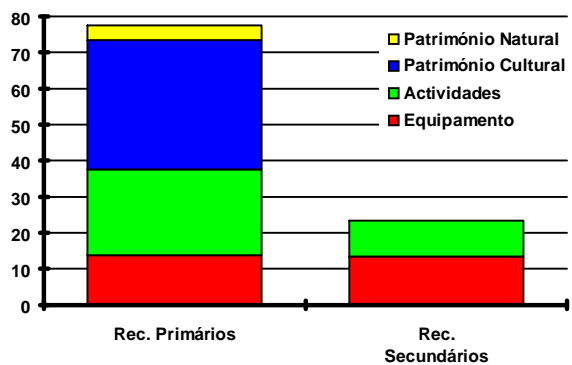
### Costa de Lisboa



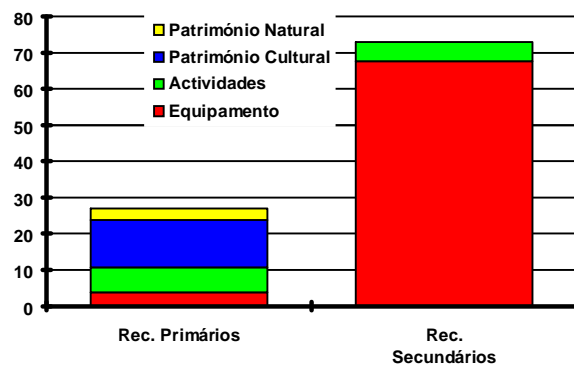
### Montanhas



### Planícies



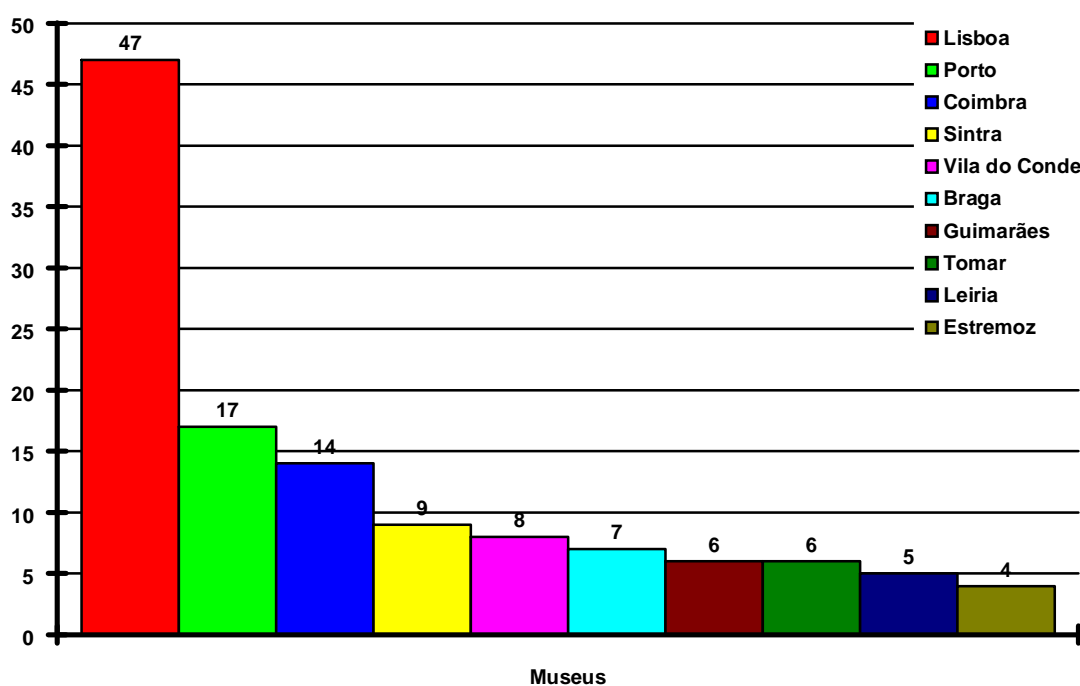
### Algarve



b) Diversification of the offer has already been identified as a necessary objective for tourism in Portugal. If we focus on cultural tourism, for example, it is necessary to know the existing patrimony in this domain. Some possible questions could be: how many museums of cultural interest are there in the country, and how are they distributed by ATPs and main municipalities? How are they distributed in regard to other principal attractions? The next chart shows some of the IRT can give you some answers, as you can see in the next chart:

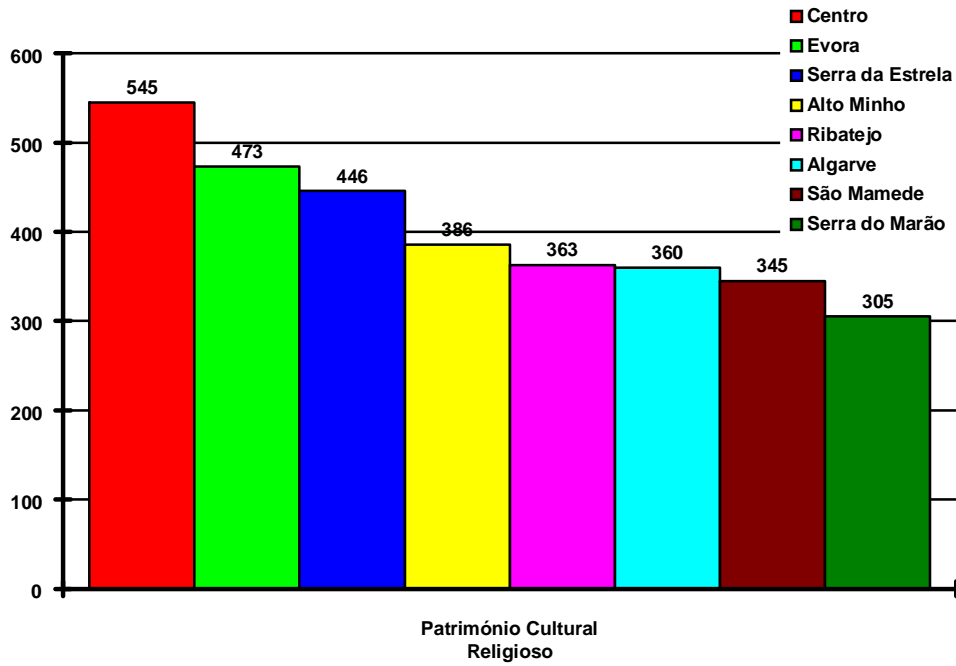
### Distribution by municipalities

*Nº de Museus*



c) On the other hand, which tourist regions have the largest cultural-religious patrimony, keeping in mind the potential of this kind of product? What regions could eventually propose tourist circuits with a religious theme?

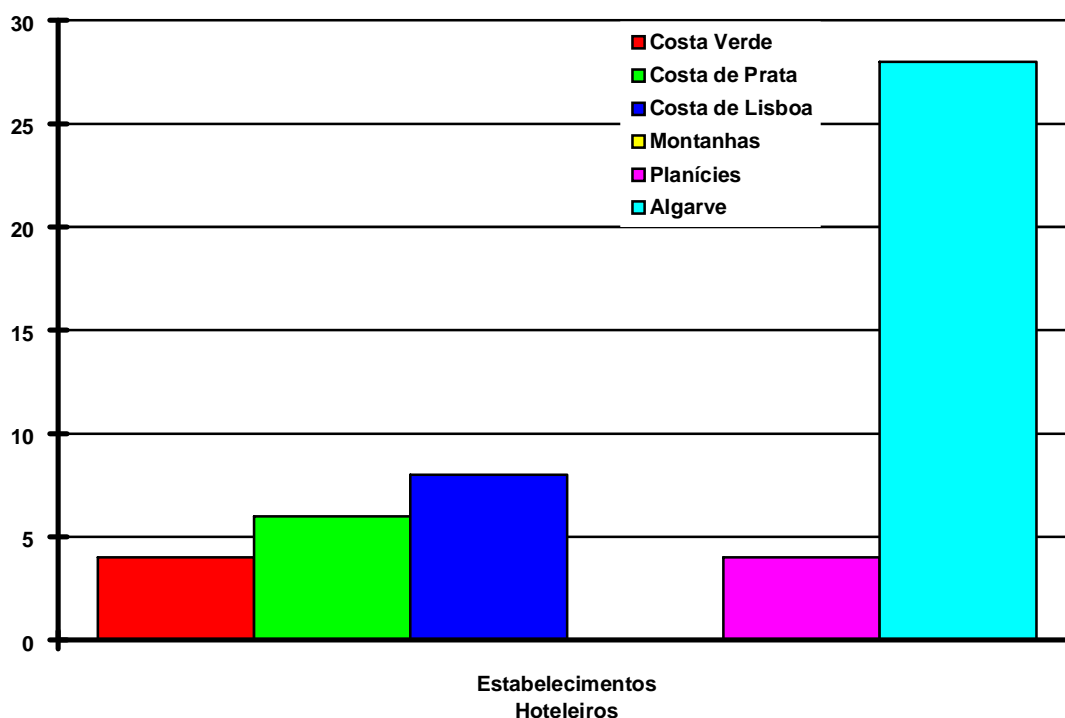
### Cultural Religious Patrimony



- d) How many hotel establishments with conference rooms and swimming pools are there by the seaside?

**Hotel Establishments**  
(Sea-side, swimming-pool, conference rooms)

*Nº of establishments*



A source of statistical information is a fundamental instrument for the study of the creation of new tourist products, for the classification of facilities and tourism locations, for the tourist definition of each region and for the orientation of the possible investments.

Using new information and communications technologies provides a powerful tool for statistical evaluation on the level of planning for tourism.

We then looked at whether a system such as the Inventory of Tourist Resources only operate as an informative support on the incidence of the tourist offer? Although the system uses a database built by listing the components of the market (offer), what statistical elements could it offer in the opposite domain (demand)?

This question needs to be looked at in both a short and long term context.

In the first place, the existence of tourist resources in the data base, including the references of all elements which comprise the offer, as well as an indication of the respective exploiting entities has constituted a universal file susceptible of viabilising the emission of thorough questionnaires or sampling

questionnaires. Actually one has obtained through the system, the substantiated knowledge of the references of the potential enquiries at the level of the different components of basic and secondary offer which represents a very high added value, knowing the difficulties encountered in many cases in obtaining a reliable delimitation of the universe to be studied. One may also refer, without any restrictions, that the Tourist Resources Management and Information System shall be the main nominative file for tourist establishments and their respective exploiting companies. In practical terms, and to attest this idea, let one refer that the IRT exploiting entities shall allow, in the immediate plan, the launching of statistical operations regarding the so called "private lodging", viabilising in this way compliance with the EC directives.

But, the performance of the Tourist Resources Management and Information System as a statistical source shall in future be extended to other situations, including the direct gathering of elements concerning tourist demand. In fact, the consultation products removed from the data base were conceived having in mind the gathering of characterising elements on the direct or indirect users. So, the "professional consultation" software will allow for example, the registration by the tourists' country of residence, of the different requests for information demanded at the tourist offices, independently of their belonging or not to the ICEP, the Tourist Regions or the Autharquies. The application shall proceed to the parametrization of the various information typologies, for which it shall be viable to obtain, with a regularity to be decided upon, direct statistics on the activity in the tourist offices and respective disaggregations by countries and centres of interest.

But it will also be viable, on multimedia kiosks for self-consultation level, to gather data which will contribute to the characterisation of the tourist's own profile.

In fact, the sub-system called "The Intelligent Manager of Tourist Resources", which has as the main objective of advising tourists on tourist routes, holds a module for the characterisation of the users, set on three descriptive groups: social-cultural variables, behaviour variables and thematic variables. The configuration of these vectors shall allow one to give advise on tourist routes suitable to the average profile of each of the system's user, opening a vast informative field for statistical exploitation.

In the dominion of the *characteristics*, there will be data on the sex, ages, group types, professions, the means of transport used, the financial conditions, the localisation, etc. which will viabilise the effective segmentation of these elements by tourist markets. On the other hand, within the scope of the *behaviour* variables one shall gather data susceptible of placing the tourist within his preferential motivations. It deals with priority information for the entities with responsibilities in the area of organising tourist entertainment and the occupation of leisure time. Lastly, in the sphere of the *thematic* variables, one shall obtain substantiated information on the centres of interest which may directly motivate the tourists (gastronomy, handicraft, adventure, shopping, sports, typical villages, monuments, etc.) and which constitute an essential base for the local tourist agents.

It is obvious that the abundant information which one can extract from the system on the analysis of the tourist demand shall always have to be object of an adequate calibration, resorting to appropriate techniques of statistical inference, so as to avoid situations of sample biasing and consequently low coefficients of trust in the estimation of population parameters.

To conclude, one imposes a final reference to the last situation that an information system like the IRT may confer at a statistical level. In view of the communications network to implement, which in a first phase may connect about 80 multimedia kiosks and 120 consultation professional stations, one justifies plainly the utilisation of the system for the broadcasting of the main statistical data on the sector. In fact, just as the pages which the DGT is building for the consultation through the INTERNET, it shall be perfectly viable to

associate to the system, mechanisms which allow the access to basic statistical information (entrance of foreigners, lodging in hotels, etc.), with the latter coming to revest the most varied forms, from the reproduction of summary bulletins to the simple inclusion of charts and graphs.

It shall be a channel not to be set aside, because one of the present gaps in the panorama of statistical production in the tourist sector, is the difficulty of the institutional statistics producing entities (DGT and INE) to transmit to the sector's agents the updating of the basic statistics, as well as the susceptibility for new study routines.

This paper has focused on the possibilities which exist for exploiting information systems based on modern information and communications technologies from a statistical point of view. International tendencies lean towards a scenario of great expansion of the new Information and Communications Technologies (TIC) connected to tourism. This belief is due to several factors.

Firstly, the profile of the future tourist indicates that he will demand a permanent source of information, the possibility of booking the destination selected after studying the options which meet his requirements. In this respect, the new TIC constitutes a factor of primary importance, as the telematic network systems permit not only the broadcasting of information but also enable promotional action, taking advantage of multimedia products.

Secondly, the tourist companies, as well as developing more direct and aggressive forms of marketing, will have to bet on the "innovation" factor for the commercialisation of their products, for which the new TIC will, in this dominion, find a favourable context for expansion.

In addition, it is evident that in Europe where there are growing tendencies to globalise the business connected to the commercialisation of tourist activities (integration of producers/retailers/chains of distribution/consumers), TIC companies are increasingly involved in the strategy. The European Union has acknowledged the need for promoting information and communication systems and have created a specific programme (INFO 2000, with incidence 1996/99), which aims, amongst other objectives, to maximise European multimedia potential and the increase the use of TIC in the public sector.

It is obvious that in addition to the two traditional information sources in the tourism sector - the use of administrative files and the issuing of questionnaires (universal or by sampling), a third will be added - the exploitation of the computerised systems supported by modern Information and Communications Technologies. This alternative, like the classical methods, holds its advantages and disadvantages. That is why we believe this must be seen as a means of enhancing the global statistical chart without using it as a substitution for the existing traditional methods.

## **GEOGRAPHICAL INFORMATION SYSTEMS IN TOURISM STATISTICS IN EUROSTAT**

### **From GISCO (Geographical Information System of the European Communities) to MGIS-TOUR (Multi-dimensional Geographic Information System on Tourism)**

**Mr Evangelos Pongas  
Eurostat**

#### **What is a "GIS"?**

A GIS is an intelligent system enabling the combination of the latest technologies in the fields of information technology, digital data processing and spatial analysis for encoding, storing, processing, maintaining, analysing and presenting data in association with their geophysical location:

It is a "geo-referenced" data analysis and presentation system.

Economic, social and natural actions and phenomena all have a spatial component which is furthermore one of the primary modes of organising the statistical information concerning these phenomena; and the latter are thus linked with geographical territory in a very general way. By coupling these two characteristics, we can greatly enhance the effectiveness with which they are presented.

#### **How does it function?**

A GIS must be able to answer several types of questions:

- What is to be found at what specific location?
- At what location is a specific feature, a specific item of information, a specific characteristic, located?
- What changes have occurred at a specific location, since a specific date?
- What type of spatial configuration is to be found at a specific location (e.g. urban fabric or rural fabric)?
- What happens if...? (Measurement of the impact of modifications of certain parameters at certain locations, by modelling, simulation,...)

The analysis of elements which are linked with space in this way demands the availability of data on the underlying geographical or topographical situation, such as :

- Road networks;
- Local infrastructure;
- Administrative boundaries;
- etc...

The management of data geo-referenced in this way requires the use of specific information tools. These will enable every user to produce a cartographic image of his numerical data and to detect connections and combinations which might otherwise not have been perceived. The user will thus be able to manage, simultaneously, his geographical information and his spatial analyses.

### **Fields of Application**

A GIS is applicable to several fields, such as:

- Regional policy
  - continual changes in spatial and temporal terms
  - down to infra-regional level
- Agricultural policy
  - monitoring by remote sensing (MARS)
- Environment
  - use of sophisticated EDP techniques
- Transport
  - accessibility models, transport networks
- Extended domains
  - geo-demography (migration...)
  - geo-management (climate...)
  - geo-marketing (activities...)

### **A spatial dimension born of the union of information technology and statistics**

Computers can do far more than we might immediately realise: they extend our intuition; they extend our senses! By combining the tools known as "image processing systems" and "geographical information systems" we can open up a multitude of promising possibilities in the field of statistical applications.

### **The link with statistics**

A GIS links the geo-geographical data with the descriptive attributes (statistics) produced by the National Statistical Institutes or collected by them.

The efficiency of a GIS depends, essentially, on good geo-referencing of the attribute data: a spatial code must be used to link these discrete or continuous data with the regions or precise locations to which they relate.

This eliminates a certain number of conceptual stumbling blocks with which traditional statistics frequently had to contend when the data to be presented were subject to temporal and spatial variation.

### **The geographical dimension**

Statistical data have hitherto been too exclusively tied to official reference grids: communes, localities, countries, regions.

The new geographical information systems must make it possible to place these data in a "physical space" context, which implies the "matching" of statistical information systems (SIS) with the GIS (geographical information system), both in technical and functional terms.

A whole series of new products with geographical components, with specific topographical and thematic characteristics, can now be created.

### **Important tasks for the statistician**

The close interlinking of statistical data and the methods of spatial analysis oblige statisticians to pay more attention to the new problems encountered with regard to geographical information and the rules for its management. They necessitate the formulation of precise rules for the collection, treatment and distribution of spatial statistics.

Eurostat considers it must play an active role in the standardisation and harmonisation of information in this domain by carrying out applications which are already mature enough to have attracted a substantial number of users.

### **Applying GIS technology to tourism statistics**

Statistics on tourism, at Eurostat level, are organised in a multidimensional data base. The combination of multidimensional data base technology and the GIS technology will permit the geographical analysis of information on tourism from different perspectives

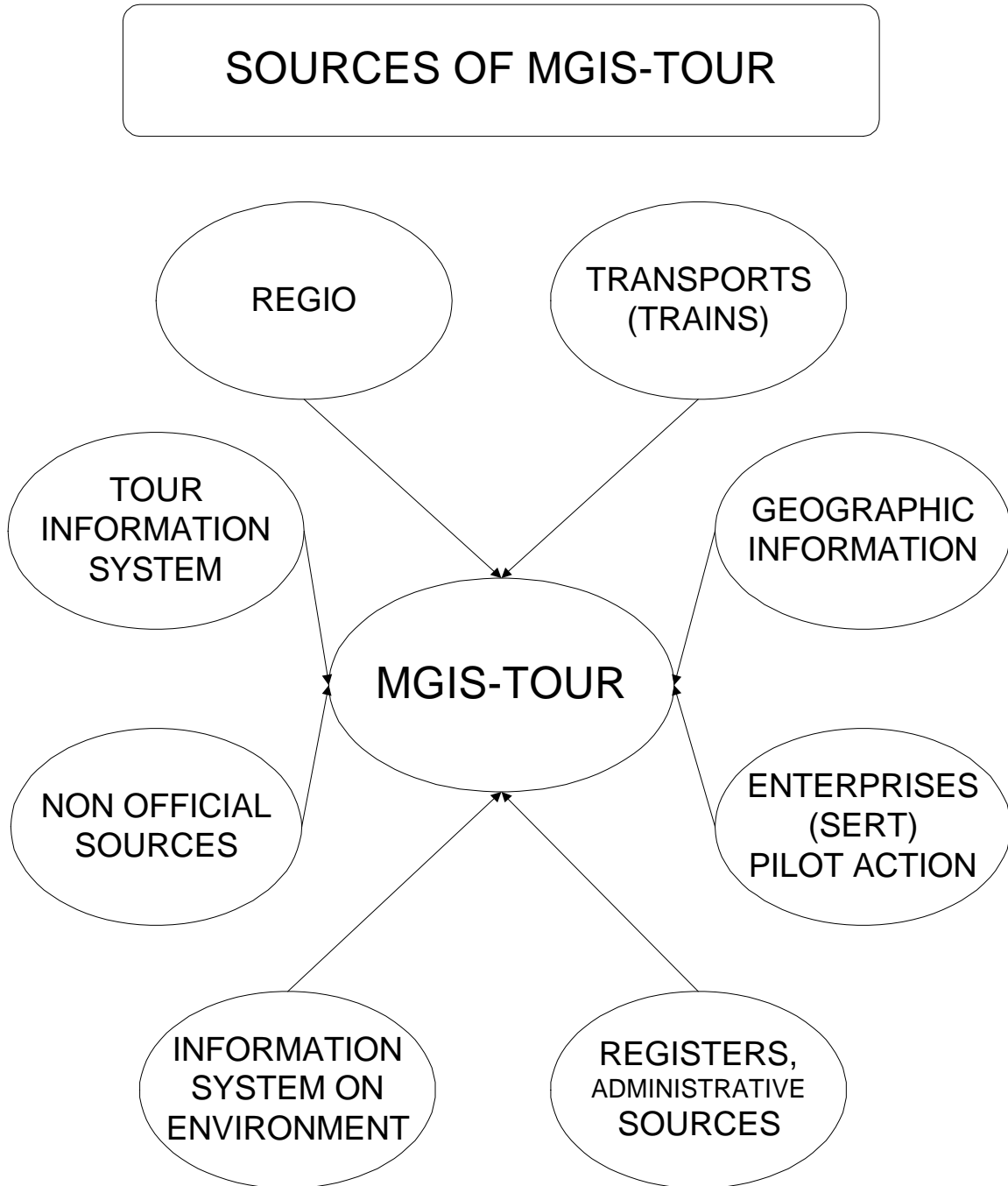
### **What is a "MGIS-TOUR"?**

A MGIS-TOUR is a multi-dimensional geographic information system on tourism enabling the storage, view and analysis of data from different perspective. It consists of four main components: a methodology for the compilation of regional information on tourism, numerical database, geographical references and documentary database.

It is based on the implementation of the Eurostat directive, joined with other statistics at regional and national level and linked with geographical metadata.

## MGIS-TOUR Sources

A MGIS-TOUR has various data sources:



## **Methodology for the compilation of regional information**

The compilation of regional information on tourism requires:

- General methodology for regional tourism (rural, impact, etc.);
- Evaluation of tourism flows from/into an area;
- Parts of regio and transports methodology;
- Classifications

There are also some existing indicators at regional level:

- Tourism infrastructure
  - number of accommodation establishments, rooms, stars,...
  - other tourism activities
- Transport infrastructure
  - number of roads, railways, number of ports
- Tourism flows
  - arrivals, nights, net/gross use
  - estimation on expenditure
- Economic information
  - turnover
  - value added by branch of activity
  - GDP per inhabitant
- Employment
  - by branch of activity
  - by other categories (sex, etc.)
- Demographic indicators
  - population by age, sex, etc.
- Transports
  - Flows of passengers (maritime, aviation, etc.)
- Other (environment, geographic, etc.)



## **INFOBASE: AN INTEGRATED MULTIMEDIA APPROACH TO TOURISM INFORMATION**

**Mr A. Macchiavelli  
Gruppo CLAS**

### **Introduction**

The aim of this paper is to present the work undertaken at Eurostat to create an integrated hypertextual system. It aims to provide a tool which allows us to manage methodological aspects, statistical sources, and databases. A part of this work has been completed, a part is in progress at present, a part could be developed afterwards.

In order to have a complete understanding of the aims and potential of an integrated multimedia system for information processing on tourism, it is useful to refer to the potential of new information technologies and to their potential functions. The idea of a multimedia system takes shape in this context

### **Multimedia technologies for tourism statistics**

New information technologies present quite innovative characteristics.

A full use of these characteristics allows us to produce some information tools that are completely different from the past. In fact they allow:

- to keep an enormous volume of information in a minimum space;
- to seek for information inside the files in a simple, flexible and fast way;
- to reproduce information with very low costs.

Therefore the winning strategy for the diffusion of these technologies will be to offer products that are:

- integrated; they have to store the highest number possible of connected information;
- multi-purpose; they have to be addressed to the largest range of potential users;
- dynamic; they have to improve with time, so that the following releases offer constantly wider and more detailed information picture.

Then the problem is to store a true universe of knowledge on different fields which could interest different categories of addressees with a common interest.

Referring to tourism, the potential of a multimedia tool founded on hypertextual techniques are enormous. For its characteristics, it will not have to be addressed to one segment of consumers only, but it could effectively serve different segments of consumers.

For instance, we could imagine a multimedia tool containing tourism information oriented towards:

- those who work for the development of the sector and explain its trends, at the European level and at the national level;
- those who work in local Organisations and in professional Associations;
- different types of Operators
- and even to the most developed categories of tourists, who can be interested in some tools which support the planning of tourist activities.

### **Infobase: a European Tourism EXPO**

In order to give a better idea, we could imagine a tourism infobase like a big “Tourism Fair”, a sort of “European Tourism EXPO”.

The reference to a Fair, in fact, allows us to approach the content of a hypertextual file in a simple and intuitive way.

Like in a big fair, hundreds of operators offering huge amounts of information are present. Like a big fair, we can wander around and look here and there, or we can visit just the hall which interest us. Or a hostess could take us to visit only the stands which interest us.

So, bearing in mind the image of the EXPO, a complete hypertextual tool, could contain, for instance:

- The “**Statistics Hall**”, where quantitative and qualitative statistics on tourism are presented. Like any hall of a Fair, it could be divided into stands and present the statistical documentation by argument (structures, tourist flows, countries of origin or destination, the economical role of sector in the economy, etc.).
- Connected to this hall, there could be two rooms addressed to a specialised public. A “**Dictionary Hall**”, in which the definitions of tourist activities, of tourist goods and services, of operators are presented in the different community languages. This space will be visited by any visitor who needs some explanation on definitions or relations between different provisions and national languages. A second room for specialists will be the “**Methodologies Library**”. In this space it will be possible to consult the community an national methodologies which are used to gather and process data on tourism.
- In a space addressed to a large public there will be the “**Graphics Gallery**”. Here the most significant information in the Statistics Hall will be presented in the form of graphics. They could be used by planning managers to analyse tourism phenomena, but also by professional operators to analyse their market position and their company strategy.
- The “**Geography Hall**” will be probably an area of particular interest. In it there will be some thematic maps which allows us an immediate reading of the localisation of the different phenomena explained in other halls.
- At the middle of another large exhibiting area there could be the “**Tourist Resources Hall**”. Here information on natural, artistic, historical and cultural resources will be stored. They will be the

information offered in a large quantity by Tourist Promotion Institutes and by publications on tourism. These documents could be organised in national stands, but the “guided visits” will allow us to access only the information of special interest.

- In the multimedia and image age, the exhibition couldn't do without a “**Film Library**”, where a lot of movies on European tourist resources could be stored.
- In the centre of a third exhibition area there will be the “**Operators' Meeting Point**”. It allows professional operators to get in touch. In a first phase it will deal with the Organisations of the sector; in time it could support a direct contact among the operators. The visitor in this hall could have an idea of the accommodation structures, equipment and initiatives offered by the national Organisation and obtain useful addresses to get in touch with some operators. For this the Hall will be linked with a **Permanent Tourist Organisations Forum** and with a **Professional Associations Forum**, where it will be possible to find a complete catalogue of national and international Institutions and Associations of the sector.
- This exhibition area will be completed by two other areas devoted to specialist operators: the “**Law Library**” and the “**Sectorial Publications Library**”. The first will offer the picture of community and national legislation of the sector. The second will present a reasoned review of the contents of the main periodical tourist publications, with some indication on the target, on the arguments considered in last years and on the places where it's possible to find them.
- We can, at least, imagine that there will also be a “**Transport Hall**”, a sector that is very integrated with tourism. Here the information on European Transport Network will be stored and the most important operators of the sector could be present.
- At the centre of the Exhibition there is the **Meeting Point for Guided Tour**”. This service is the real novelty in an hypertextual file, because it guarantees that there is someone who guides us in discovering the information which interests us especially. So from the Meeting Point some guided visits could start, as, for example:
  - the “who's who” of tourism in Europe, or in France, in Portugal ...
  - the tour of the big sporting events
  - the congress centres
  - the religious itineraries
  - ...

### **INFOEASY: a multimedia approach to statistical information**

As we have seen, what we have imagined and described overtakes the field of statistical information and presents itself as a complete system of approach to tourist information.

The multimedia project which has been set in motion - and that we called synthetically INFOEASY - is only the beginning of a complete multimedia tourism EXPO. Therefore, it's only a part of them, but it has already been conceived in the logic of a strongly integrated management and in view of its future development.

At present, it's made up of four components:

MULTILINK	The tool which proposes a hypertextual and documented reading of the Annex to the Council Recommendation on tourism statistics. We are therefore in the field of methodological aspects and in our EXPO we put it in the "Methodologies Library" and in the "Dictionaries Hall"
SYNTHESIS	Offers an integrated and compared reading of the main methodological documents on tourism. So, also in this case we are in the area of methodologies.
MULTIMEDIA CATALOGUE	The tool by which the information on statistics, on publications and on the sources in the member countries are stored. We are also in the statistical area, but, as we also collect information on tourist Organisations and Associations, we begin to develop also the Forum area.

All these tools link with:

TOUR	The EUROSTAT database on tourism statistics. It will occupy a part of Statistics Area.
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### **The tools and their progress**

Now we can have a look at the characteristics of the different tools and their progress.

#### *MULTILINK: the hypertextual reading of Recommendation on Tourism Statistics*

As it was already presented last year at Forum of Venice, we can give only some news.

It's in Multimedia Viewer and it allows us to read the Council Recommendation in a dynamic and hypertextual way. From the Recommendation a Glossary, dynamically linked to it, was created. The same is also linking with Tour, the database of EUROSTAT.

By the hypertextual tool, the Annex to the Recommendation, that is an arid document, becomes a living tool. It allows us an easier and more oriented consultation and an immediate comparison among the concepts expressed in some different parts of the documents.

The content of the document is divided in topics (elemental information units) which can be paragraphs, phrases or words.

The topics could be read in succession, like a normal reading of a text, or through guided itineraries by arguments.

In any moment it will be possible to link with the Glossary, in order to have some explanation on the terms used.

In the same way, it is possible to link with the database, in order to consult the tourism statistics.

MULTILINK has been completed.

Eventual further developments could concern new versions of Multilink in other languages.

*SYNTHESIS: for a critical analyses of methodology on tourism statistics.*

SYNTHESIS makes easier an integrated reading of documents that are relevant to methodological structures of tourism statistics.

The work is aimed at performing a comparative analysis of the information contained in the various documents inherent to statistical methodologies on tourism, with the purpose of:

1. verifying to what extent such information converges in terms of contents and definitions adopted;
2. highlighting problems encountered;
3. harmonising Eurostat methodological documents on tourism statistics to Annex to the Council Recommendation;
4. pointing out existing differences between Eurostat and other international sources documents.

Thus Synthesis contains:

- a **Collection** of all main methodological documents concerning tourism statistics, recorded on floppy disk and with a homogenous layout;
- an **Annotated Bibliography**;
- and a **Common Reading Scheme of Interpretation**.

The **Annotated Bibliography** gives a general overview of existing methodological documents concerning tourism.

Hypertextual links make it easy to connect:

- specific subjects in the collected documents;
- previous versions of documents;
- places where a specific subject is dealt within the Common Reading Scheme of Interpretation.

The **Common Reading Scheme of Interpretation** offers a conceptual framework for collecting and comparing documents.

It provides a complete overview of methodological problems concerning tourism statistics and makes it possible to verify the compatibility among various approaches.

It is dynamically linked with the last version of a each collected document: in such a way that contents of the scheme are always up-to-date.

The Common Reading Scheme of Interpretation is hypertextually linked with originating documents: in this way it is possible to go into in more detail a subject or to have a larger view of it.

At present, Synthesis is a complete product as it contains a significant number of documents. But, as you can imagine, it is a product that can be developed further, if we decide to extend the range of documents that could be analysed.

### MULTIMEDIA CATALOGUE OF STATISTICAL PUBLICATIONS

The quantity of statistical publications on tourism produced by national and international Institutions is enormous and difficult to access.

Besides National Statistical Institutions, in fact, there are many other Institutions which offer quantitative information, generally limited to specific arguments, but very interesting for the knowledge and interpretation of tourist phenomena.

The approach to this information could be very useful for people who prepare reports on tourism, because it allows them to integrate the known aspects them with more detailed information at a sectorial and territorial level.

The creation of a MULTIMEDIA CATALOGUE OF STATISTICAL PUBLICATIONS implies:

- identifying the national and international Organisations which offer quantitative information on tourism;
- obtaining the highest number of useful publications;
- to analysing the content of the publications, finding the useful information.

The aim of the work, therefore, is to offer to the operators a relational database that allows them to know who are the producers, what the information is and how it is gathered.

The project is carried out by:

1. Direct contact with Organisations

A questionnaire has been sent to each of them.

2. Bibliographical research

Through local collaborators, some researches in the specialised libraries in the main cities are done.

3. Research on databases

Some exploration is conducted through INTERNET and on the databases of specialised newspapers.

At present about five hundred organisations have been contacted. About one hundred answers arrived and a few dozens of publications have been collected.

Obviously not all the answers give useful statistical information. The information we received have been classified as follows:

- commercial information only;
- qualitative information on tourism sector;
- statistical non-periodical information;
- statistical periodical information:
  - \* at local level
  - \* at national level
  - \* at international level

The file of addresses is a very interesting product in itself, as it identifies a large number of organisations which are involved in the tourism sector.

The information is organised into these main categories:

- contacts
- organisations
- publications
- statistical tables

Some links among them are created so as to permit a direct information retrieval to the users.

The work is in progress and we expect to arrive at completion phase around the end of the year.

When a significant quantity of information is reached, the results of the work will be stored in a CD ROM and distributed to the potential users. in the future they could find a place on INTERNET too.



## **AN EXAMPLE OF GLOBAL DISTRIBUTION SYSTEM: AMADEUS**

**Mr Arnaud Debuchy  
AMADEUS**

### **What is AMADEUS?**

- A link between the world travel agents and the travel providers (airline, car, hotel, rail...)
- A network of PCs located at travel agencies and airline offices
- A central data base and processing engine
- A direct link to providers inventory systems
- Over 162,000 terminals connected world-wide
- 740 airlines bookable
- Presence in 115 countries
- 104 airlines use AMADEUS as their own reservation system
- Largest data centre in Europe : 16 IBM and 2 Unisys mainframes
- 2 robotics data tape handlers
- 280 million bookings this year
- 115 million tickets issued

### **Information handling**

- Regulated by the European Code of Conduct
- Abides to German law on information confidentiality
- Passenger name cannot be communicated

- Third party access restricted

## **Statistical data available**

### ***To airlines: Marketing Information Data Tape***

- Information on all travel agencies connected to AMADEUS
- Information on all bookings made by the travel agencies
- Available on daily, weekly or monthly basis

### ***Benefits to airlines:***

- Information on all travel agencies and all airlines available
- Market analysis, trends
- Competitive analysis, flights and routes
- Information can be processed as desired

### ***To travel agencies: Travel Agency Marketing Information Data Tape***

- Information on one individual travel agency or travel agency chain
- Information on all air, car and hotel bookings
- Available on weekly or monthly basis

### ***Benefits to travel agencies :***

- Follow-up on agency activity
- Chain office behaviour analysis
- Clients buying behaviour
- Provides contract monitoring

## **How to proceed**

### ***Airlines:***

- Become an AMADEUS Participating Carrier
- Contact your AMADEUS Marketing account manager

### ***Travel agency:***

- Become an AMADEUS Subscriber
- Contact your local AMADEUS representative (National Marketing Company)

## **INFORMATION SYSTEM MANAGEMENT FOR TOURISM (SIGRTT) DESCRIPTION AND OBJECTIVES**

**Mrs Maria Elisa Almeida  
Direcção Geral do Turismo**

### **Introduction**

In the actual context of the Portuguese tourism, the intention is to stimulate a diversified offer through the investment in new products, from which we emphasise sports, religious and health tourism as well as in the rural environment.

With this objective in mind, the Direcção Geral do Turismo (DGT) proposes to reinforce its action in the tourism offer planning scope, by adopting tools that will enable the development of an efficient and well founded action. The Tourism Resources Inventory (IRT) appears then, as a source of data processed information that will allow DGT to study and create new tourism products and to carry out the classification of tourism places and locals, thus becoming an essential element of tourism planning, of territory assortment, tourism definition for each region and guiding the investments to be made.

IRT is an advanced Data System that, besides being a basic support to the procedures in the tourism area assortment, is also a global reference schedule in the promotion of national tourism products, covering an enormous source of multi-sectorial interesting information available to the general public, to tourism operators and other public or private institutions, in the sector.

Supported by the most advanced data processing technologies. IRT was designed according to the latest Data Processing trends, in an extremely rapid technological evolution background and of global communication and integration, aiming at the implementation of a powerful solution for the present and short term future.

### **System Modules**

1. As the central core of the system we should refer that the Tourism Resources Data Base enables the storage, management and availability of a vast set of data elements regarding the national tourism resources universe, organised in 190 different types with separate information structures. This subsystem allows the management of remote accesses to the data base and the updated maintenance of data regarding each tourism resource, being DGT responsibility the task of centralising and validating all data in the Data Base.

2. The geo-referred data module allows the management and production of thematic letters on tourism resources, directly inter-connecting information in the Data Base with a digital cartographic base. This sub-

system allows the association of the corresponding thematic symbols to the alphanumeric data, to visualise each resource on the cartographic base and to produce several kinds of thematic maps.

3. The Research and Requests subsystem purpose is to allow local or remote access to IRT information, in an efficient and fast way, availing a graphic interface guided by objects, including the necessary interaction devices to formulate and process the most different research criteria, for the selection of resources sets, with individualised access to each resource, or to create statistical graphics or to issue lists.

The access to the IRT data base will also be done through an interactive appliance, integrated in multimedia kiosks, which was designed and produced according to an anthropocentric approach, aiming at an easy utilisation by the target public.

This equipment was designed in a modular way and we foresee its evolution to information and sales stands, where among other facilities, it will process services payment, the use of hybrid cards, printers, a RDIS telephone and video-conference.

4. Finally we will refer to the most innovative module that integrates a strong will include a multilingual interface, close to the colloquial language, for users who are no experts in data processing, supported by intelligent syntactical and semantic interpreters and validators. In parallel, the system will allow the advising of adequate tourism routes to each tourist characteristics. This adequacy will result from the meshing of three vectors - the group of social-cultural variables that characterise the tourist, the motivations that define a type of tourist behaviour and the interests, thematic variables that allow the framing of a tourist in a certain type of tourism resources.

After this global presentation, I give the word to Eng<sup>o</sup> João Matias of INESC, the organisation which has developed all the components for this system.

Eng<sup>o</sup>. João Matias will proceed with the technical presentation of the system, and will be available for any clarification you may need.

## PORTUGAL'S TOURISM RESOURCES INVENTORY

**Mr João Matias**

### What is "IRT - Touristic Resources Directory"

IRT is a multimedia information system of Tourist Resources, implemented by portuguese Directorate General for Tourism (DGT) that allows the survey of new touristic products, national or regional, as well as the assortment of sites and touristic places. It's use could be extended to a valuable element in the touristic planning, territory arrangement, definition of each touristic region and the directioning of investments.

### What is a Tourist Resource

Touristic Resource is a whole natural element, human activity or its product that, by its beauty and interest, suggests the visit of people, the occupation of their leisure time and the fulfilment of their staying.

### IRT Scope

- Covers up to 190 different types of touristic resources.

Tourist Resources	Patrimony Activities and Facilities	Natural Cultural Cultural Business Leisure
Secondary Resources	Activities Facilities	Leisure Tourism Transportation Social infrastructures

- More than 55 000 resources registered.
- Covers the portuguese territory with information based on geographical administrative and tourist organisation.
- Multimedia information for each resource.

## **Information System Management for Touristic Resources (SIGRT)**

The SIGRT has been developed and established, assuming the perspective of its use in a rapid short-term technological evolution.

SIGRT is an open system involving servers with Unix operating systems, relational data base management systems, PC's with MS-Windows and multimedia technology under a client-server architecture.

### **Components of SIGRT**

#### ***Touristic Resources Management***

It allows the storing and management of a wide information complex referred to the universe of all national touristic resources. The survey was carried out by DGT and consists of 190 different types, each with its own information structure.

This sub-system allows to DGT the daily maintenance of information according to each Touristic Resource in the national universe. The information can be alphanumeric, image, video or audio.

#### ***Search and Requests***

It allows the remote or local access to the IRT information in an easy and efficient way within a graphic interface, object-oriented, that includes the required interaction mechanisms to the definition and processing of the widest research criterion to the selection of resource sets, with individualised access to each resource, either to graphic statistics or report printing. This sub-system will include in a medium term a multilingual interface, very close to the original language, destined to non informatic experts, supported by interpreters and intelligent syntactic and semantic validation.

#### ***Management and Production of Maps***

It allows the management and production of thematic maps of touristic resources. This sub-system links the data base of touristic resources and a cartographical data base with maps at a scale of 1:25000. It allows to associate thematic symbology to the resources and visualise them on cartographical basis and to product different kinds of thematic maps. (This sub-system is under development)

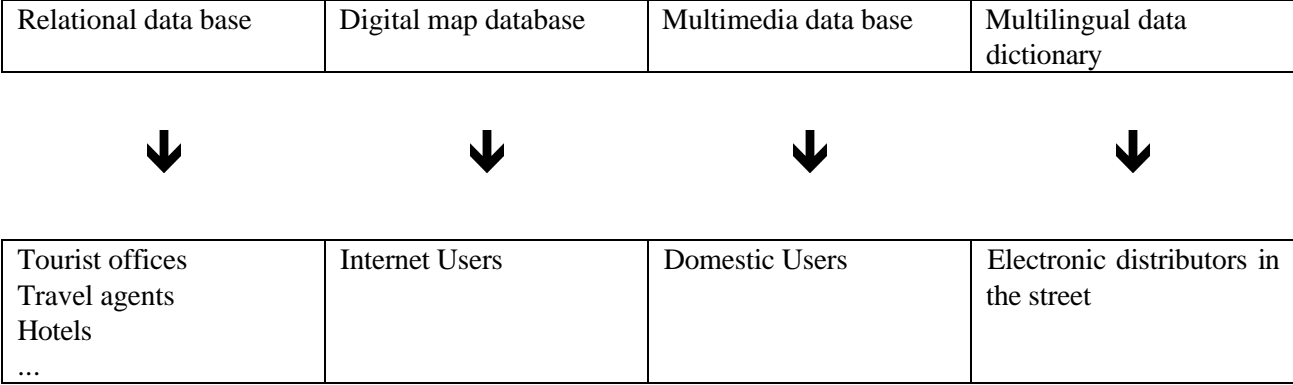
#### ***Multimedia Information Points - Kiosks***

They allow the remote access to the IRT information, as well as other public utility informations, using multimedia technologies, advanced interaction methods and technics and advanced data communication systems. The given information will be alphanumeric, geo-referenced graphics, high resolution image, stereo audio system and digital video, allowing also printable reports.

This equipment has been developed in a modular form, foreseeing the possibility of evolving to Points of Information and Sales, where other performances such as service payments, hybrid card utilisation, laser

printers, RDIS telephones or video-conference will be available. They are also capable of being to a wider connection to other private/public operators, providing multiple information resources.

**Comprehensive Multi-Paradigm Information System**



This project by the General Directorate for Tourism has taken four years to complete and an investment of US\$ 1.5 million.



## **DEVELOPMENT OF TOURISM IN THE CZECH REPUBLIC**

**Marie Vitáková**  
**Ministry of Economy**

The former Czechoslovakia underwent profound political and economic changes in November 1989. The Czech Republic was then part of the Federal Czech and Slovak Republic. It became an independent State on 1 January 1993.

After 1989, tourism became one of the growth areas. It was one of the first sectors to introduce small-scale and large-scale privatisation of State property. A vast range of accommodation and restaurants has sprung up, along with a growing number of travel agencies. Foreign capital is also involved in the privatisation of tourism facilities. Large hotel chains (Renaissance, Holiday Inn, Hilton, Moevenpick) and tour operators (American Express, Thomas Cook) are now operating in the Czech Republic.

The development of tourism since 1989 can be charted by the following figures. At \$3 billion in 1995, foreign currency receipts from tourism were almost 6 times the 1989 figure, and the surplus was roughly \$1.2 billion. Arrivals of foreign visitors have more than quadrupled. There were 98 million visitors in 1995, and 15 per cent were foreign tourists spending at least one night in the Czech Republic.

Czechs made almost 45 million trips abroad in 1995, about five times as many as in 1989. This figure includes Czechs working in Germany and day-trippers on sight-seeing or shopping trips to neighbouring countries, as well as tourists.

Tourism receipts make a substantial contribution to the Czech Republic's balance of payments. They represent about 17 per cent of exports of goods and services and over 6 per cent of GDP.

In addition to its positive impact on the balance of payments, tourism brings in revenue for central government through value added tax, income tax and corporation tax. Local government also receives revenue from tourism through income tax, property tax and local levies on beds and visits.

The development of tourism is having a beneficial effect on employment in the Czech Republic. Whilst the period 1989-1993 saw falling employment -- down 46 per cent in agriculture and 21 per cent in industry -- the volume of employment in the service sector increased to around 50 per cent of the total labour force (compared with 42 per cent in 1989). There was a 25 per cent increase in jobs in the hotel and restaurant trades and an 11 per cent increase in businesses closely linked to tourism.

The tourism industry consists mainly of small firms employing 25 people or less. According to the statistics from the trade register, there are 45 000 tourism businesses (20 per cent of which are corporate bodies of some kind). Of these, 10 per cent are in the travel agency or interpreter-guide business, almost 20 per cent in the hotel business and the remainder in catering. There are over 4 000 licensed tourism operators.

Tourism in the Czech Republic is mainly concentrated in the large towns and cities and has a cultural and architectural bias. On average, foreign tourists spend about 4 days in the Czech Republic. Prague offers the widest choice of cultural and historic attractions and is far and away the main tourist destination. But the Czech Republic also has scenic countryside (protected national parks cover 12 per cent of the country) and offers a variety of tourism activities: shooting, fishing, rural tourism, cycle touring, hot springs and spas, etc. It should be noted that the country has 4 UNESCO heritage sites (the historic centre of Prague, the towns of Telc and Český Krumlov and the church at Zdár nad Sázavou).

The economic changes and the development of tourism after 1989 have led to an increase in the number of hotel facilities. The Czech Republic now has in the region of 450 000 beds. Prague has hotel facilities offering 40 000 beds, 5 times as many as in 1989. Hotels account for about two-thirds of the total accommodation in Prague (where there are currently over 200 hotels, most of them three-star).

The Ministry of Economic Affairs is responsible for promoting and helping to expand tourism in the Czech Republic in general, within a strict framework of protecting and enhancing the environment. The key actors in tourism development are the tourism businesses.

Tourism businesses can apply for aid under the programmes implemented by the Czech-Moravian Development and Guarantee Bank, the main ones being START, ZÁRUKA and REGION. Since 1992, tourism operators can obtain interest rebates on bank loans or a guarantee on favourable terms. Agricultural service-providers wishing to expand into rural tourism are eligible for financial assistance from the Ministry of Agriculture under its subsidies scheme. Financial assistance mostly takes the form of loan guarantees, interest rebates and, in the case of farmers, long-term interest-free loans.

One of the major sources of funding for tourism investment projects in the Czech Republic is the PHARE CBC (*Cross-Border Co-operation*) funding for projects to promote cross-border co-operation with Austria and Germany.

Assistance for cross-border co-operation with these two countries is expected to total *Ecu 155 million over the period 1995-1999*. Ecu 30 million are earmarked for projects within the Czech Republic involving collaboration with Austrian experts in marketing, environmental protection and groundwork for the development of rural tourism in South Moravia.

A *network of cycle touring tracks* has recently been completed near the Lipno dam in the Elbe valley (Liberec, Jablonec nad Nisou and Decín regions) and strengthens ties with Poland and Germany (Saxony). It will give impetus to plans by the Czech Tourism Club to mark out cycle touring routes throughout the country.

The PHARE programme is actively involved in modernising the infrastructure in the border regions by building waste water treatment plants and piping systems, reducing emissions, etc..

Assistance to the *National Training Fund* is another way in which the PHARE programme is involved in developing tourism. The Fund can offer grants of up to 60 per cent for training courses for local authority representatives and individuals wanting to set up in rural and farm tourism.

The foreign aid centre in the Ministry of Economic Affairs is planning -- in the framework of multilateral assistance to the Czech Republic -- *to conduct a market survey on the development of tourism* that will help ensure that the sector complies with EEA norms and practices and the EU White Paper on integration.

In order to promote tourism and to conduct market surveys for tourism businesses and for local authorities, the Ministry of Economic Affairs has created and established a Central Tourism Office.

The Czech Central Tourism Office was set up on 1 April 1993 to promote awareness abroad of the varied tourism opportunities that the country can offer, and to carry out market surveys for the tourism industry and regional authorities. It operates in conjunction with its contractual partners (travel agencies, hotels, etc.), with the Office of Overseas Czech Centres in the Ministry of Foreign Affairs, tourism associations, the Czech Statistics Institute, regional authorities and other tourism promotion bodies.

To promote tourism in the Czech Republic, the Central Tourism Office issues foreign language documentation, organises mass-media advertising campaigns at home and abroad, takes part in tourism promotion fairs and exhibitions, and produces video materials. It is in contact with the media, arranges press conferences, represents Czech tourism at foreign events and helps the regions to develop their tourism products. The results of the survey on tourism in the Czech Republic and abroad provide guidance for the tourism industry. The Central Tourism Office is involved in setting up the national tourism information system.

In conjunction with the Office of Overseas Czech Centres, it runs agencies in Berlin, Vienna, London and New York. It is in contact with the Czech-Canadian Chamber of Commerce in Toronto and with other operators in Tokyo and Milan. It has plans to open centres in Brussels and Paris.

The Czech Central Tourism Office is financed by the Ministry of Economic Affairs and to a lesser degree by its contractual partners. It balances its budget in terms of expenditure and receipts.

The association of tourist information centres is responsible for tourism policy in the regions. The Central Tourism Office works in collaboration with the trade associations, service providers and regional bodies.

It is clear the prospects for tourism in the Czech Republic depend substantially on economic conditions there and elsewhere. The expected upturn in Europe should have a positive effect. The economic reforms under way in the Czech Republic will produce a rich and varied tourism supply and bring about changes in society which will affect movements of Czech and foreign tourists.

The domestic structure of Czech tourism is set to change, for all three types of journey -- travel for pleasure, business or transit. Most journeys will be by road, and the car will remain the most popular mode of transport. The introduction of new air links and the modernisation of Prague airport will affect the level of road traffic. The country's motorways will be connected to the international motorway network.

In terms of outward tourism, the Czech Republic will continue to be an attractive market. It is anticipated that the number of departures will level off and that there will be a shift towards long-stay holidays.

Prague will doubtless remain the chief focus for tourism. However, the wealth of potential elsewhere in the country will encourage some decentralisation of supply to other towns, sites and regions.

The results so far demonstrate that tourism, as it is developing in the new political, economic and social climate, is set to become a highly efficient and profitable sector in the Czech economy.



## **THE ECONOMIC SIGNIFICANCE OF TOURISM - COMPARING CANADA AND WORLD TRAVEL & TOURISM COUNCIL ESTIMATES\***

**David Wilton, Professor, University of Waterloo,  
Scott Meis, Manager, Research, Canadian Tourism Commission  
Sophie Joyal, Research Analyst, Canadian Tourism Commission,**

*\* This paper is based on a February 1996 Report prepared for the Canadian Tourism Commission entitled 'A Comparison, Explanation, and Reconciliation of the Different Estimates of the Economic Significance of Tourism in Canada by the WTTC and Statistics Canada in the Tourism Satellite Account' (authored by David Wilton). The WTTC issued a lengthy Response to a May 1995 version of this CTC Report and the author prepared a Reply to this WTTC Response. Readers can obtain a copy of the February 1996 CTC Report, the WTTC Response, and the author's Reply from Scott Meis, Manager, Research, Canadian Tourism Commission, 235 Queen Street, Ottawa, Ontario, K1A 0H6 (phone (613) 954-3909; fax (613) 954- 3826; e-mail Meis.Scott@ic.gc.ca). The authors of this paper would like to thank Jocelyn Lapierre of Statistics Canada for his helpful comments.*

### **I. Introduction**

Recently two organisations have produced a set of estimates to measure the size, scope, and structure of tourism in Canada. In 1993 the World Travel and Tourism Council (WTTC) released country-specific data on travel and tourism for 24 OECD countries, Canada included; the WTTC estimates were developed by the Wharton Economic Forecasting Associates Group (hence forward referred to as WEFA). In 1994 Statistics Canada released the first report of the Tourism Satellite Account (TSA), which provides detailed information on Canadian tourism in 1988.

As shown in Table 1, a quick comparison of the WTTC and TSA 'estimates' for Canadian travel and tourism expenditures in 1988 reveals substantial differences (the 1988 WTTC data can be found in the 1995 WTTC Report (Research Edition) TRAVEL & TOURISM, pp. 99-101). According to WTTC, total travel and tourism expenditures in Canada were C\$89.9 billion in 1988 (WTTC uses the terminology 'gross output' rather than 'total expenditures'). In the TSA, tourism expenditures in Canada total only \$30.3 billion. Based on these expenditure estimates, the WTTC states that travel and tourism accounts for 13per cent of Canadian GDP and the TSA implies that tourism (as a direct economic activity) represents 2.5per cent of Canadian GDP at factor cost. The major objective of this study is to identify, specify, and explain these huge differences between the WTTC and TSA estimates of total travel and tourism.

At the outset it must be noted that the objectives and methodology of WTTC are very different from those of the TSA. The WTTC is a global coalition of Chief Executive Officers from transportation, accommodation, catering, recreation and travel service companies. The objective of the WTTC, as stated in its 1993 Report TRAVEL & TOURISM, is "to convince governments of the enormous contribution of Travel & Tourism to national and world economic development, promote expansion of Travel & Tourism

*markets in harmony with the environment and eliminate barriers to growth of the industry."* According to the President of WTTC, Geoffrey Lipman, WTTC's aim is *"to find the best methodology for their purpose"* ([A Response by the WTTC](#), page 64). Not surprisingly, the methodology chosen by WTTC produces estimates which quantify "the enormous contribution of Travel & Tourism" (13per cent of Canadian GDP).

WTTC adopts a macro GDP approach and measures the overall economy-wide impact of travel and tourism. Travel and tourism gross output is defined as the sum of expenditures on each GDP component (personal expenditures, investment expenditures, government expenditures and the merchandise trade balance) that can be attributed to travel and tourism, plus business employee travel. WTTC's travel and tourism estimates include both the `direct' effects associated with the production of commodities purchased by travellers plus the `indirect' effects in upstream industries (the production of intermediate inputs such as foodstuffs and fuel), private sector capital expenditures (for new aeroplanes, computers, and hotel buildings), and government current and capital expenditures made in support of travel and tourism (for example, on tourism bureaux and highways). Thus, WTTC's travel and tourism output data include manufactured goods, construction, government services, and Canadian export goods which become part of travel and tourism in a foreign country.

Unfortunately, WTTC does not publish separate estimates for the direct and indirect effects of travel and tourism. WTTC's inclusion of indirect effects means that practically all industries are involved in the production of travel and tourism gross output. In WTTC's methodology there is no Travel & Tourism industry per se. There is only output attributable to travel and tourism. Much of WTTC's travel and tourism output is produced in industries (such as construction and manufacturing) which are not normally considered part of the tourism industry. WTTC's misuse of the term travel and tourism `industry' adds to the confusion that exists between WTTC and TSA data.

To evaluate the relative importance of a specific industry in the economy (relative to other industries), only the direct effects should be included in the industry measure. To evaluate the relative importance of the travel and tourism industry, only the `direct' effects of travellers' expenditures should be included; intermediate inputs, capital expenditures, and government expenditures attributable to travel and tourism should not be included. If the `indirect' effects are included, the sum of all industries' output will far exceed total GDP. The indirect effects in industry A will be `double-counted' as they also constitute direct effects in other industries. While WTTC's methodology of combining the indirect effects with direct effects allows WTTC to produce an "enormous" estimate for the contribution of Travel & Tourism<sup>1</sup>, it does not permit a comparison of the size of WTTC's Travel & Tourism `industry' with published data for other industries (which include only the direct effects). A comparison of WTTC travel and tourism data with data for other industries (such as the mining industry) greatly exaggerates the relative importance of the travel and tourism industry.<sup>2</sup>

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1 In a July 29, 1995 editorial entitled "Faulty Holiday Towers," [The Economist](#) criticized WTTC's methodology of combining the indirect effects with the direct effects: *"The WTTC, a Brussels-based lobby group, claims that tourism is Europe's biggest industry, producing 13.4% of the European Union's GDP... To lump together airlines, farmers who supply vegetables to resort towns, and the construction companies that build hotels is statistical sophistry rather than a basis for policy-making. And to use this as an argument for subsidy is special-interest lobbying at its most naked."*

2 When this problem of comparability with other industries was pointed out, the President of WTTC responded that he thought the *"proper way"* was to include the indirect effects with the direct effects and if other industries *"did not do likewise, that was their mistake"* ([A Response by the WTTC](#), page 70). By implication, other industries (and national statistical agencies) which publish industry data are wrong to exclude the

Finally, WTTC is forced to make a number of methodological assumptions to generate a full set of travel and tourism data for each OECD country each year. Most components of travel and tourism expenditure for countries other than the US and UK are based on detailed information from another country. WTTC's Canadian travel and tourism expenditure estimates are extrapolations of US expenditure data and reflect the structure of travel and tourism in the United States (not Canada).

Canada's interest in developing a Tourism Satellite Account dates back to the 1980's and the Canadian National Task Force on Tourism Data. A 'Proposal for a Satellite Account and Information System for Tourism' was presented by Stewart Wells (Statistics Canada) in June 1991 at the International Conference on Travel and Tourism Statistics held in Ottawa, and was subsequently supported by the World Tourism Organisation (WTO). In October 1994 Statistics Canada released the first report of The Tourism Satellite Account (prepared by Jocelyn Lapierre and Duane Hayes). One of the primary objectives of the Canadian TSA was to measure the economic significance of tourism so that it can be compared as an economic activity amongst other industries in Canada's economic structure (thus putting it on 'equal footing' with other industries).

As an independent national statistical agency, Statistics Canada does not try to convince governments of the enormous contribution of any one particular industry; it does not lobby on behalf of tourism stakeholders. Statistics Canada's TSA provides a measure of the importance of tourism in a manner which is credible and consistent with the principles used in the System of National Accounts for measuring the economic contribution of any industry or economic activity.

The TSA methodology is based on Part One of Recommendations on Tourism Statistics (1994), published by the United Nations and the World Tourism Organisation. The TSA defines total tourism expenditures as the sum of goods and services purchased by tourists and same-day visitors, including business and government employee travellers<sup>3</sup>. Unlike WTTC, the TSA follows UN/WTO recommendations on tourism statistics and excludes certain types of travel expenditures from tourism (such as travel expenditures by students, migrants and diplomats). The TSA includes only expenditures actually made by tourists and same-day visitors, including business travellers, and does not include private and public investment in tourism capital and government expenditures on tourism services in total tourism expenditures<sup>4</sup>.

Using input-output tables, the TSA identifies which industries, both tourism and non-tourism, directly supply the commodities purchased by tourists and same-day visitors, and estimates how much tourism GDP is generated from supplying these commodities. The TSA does not include in its measure of tourism GDP the 'indirect effects' in other industries which result from the use of intermediate inputs by the tourism

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indirect effects. If other industries released data which included all the indirect effects, WTTC's Travel & Tourism industry would likely lose its self-declared position as "*the largest industry in the world.*"

- 3 In the TSA a 'tourism industry' is defined as an industry "if, without tourism, it would cease to exist or would continue to exist only at a significantly reduced level of activity. Air transportation and food and beverage services are two industries which satisfy, respectively, the first and second criteria " (TSA Report, page xxxvii). The expression 'tourism industry' refers to the sum of these individual tourism industries.
- 4 These expenditure outlays are implicitly excluded from UN/WTO definitions of tourism expenditure, which is defined as "the total consumption expenditure made by a visitor or on behalf of a visitor for and during his/her trip and stay at destination."

industry<sup>5</sup> and non-tourism industries (for the direct supply of commodities to tourists and same-day visitors). By estimating only the value added generated by the tourism industry and other non-tourism industries as a result of supplying commodities directly to tourists and same-day visitors, the TSA provides a GDP measure of tourism which is comparable to published GDP figures for other industries in the System of National Accounts (SNA).<sup>6</sup>

In addition to providing estimates for travel and tourism expenditures, the TSA and WTTC also provide estimates for a number of other economic measures (such as value-added, labour income and employment). As shown in the final row of Table 1, WTTC estimates that direct and indirect value-added in all Canadian travel and tourism activities is \$70.7 billion compared to the TSA estimate of only \$13.4 billion in direct tourism value-added (of which \$10.0 billion is in the tourism industry). Since these additional measures of Canadian travel and tourism are based on the estimate for travel and tourism expenditures filtered through an input-output table<sup>7</sup>, it is not surprising that WTTC estimates for these other variables are higher than the corresponding TSA estimates. If the difference between the WTTC and TSA estimates for total travel and tourism expenditures can be explained, the higher WTTC estimates for these other travel and tourism variables are also explained.

In summary, WTTC and Statistics Canada have different objectives and measure very different concepts. Both WTTC and TSA concepts provide useful information about tourism (and travel). The WTTC gross output total tells us how much economy-wide output is attributable to travel and tourism (including both direct and indirect effects). The TSA expenditure total tells us how much tourists and same-day visitors, including business employee travellers, actually spend and the TSA tourism GDP data tell us how much tourism output (value-added) is directly produced within the tourism industry and in non-tourism industries. Unfortunately, WTTC does not publish separate estimates for the direct and indirect effects of travel and tourism and does not identify how much of the direct effect takes place within the tourism industry per se. The TSA measures the direct effects of tourism in the tourism industry (and in non-tourism industries) but does not measure the indirect effects throughout the rest of the economy. However, these indirect effects can be estimated using input-output tables and an economic impact model.

The current WTTC/WEFA and TSA reports represent 'work completed to date.' Both WTTC/WEFA and Statistics Canada are engaged in on-going research and development of tourism data. Travel and tourism shares in WTTC reports are continually being up-dated and refined as additional information becomes available and further research is completed. Subsequent reports of the TSA will not only up-date the data but are also expected to complete the full implementation of a Tourism Satellite Account (as envisioned in Statistic Canada's proposal, presented at the 1991 Ottawa conference). Subsequent reports of the TSA are expected to provide additional data on (i) the indirect effects of tourism expenditures, (ii) the

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5 In the TSA a 'tourism industry' is defined as an industry "if, without tourism, it would cease to exist or would continue to exist only at a significantly reduced level of activity. Air transportation and food and beverage services are two industries which satisfy, respectively, the first and second criteria" (TSA Report, page xxxvii). The expression 'tourism industry' refers to the sum of these individual tourism industries.

6 In the SNA, assessing the GDP of any industry in the economy is done by taking into account only the value added generated by that industry as a result of producing its own output. It does not take into account the value added generated in other industries from supplying intermediate inputs to that industry, nor does it take into account the value added generated in other industries which result from the investments made by that industry.

7 WTTC uses a U.S. input-output table to generate Canadian data; Statistics Canada uses a Canadian input-output table.

GDP resulting from investment in tourism capital, and (iii) the GDP resulting from governments supplying tourism support services.<sup>8</sup>

As stated above, the major objective of this study is to identify, specify (in dollar terms), and explain the \$59.6 billion difference between the published WTTC and TSA expenditure estimates in 1988. There are two main reasons why the WTTC estimate for total travel and tourism expenditures in 1988 is \$59.6 billion higher than the corresponding TSA estimate. First, WTTC includes many travel and tourism expenditures which are not included in the initial TSA report. As noted above, WTTC takes a much broader view of travel and tourism than does the TSA. Second, in most cases WTTC's methodology produces a higher estimate of travel and tourism expenditures for a particular commodity (such as passenger air fares) which both WTTC and the TSA include in their estimate of total expenditures.

The next section of the paper identifies the main categories of travel and tourism expenditures which WTTC includes and the 1994 TSA report excludes. A detailed analysis of the individual components of personal expenditure on travel and tourism included in the WTTC and TSA estimates is presented in section III. Section IV briefly examines the remaining components of travel and tourism expenditures. A summary section concludes the paper.

## **II. WTTC Travel and Tourism Expenditures Not Included in the TSA**

The first column of Table 1 presents WTTC data for the GDP components of total travel and tourism expenditures. The second column presents TSA data in the same GDP format as the WTTC data. For the components of personal expenditure, TSA data consist of purchases of Canadian-produced tourism goods and services by Canadians and non-residents (columns 2 and 4 in Table 1 in the TSA report). TSA data for other commodities and pre-trip expenditures have been put in the recreation and entertainment component of personal expenditure. Net expenditures abroad is, by definition, purchases abroad by Canadians less purchases by foreigners in Canada. Thus, the sum of net expenditure abroad plus purchases by foreigners in Canada less purchases by Canadians abroad is zero. Government employee travel, which is included with business travel in the TSA report, is shown separately in government expenditures on travel and tourism in Table 1.

Over one-half of the \$59.6 billion difference between WTTC and TSA estimates for total travel and tourism expenditures can be explained in terms of expenditures that WTTC includes but the TSA excludes. The major expenditure categories in the WTTC total which do not appear in the TSA are briefly described.

WTTC includes \$12.38 billion of investment in travel and tourism capital in its estimate of total travel and tourism expenditures.

WTTC includes \$11.26 billion in government expenditures relating to travel and tourism, compared to only \$1.41 billion in the TSA. The 1995 WTTC report lists three components of government travel and tourism expenditures: travel expenditures of government employees, government "current" expenditures to provide travel and tourism services to the public, and a portion of government "capital" expenditures on

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8 However, the GDP resulting from these 'indirect' tourism economic activities will not be added to the TSA estimate of tourism GDP; this additional GDP does not represent value added in the tourism industry and non-tourism industries which is generated by supplying goods and services directly to tourists and same-day visitors in Canada.

public infrastructure (such as highways). The last two components (which are not included in the TSA) add \$9.85 billion in government travel and tourism expenditures to the WTTC total.

Turning to the foreign trade component of total expenditures, both WTTC and the TSA include an estimate of the amount that foreigners spend in Canada (exports) and the amount that Canadians spend abroad (imports). In addition, WTTC (but not the TSA) includes an estimate of travel and tourism 'merchandise' exports (\$13.75 billion) and imports (\$11.56 billion). Travel and tourism 'merchandise' exports and imports are internationally-traded products (such as aircraft, building materials, energy, and food supplies) which are used to produce travel and tourism output. For example, a Canadian restaurant might import Scottish salmon to sell to visitors and a foreign restaurant might import Canadian salmon to sell to visitors.

Finally, there are a number of items that WTTC includes in personal expenditure that are not included in the TSA. WTTC imputes a portion of the purchases of new vehicles (and other consumer durables) to reflect the share of the good that is used for travel and tourism. WTTC also imputes a 'rental' value for owned vacation properties and allocates a share of various household expenses, such as utilities, furniture and furnishings, to travel and tourism. As detailed in the next section of the paper (and summarised in Table 3), WTTC includes over \$12 billion in travel and tourism personal expenditure which does not appear in the TSA.

In summary, WTTC includes approximately \$37 billion in travel and tourism expenditures that are not included in the TSA. This represents 62 per cent of the \$59.6 billion difference between the WTTC and TSA estimates for travel and tourism total expenditures. The balance of the \$59.6 billion difference is attributable to higher WTTC estimates for expenditure items which both WTTC and the TSA include.

### ***Are WTTC Estimates for these Additional Expenditures Reasonable?***

The current procedures WTTC uses to produce Canadian estimates of government expenditures on travel and tourism services, investment expenditures on travel and tourism capital, and travel and tourism merchandise trade appear to be producing estimates which are too high. Unfortunately, WTTC's documentation for these Canadian estimates is very incomplete and it is difficult to check their estimating procedures.

WTTC/WEFA have done a considerable amount of research on investment and government expenditures in the United States to determine how much of each can be attributed to travel and tourism. "As an interim measure," WTTC applies US ratios to Canadian expenditure data. The WTTC estimate for Canadian public investment in travel and tourism infrastructure is obtained by multiplying total Canadian government investment expenditures by a US travel and tourism ratio (for total government investment) and by a 2.1156 Canadian travel and tourism intensity factor (compared to 1.0 in the US). Similarly, an estimate for Canadian government expenditures on tourism services is obtained by multiplying non-defence, non-welfare government spending in Canada by a US travel and tourism share and by a Canadian travel and tourism intensity factor.

Given that governments in Canada are larger and provide more non-tourism services (such as health care) than in the United States, WTTC methodology will over-estimate the amount of Canadian government spending on tourism services. The US travel and tourism share will be applied to a relatively larger government sector in Canada.

Applying a 2.1156 travel and tourism intensity factor more than doubles the WTTC estimate for Canadian government travel and tourism expenditures. Besides needing more documentation<sup>9</sup>, this intensity factor which WTTC uses to double T & T estimates in Canada requires much more justification. It seems odd that the Canadian T & T intensity factor is more than twice as large as the US T & T intensity factor. Canada has a relatively lower disposable income level and would therefore tend to consume less income-elastic services (such as travel and tourism). When Canadians do consume T & T services, they are more apt to travel abroad (than Americans). Why is the intensity of travel and tourism more than twice as large in Canada as compared to the United States?

Applying US travel and tourism ratios and Canadian intensity factors to Canadian investment and government expenditure data produces travel and tourism estimates which seem very high. For example, the WTTC estimate of \$11.26 billion for total government expenditures on travel and tourism services exceeds the TSA estimate for total tourism expenditures in Canada on all forms of accommodation, restaurant meals, alcoholic beverages, car rentals, travel agencies, rail and water transportation. The WTTC estimate of \$2.55 billion for government travel and tourism investment in 1988 is 19per cent of total government investment expenditures. Applying the 22.5per cent US travel and tourism share for highway and road construction to Canadian data produces less than \$1 billion in Canadian highway and road construction for travel and tourism purposes. If it is not highways and roads, what is included in the remaining \$1.5 billion in government investment in travel and tourism capital?

A similar problem exists for private investment. The WTTC estimate for private investment in travel and tourism capital (excluding residential investment) is over 15per cent of total Canadian investment in non-residential construction, machinery and equipment. To construct an estimate of private investment in travel and tourism capital, WTTC identifies actual Canadian investment in hotels, motels, aircraft and ferries, and then applies some US ratios and intensity factors. The 1993 WTTC report indicates that in 1991 Canadian investment in hotels, motels, aircraft, and ferries totals \$1.3 billion. The WTTC estimate for private investment in travel and tourism capital in 1991 is over \$13 billion. The application of US ratios and intensity factors to actual Canadian data produces an additional \$12 billion investment in travel and tourism capital. What is in this additional \$12 billion investment in travel and tourism capital (an amount which is almost ten times larger than actual investment in hotels, motels, aircraft and ships)?

WTTC travel and tourism estimates for these additional GDP components, obtained by applying US ratios and intensity factors to Canadian data, appear to be too high. Taken together, WTTC estimates for these additional GDP components (which do not appear in the TSA) sum to about \$25 billion, a total which exceeds the TSA estimate for total tourism personal expenditures in Canada plus inbound tourism expenditures (exports).

### **III. Detailed Analysis of Personal Expenditure**

Personal expenditure on travel and tourism goods and services accounts for over 60per cent of WTTC's estimate of total travel and tourism expenditures and almost 90per cent of total tourism expenditures in the TSA. About one-half of the difference between WTTC and TSA estimates for total expenditures (see Table 1) is attributable to differences in estimates for personal expenditure. Before examining these

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<sup>9</sup> The travel and tourism intensity factor is based on the relative share of value added in hotels, motels and transportation to total value-added in Canada versus the United States. WTTC does not provide the component value-added data used to construct this 2.1156 Canadian T & T intensity ratio.

differences for various categories of personal expenditure, it is useful to review the methodology employed by WTTC and the TSA to generate their estimates.

### ***The TSA Methodology***

The TSA begins with the UN/WTO classification of three forms of tourism: domestic tourism (residents of a given country travelling within this country), inbound tourism (non-residents travelling in a given country), and outbound tourism (residents travelling in another country). The TSA provides separate estimates of personal expenditure desegregated by commodity for these three different forms of tourism (columns 2, 4, and 7 in Table 1 in the TSA). As described in Appendix B to the TSA, the commodity estimates for these three forms of tourism are based on five different surveys containing information on tourism purchases of Canadians travelling in and outside of Canada and non-residents travelling in Canada.

### ***WTTC/WEF: A Methodology***

WTTC does not provide commodity estimates for personal expenditure on the three different forms of tourism. Rather WTTC provides travel and tourism estimates for eight National Income and Expenditure Account (NIEA) categories of personal expenditure. In the National Accounts, aggregate personal expenditure consists of total expenditures by residents on domestic products and on foreign products (imports). Given the nature of available data, the components of personal expenditure in the NIEA are estimated using domestic sales data, which include the purchases of domestic goods and services by residents and by foreigners (exports from inbound tourism). To make the sum of the components (which includes exports, not imports) equal to aggregate personal expenditure (which includes imports, not exports), net expenditure abroad (imports minus exports) is added to the sum of the components of personal expenditure.

To obtain an estimate for travel and tourism personal expenditure, WTTC/WEFA estimates the share of personal expenditure which is 'travel and tourism' and then multiplies NIEA personal expenditure data by this tourism share. "*As an interim measure*" WTTC assumes that Canadian travel and tourism shares are the same as US travel and tourism shares, adjusted for different personal expenditure sub-component weights in Canada (discussed below).

The US travel and tourism shares are based on a detailed US Bureau of Labour Statistics (BLS) Survey of Consumer Expenditures, which includes hundreds of different personal expenditure line items. For each expenditure line item which falls under the broad heading of travel and tourism, WTTC/WEFA estimates the share of that line item which is attributable to travel and tourism. Many expenditure line items, such as airline fares, boat purchases and various expenditures on 'out of town' trips, are assumed to be 100 per cent travel and tourism. Travel and tourism expenditures for each of these BLS line items are then aggregated into the eight NIEA components of personal expenditure.

Canadian travel and tourism shares for the eight NIEA components of personal expenditure are obtained by multiplying the US travel and tourism shares for the BLS line-items (the sub-components) by their respective weights in Canada. To illustrate WTTC's weighting technique, the first component of personal expenditure contains three sub-components: (i) food (F), (ii) alcoholic beverages (B), and (iii) tobacco (T). WTTC has estimated a US travel and tourism share for each of these three sub-components. To determine the Canadian travel and tourism share for the entire component (FBT), WTTC multiplies the US travel and tourism shares for each of the F, B, and T sub-components by their respective Canadian weight in FBT; the weighted sub-components are then added to obtain the travel and tourism share for the entire

component. Rather than using NIEA personal expenditure weights, WTTC uses "weightings" from the Consumer Price Index for each country.

The first and second columns of Table 2 present WTTC's US and Canada travel and tourism shares for the eight NIEA components of personal expenditure (as given on page 15 of The 1995 WTTC Report Methodology, January 1995 Draft). The final column of Table 2 presents Statistics Canada NIEA data for 1988 Canadian personal expenditure on each of these eight NIEA components (in billions of Canadian dollars). In quantitative terms, the most important weighting adjustment is for the last component of personal expenditure. WTTC assumes that the travel and tourism share for miscellaneous personal expenditure (which includes hotels and restaurants) is 119per cent larger in Canada than in the US (.3197 compared to .1459 in Table 2).

There are three major problems with WTTC methodology for estimating Canadian personal expenditure on travel and tourism, one obvious problem and two subtle problems.

1. *Are Canadian and US spending patterns the same?*

Given the very different geography and climate in Canada and the United States, the structure of tourism is quite different in the two countries. Many US residents do not need to purchase airfares and leave the country to escape winter.

Based on data contained in Statistics Canada's Touriscope, in 1988 Canadians made 16.5 million international 'person-trips' of one or more nights (83per cent of this total was to the United States). In Canada, international person-trips are 64per cent of the population. In the United States, the 40.7 million international person-trips in 1988 are only 17per cent of the population. On a per capita basis, international travel is almost four times greater for Canadians than for Americans. Comparing Canadians travelling to the United States with Americans travelling to Canada (on one or more night trips), Canadians stay longer, spend less per day, but spend more in total.

Canadian travellers spend more on airline fares than US travellers. As reported in the 1990 Family Expenditure in Canada survey by Statistics Canada, the average Canadian family spent \$316 on air transportation, which represented .86per cent of total expenditures. The 1990 Bureau of Labour Statistics survey of consumers indicates that the average US family spent US\$ 193 (C\$ 225) on airline fares, which represented .68per cent of total expenditures. In Canadian dollar terms, in 1990 the average Canadian family spent 40per cent (316/225) more on airline fares than the average US family. A comparison of Canadian and US spending patterns in these two 1990 consumer surveys also suggests that Canadians spent proportionately more on accommodation but less on restaurants. As WTTC acknowledges, "*because US Travel and Tourism consumption shares need not be typical of shares in other countries, the next step in the application of this approach is to develop specific consumption shares for other countries*" (WTTC Travel & Tourism Report, 1993, page 41).

2. *If net expenditure abroad is positive, the WTTC estimates will over-state travel and tourism personal expenditures*

The second methodological problem stems from the fact that inbound and outbound tourism expenditures are not the same; net expenditure abroad is not zero. WTTC estimates the travel and tourism share of each NIEA component of personal expenditure using a BLS survey of consumer spending. This survey collects data on all items US residents purchase in the US and abroad (imports). As noted above, in the National Accounts each component of personal expenditure includes purchases of domestic-produced

goods and services by residents and foreigners; exports, not imports, are included. An aggregate 'adjusting' entry consisting of net expenditure abroad is added to the sum of the components to produce the NIEA concept of personal expenditure (which includes imports, not exports). In this NIEA framework, the estimates for the components of travel and tourism personal expenditure do not include resident purchases abroad (imports). If net expenditure abroad is positive, using a consumer survey of residents (which includes imports not exports) will over-estimate the NIEA components of travel and tourism personal expenditure.

To illustrate the problem with using a domestic survey of residents to measure the NIEA components of personal expenditure on travel and tourism, consider the following simple numerical example. Suppose that Canadian visitors (tourists and same-day visitors) spend 60 on commodity j (say restaurant meals) in Canada and 50 outside Canada (outbound tourism, or imports); foreigners spend 30 on commodity j in Canada (inbound tourism, or exports). Non-visitor Canadians spend 100 on commodity j (in Canada). Total consumption of commodity j by Canadians in Canada is  $100 + 60 = 160$ . In the National Income and Expenditure Accounts, total personal expenditure on commodity j in Canada by Canadians and foreigners is  $160 + 30 = 190$ . A survey of Canadian residents reveals that total spending by Canadians on commodity j is  $160 + 50 = 210$ . In a national survey of consumer spending by Canadians, tourism expenditures (110) are 52.4 per cent of total spending on commodity j (210). If you multiply the 190 for personal expenditure on commodity j in the National Income and Expenditure Accounts by 52.4 per cent (from the consumer survey), tourism personal expenditure on commodity j is estimated to be 99.56. But the actual amount of tourism personal expenditure on commodity j is only 90 (60 by Canadians and 30 by foreigners). When tourism imports of commodity j exceed tourism exports of commodity j, a tourism share based on a consumer survey of residents will produce an over-estimate of the amount of personal expenditure on commodity j attributable to tourism (by more than 10 per cent in this numerical example).

If net expenditure abroad is positive (tourism imports exceed tourism exports), the WTTC methodology of using a consumer survey of domestic residents will over-estimate the individual NIEA components of travel and tourism personal expenditure. The TSA methodology of estimating personal expenditures separately for the three forms of tourism (domestic, inbound, and outbound) is more appropriate.

### 3. *Are WTTC's consumer price index weightings appropriate?*

WTTC's Canadian travel and tourism shares are "*translated US*" shares adjusted by a weighting procedure. Rather than using comprehensive National Accounts (NA) weights in this adjustment procedure, WTTC uses non-comprehensive Consumer Price Index (CPI) weights. To obtain Canadian travel and tourism shares for the eight NIEA components of personal expenditure, WTTC multiplies sub-component US travel and tourism shares by their respective weightings in the Canadian Consumer Price Index (CPI).<sup>10</sup>

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10 It must be noted that the numbers WTTC/WEFA uses in their weight adjustment procedure to generate Canadian travel and tourism shares do not always check out. In a February 14, 1995 document entitled 'Derivation of Canadian Travel & Tourism Consumption Shares,' WTTC/WEFA provided the following U.S. T & T shares and Canadian CPI weights for the first personal expenditure component: (i) food 4.75% and .5665, (ii) beverages 5.94% and .3196, and (iii) tobacco 4.35% and .1138. None of the six numbers WTTC/WEFA uses to generate the 5.09% Canadian T & T share for food, beverages and tobacco agree with published data. The three sub-component U.S. T & T shares can not be found in published WTTC reports (for example, the published U.S. travel and tourism share for tobacco is 5.08%, not 4.35%). In fact, these three sub-component U.S. T & T shares are all larger than the U.S. T & T share for the entire component (3.54%), which can not be the case. A check of the official Statistics Canada publication for the Canadian Consumer Price Index reveals that the three Canadian CPI weights listed by WTTC/WEFA are not correct. The CPI weight for food is not 77% larger than the CPI weight for beverages; it is more than 5 times larger.

To the extent that sub-component weightings in the Canadian CPI are different from those in the US CPI, the Canadian travel and tourism share for a particular component of personal expenditure will differ from the US travel and tourism share for that component (see Table 2).

There is a major problem with the use of CPI weightings in the construction of travel and tourism shares. In Canada (and in other countries), the Consumer Price Index is not a comprehensive measure of personal expenditure. As is clearly stated in The Consumer Price Index Reference Paper (February 1989, page 13): "*The CPI takes into account only those goods and services, as listed in Appendix I, that have a price that can be associated with a specific quantity and quality.*" There are many sub-components of personal expenditure in the National Accounts which do not appear in the CPI. For example, the first NIEA component of personal expenditure includes an imputed amount for farm and garden food consumed at home. Since this non-market transaction does not have a specific price, it is not included in the CPI. Compared to the National Income and Expenditure Accounts, the CPI is not a comprehensive measure of personal expenditure. The use of 'non-comprehensive' CPI weightings to calculate travel and tourism shares will bias WTTC's estimates of travel and tourism personal expenditures in an upward direction.

A simple numerical example is provided to illustrate this important problem in WTTC methodology. Suppose that there are five sub-components (A, B, C, D, and E) in one aggregate National Accounts (NA) personal expenditure component (such as miscellaneous personal expenditures). For simplicity, assume that each of these five NA sub-components has an equal weight (.20) in the NA aggregate. Assume that the 'true' tourism share for each NA sub-component is known. For illustrative purposes assume that the tourism shares for the five sub-components are .80, .50, .20, 0 and 0 (sub-components D and E contain no tourism expenditures). Using NA weights for the five sub-components, the tourism share for the aggregate component is .30 (calculated as .20 times the sum of the five sub-component shares .80, .50, .20, 0 and 0).

Rather than using comprehensive NA weights, WTTC uses non-comprehensive CPI weights. Suppose that the CPI does not include sub-component E. The CPI provides a .25 weight for each of the four sub-components A, B, C, and D in this NA aggregate. Using these CPI weights for four sub-components, the tourism share for the aggregate component is .375 (calculated as .25 times the sum of the four sub-component tourism shares .80, .50, .20, and 0). The use of non-comprehensive CPI weights has biased the aggregate tourism share in an upward direction. WTTC multiplies NA data for the aggregate component by this biased travel & tourism share.

Since the CPI is not as comprehensive in coverage as the National Accounts, WTTC's T & T personal expenditure estimates will be biased. Given that (i) the vast majority of travel & tourism services "have a price" and are included in the CPI and (ii) the National Accounts items omitted from the CPI have minimal travel & tourism content, WTTC's T & T estimates are biased in an upward direction.<sup>11</sup>

CPI coverage is most deficient for the miscellaneous NIEA personal expenditure component, which includes the important tourism services provided by hotels, motels, restaurants, and bars. As shown in

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11 WTTC has argued that there is no problem if both the US and Canadian CPI's "*suffer from the same non-comprehensive data problems*" (see pages 6, 40, 44, 46, and 51 in the WTTC Response). This 'two wrongs make it right' argument is wrong. Suppose that two countries "*suffer from the same non-comprehensive data problems.*" If the sub-component travel & tourism shares and NA weights are the same in both countries, WTTC's CPI weighted T & T shares will be biased (upward) to the same extent in both countries. The same non-comprehensive problem in Canadian and U.S. CPI's does not magically eliminate this bias (twin drunks tied together still stagger). Differences in non-comprehensive CPI coverage produce differences in the extent of the (upward) bias.

Table 5, in 1988 Canadian personal expenditure on miscellaneous goods and services totalled \$56 billion, of which \$23 billion was on accommodation, restaurants and bars. While accommodation, restaurants and bars are included in the CPI, most of the remaining \$33 billion in miscellaneous personal expenditure is not included in the CPI. The CPI does not include personal expenditures on bank service charges, life and personal insurance, non-profit organisations (charitable donations), interest on consumer debt, investment charges, legal and accounting services. Given that about one-half of Canadian miscellaneous personal expenditure in the National Income and Expenditure Accounts is not included in the Canadian CPI, using CPI weightings for restaurants, bars and accommodation will greatly inflate the tourism share for the miscellaneous component of personal expenditure.

Page 15 of *The 1995 WTTC Report - Methodology (Draft)* presents WTTC travel and tourism shares for the eight NIEA components of personal expenditure for 24 OECD countries. While there is some minor variation in travel and tourism shares for each of the first seven NIEA components of personal expenditure across the 24 OECD countries, the travel and tourism shares for the miscellaneous component range from a low of 14.59per cent (in the U. S.) to over 50per cent. The average value for the 'miscellaneous' travel and tourism share in the 23 OECD countries (excluding the US) is 31per cent, more than double the corresponding US travel and tourism share. The inappropriate CPI weightings that WEFA applies substantially increase the travel and tourism share for the miscellaneous component of personal expenditure in all OECD countries.<sup>12</sup>

The WTTC travel and tourism share for this important miscellaneous personal expenditure component appears to be over-stated for all OECD countries, compared to the United States. As discussed below, applying sub-component US travel and tourism shares to all of the sub-components of Canadian miscellaneous personal expenditure uncovers only \$9.6 billion in Canadian travel and tourism expenditures, which is \$7 billion less than the \$16.6 billion reported by WTTC. An inappropriate CPI weighting adjustment procedure to 'Canadianise' US travel and tourism shares for miscellaneous personal expenditures appears to have added an extra \$7 billion dollars to the WTTC total for Canadian personal expenditures on travel and tourism.

Table 3 provides a summary of the major factors which explain the \$27.6 billion difference between WTTC and TSA estimates for personal expenditure on travel and tourism. The first row in Table 3 records that \$7 billion (one quarter) of the difference is attributable to WTTC's inappropriate use of CPI weightings to 'Canadianise' the US travel and tourism share for miscellaneous personal expenditure.

### ***The WTTC Components of Personal Expenditure***

To determine why the WTTC estimates for travel and tourism personal expenditure are so different from the TSA estimates, it is necessary to disaggregate the eight NIEA components of personal expenditure into sub- components. Unfortunately, WTTC does not publish sub-component travel and tourism data (for example for passenger airfares and for accommodation) and we are forced to construct sub-component estimates for travel and tourism personal expenditures using WEFA's methodology.

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12 The 1995 WTTC Report (Methodology) provides new U.K. travel and tourism shares based on U.K. data (for the year 1992). Prior to 1995, the U.K. travel and tourism shares were U.S. travel and tourism shares adjusted by U.K. CPI weightings. The new U.K. travel and tourism share for miscellaneous personal expenditures is 26.5%. The old U.K. travel and tourism share for miscellaneous personal expenditures (38.0%) based on U.S. shares and U.K. CPI weightings is 43% larger than the new U.K. travel and tourism shares based on U.K. data.

To generate sub-component 'WEFA methodology' estimates, the sub-components of Canadian personal expenditure data are multiplied by their corresponding sub-component US travel and tourism shares. While some weighting adjustment procedure is necessary if an 'aggregate' component travel and tourism share is applied to personal expenditure data aggregated into major components, no weighting adjustment is necessary if sub-component travel and tourism shares are directly applied to sub-component expenditure data (before aggregation). In WEFA's methodology, the US travel and tourism share for each sub-component (such as airfares) can be applied directly to Canadian personal expenditure data for that sub-component. Throughout this entire section of the paper, the term 'WEFA methodology' estimate refers to Canadian NIEA personal expenditure data for sub-component j multiplied by the WTTC US travel and tourism share for sub-component j (taken from The 1995 WTTC Report - Methodology). These 'WEFA methodology' estimates are produced by the authors, not by WEFA or by WTTC. Since there is a relatively small amount of travel and tourism expenditures in five personal expenditure components, most of the analysis will focus on the two important components (i) transportation and communications and (ii) miscellaneous.

### *1. Food, Beverages and Tobacco*

In determining the US travel and tourism share for food and beverages, WTTC includes some travel and tourism expenditures that the TSA does not include. WTTC estimates that the percentage of food and beverages purchased for visiting relatives and guests is 2.30 per cent of all food and beverages purchased. If we multiply 1988 Canadian personal expenditure on food and beverages (\$48.68 billion) by this US travel and tourism share of 2.30 per cent, we obtain a 'WEFA methodology' estimate of \$1.12 billion for food and beverages purchased for visiting relatives and guests. Since this item is not included in the TSA, \$1.12 billion in the difference between the WTTC and TSA estimates for travel and tourism personal expenditure can be attributed to purchases of food and beverages for visiting relatives and guests (the first entry in Section II of Table 3).

### *2. Clothing and Footwear*

WTTC estimates the share of clothing and footwear which can be attributed to travel and tourism by determining the proportion of leisure wear clothing that is consumed during time spent travelling. WTTC estimates that on average 4.988 per cent of the year is spent on travel and tourism activities and allocates 4.348 per cent of personal expenditure on clothing and footwear to travel and tourism. Applying this 4.348 per cent travel and tourism share to the \$20.155 billion spent on clothing and footwear (see Table 2) produces an estimate of \$.887 billion for this component of personal expenditure. While the TSA includes some unspecified amount of souvenir and sporting clothing in its estimate of other commodities and pre-trip expenses (lines 32 and 33 in Table 1 in the TSA), we include the entire \$.89 billion estimate for travel and tourism personal expenditure on clothing and footwear as the second entry in Section II of Table 3 (items included in WTTC but not included in the TSA).

### *3. Gross Rent, Fuel and Power*

WTTC includes an estimate of imputed rent for owned vacation homes along with an estimate of various expenses associated with vacation homes (such as electricity, fuel oil, natural gas, water, septic tank, and garbage). Data for all of these items are obtained from the BLS survey. As a proportion of total gross rent, fuel and power for all homes, WTTC estimates that 1.65 per cent can be classified as travel and tourism; 1.65 per cent of the \$75.362 billion Canadian personal expenditure on gross rent, fuel and power (see Table 2) amounts to \$1.243 billion. Since the TSA does not (yet) include imputed rent and expenses for

owned vacation properties in total tourism expenditures, we put this \$1.243 billion as the third entry in Section II of Table 3.

#### 4. *Furniture, Furnishings, Household Equipment and Operation*

WTTC calculates that the total value of vacation homes is 2.28 per cent of the total value of all homes in the United States and uses this percentage to estimate the amount of household furniture, furnishings and equipment expenditures attributable to vacation homes and therefore part of tourism personal expenditure. When applied to the \$32.86 billion of Canadian personal expenditure on furniture and household equipment (see Table 2), the estimate for this component of personal expenditure is only \$.749 billion, the fourth entry in Section II of Table 3.

#### 5. *Transportation and Communication*

The largest component of travel and tourism personal expenditure is for transportation and communications. This component accounts for \$13.43 billion of the difference between WTTC and TSA estimates for travel and tourism personal expenditure (in Table 1).

Table 4 presents data for 14 individual sub-components of personal expenditure on transportation and communications. The first column lists the WTTC US travel and tourism share for each sub-component. The second column presents 1988 Canadian NIEA personal expenditure data for each sub-component. The sum of personal expenditures on these 14 sub-components is \$53.186 billion in 1988, which is 98 per cent of total personal expenditure on transportation and communications (\$54.362 billion in Table 2). The third column provides a 'WEFA methodology' estimate for each sub-component, obtained by multiplying Canadian personal expenditure data (column 2) by the US travel and tourism share (column 1); the sum of the individual 'WEFA methodology' estimates is \$19.817 billion. The fourth column presents TSA estimates of travel and tourism personal expenditure by Canadians (in Canada) and by foreigners (exports); the sum of the TSA column equals the \$8.82 billion in TSA personal expenditure on transportation and communications recorded in Table 1.

The first seven sub-components comprise personal expenditures on 'purchased' transportation: planes, trains, buses, taxis, rented vehicles, etc. Applying US travel and tourism shares to disaggregated Canadian data produces a 'WEFA methodology' estimate of \$5.283 billion for these seven sub-components of 'purchased' personal transportation (compared to a TSA estimate of \$4.753 billion). Passenger air transport is the major sub-component in both WTTC and TSA estimates of purchased transportation. In the 'WEFA methodology' estimates presented in column 3 of Table 4, the \$4.137 billion in passenger airfares represents 78 per cent of total purchased transportation; the remaining six sub-components sum to only \$1.146 billion. This 'WEFA methodology' estimate for passenger air transport is \$.855 billion greater than the TSA estimate.

One possible explanation for the extra \$.855 billion in the 'WEFA methodology' estimate for passenger airfares (which is recorded as the first entry in the third section of Table 3) is that WTTC and the TSA assign different travel and tourism shares to transportation personal expenditure. WTTC assumes that 100 per cent of air passenger transport is for travel and tourism. Following the UN/WTO Recommendations on Tourism Statistics, the TSA assumes that "*not all travel constitutes tourism and excludes commuting, travel for purposes of study or work in a new location, as well as by migrants and diplomats or members of the armed forces on assignment*". The TSA includes only 92.1 per cent of the total domestic supply of passenger air transport (\$6.566 billion) in its estimate of tourism expenditure (see Table 1, line 1 in the TSA); \$.519 billion (7.9 per cent \* \$6.566 billion) in passenger air travel expenditure is excluded from

tourism expenditures in the TSA. If most of this excluded passenger air travel is personal expenditure (not business and government expenditures), about one-half of the \$.855 billion difference between the WTTC and TSA estimates for passenger air transport is attributable to the less than 100per cent travel and tourism share assumed by the TSA.

A much more important source of the \$13.43 billion difference between WTTC and TSA estimates for transportation and communications personal expenditure is found in the next six 'owned vehicle' sub-components in Table 4. The 'WEFA methodology' estimate of \$14.199 billion for travel and tourism personal expenditure on owned vehicles is \$10.130 billion higher than the TSA estimate of \$4.069 billion. Private cars (not planes) explain three-quarters of the difference between 'WEFA methodology' and TSA estimates for transportation and communications personal expenditure.

To determine the share of motor vehicle expenses to allocate to travel and tourism, both WTTC and the TSA begin with the UN/WTO definition (clause 9 in Part One of Recommendations for Tourism Statistics): "*Tourism comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes.*" In the TSA, the "*usual environment*" for domestic travel is defined as being within 80 kilometres (or 50 miles) of home. Any travel to a Canadian location under 80 kilometres is not considered to be domestic tourism. No cut-off distance is used for inbound and outbound tourism.

WTTC believes that defining "*usual environment*" in terms of a fixed distance has "*obvious limitations*" and uses a US transportation survey which divides vehicle miles into five different categories: vacation, pleasure, shopping, visiting friends/relatives, and other social/recreational. WTTC assumes that 100per cent of the first two categories (vacation and pleasure) are travel and tourism. A 'pleasure' trip of a few miles is automatically categorised as travel and tourism in WTTC/WEFA's methodology (there is no minimum threshold). WTTC employs the following statistical definition for the usual environment for each of the three remaining categories: "*The usual environment is interpreted to include all trips whose mileage fall within the per trip mileage mean plus two standard deviations*" (1995 WTTC Report (Research Edition) TRAVEL & TOURISM, page 213). Using this procedure, any shopping trip exceeding 58.5 miles, any trip to visit friends and relatives exceeding 480.2 miles, and any other social/recreational trip exceeding 361.7 miles is classified as travel and tourism.

WTTC's three mileage numbers are, however, just as arbitrary as the TSA's one mileage number. Since WTTC is only interested in trips exceeding the mean plus two standard errors, WTTC's procedure resembles a one-tail 97.5per cent confidence level statistical test. 97.5per cent is an arbitrary number (why not 95 or 99). Adding two standard errors is an arbitrary procedure. Why not add 1 or 3 standard errors? And WTTC arbitrarily uses these US numbers to construct travel and tourism shares for transportation personal expenditures in countries as geographically diverse as Iceland and Canada.

WTTC's procedure only has the guise of statistical sophistication. Data for trips are not normally distributed; trip data are truncated to the left (trips can not be less than zero) and skewed to the right (there are some very long trips). If data are not normally distributed, one cannot use conventional standard errors to draw statistical inferences. Given truncated and skewed trip data, it is not appropriate to use conventional standard errors to define the '*usual environment*.'<sup>13</sup>

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13 For similar reasons, researchers who study income distribution (another truncated and skewed distribution) do not define high income earners by adding two standard errors to the mean of the distribution.

Page 214 of the 1995 WTTC Report provides tourism miles for various types of trips. If one counts only vacation and pleasure trips, the travel and tourism share is 17.6per cent of all miles driven. Adding in miles driven on trips exceeding 480 miles to visit friends and relatives brings the travel and tourism share up to 29.6per cent. Adding in shopping trips of more than 59 miles brings the travel and tourism share up to 31.5per cent. Finally, adding in miles on other trips exceeding 362 miles brings the total travel and tourism share to 36.84per cent of all miles driven. In the WTTC estimate, vacation and pleasure driving account for less than one-half of total travel and tourism miles.

WTTC assumes that 36.84per cent of all personal expenditures on motor vehicles (other than for fuel) can be attributed to travel and tourism. Assuming that cars average 5 more miles per gallon in highway driving, WTTC estimates that 31.67per cent of all gasoline purchases are for travel and tourism purposes. Data in the TSA suggest that 25per cent of personal expenditure on vehicle fuel is for tourism.<sup>14</sup> The TSA allocates an even smaller share (16.9per cent) of personal expenditure on vehicle repairs and parts to tourism, and no share of vehicles purchased and vehicle insurance to tourism. Thus the `WEFA methodology' estimates include \$7.316 billion for new vehicles and \$.378 billion for vehicle insurance (based on a 36.84per cent travel and tourism share) which are not included in the TSA (the fifth and sixth entries in section II of Table 3).

Given that WTTC assigns a much higher travel and tourism share to personal expenditure on vehicle repairs and parts, the `WEFA methodology' estimate of \$2.944 billion in Table 4 is \$1.60 billion higher than the TSA estimate of \$1.348 billion. For similar reasons, the \$3.348 billion `WEFA methodology' estimate for vehicle fuel is \$.66 billion higher than the TSA estimate of \$2.684 billion. Taken together, the `WEFA methodology' estimates for vehicle repairs, parts and fuel of \$6.292 billion are \$2.26 billion higher than the TSA estimate of \$4.032 billion (the second entry in section III of Table 3).

What is the appropriate travel and tourism share for motor vehicle use? Clause 60 in Part Two of the UN/WTO Recommendations on Tourism Statistics states that "*auto fuel consumption for tourism travel tends to amount to about 20 per cent of overall auto sales in representative countries.*" If Canada is a "*representative*" country, then one would expect the travel and tourism share for vehicle fuel to be "*about 20 per cent.*"<sup>15</sup> In this context, the WTTC travel and tourism shares of 31.67per cent for vehicle fuel and 36.84per cent for all other vehicle expenses appear very high (even allowing for the fact that WTTC includes some travel which does not correspond to the UN/WTO definition of tourism). The TSA tourism share of 25per cent for personal expenditure on vehicle fuel also appears to be on the high side, whereas the TSA tourism share of 16.9per cent for vehicle repairs and parts may be a little low. Using a more "*representative*" 20per cent travel and tourism share for personal expenditure on vehicle repairs, parts, and fuel would likely result in an estimate of travel and tourism expenditures much closer to the TSA estimate of \$4.0 billion than the `WEFA methodology' estimate of \$6.3 billion.

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14 This estimate is obtained by summing tourism personal expenditure in Canada on vehicle fuel (\$2.146 billion) and tourism exports of vehicle fuel (\$.538 billion) and dividing this total (\$2.648 billion) by NIEA data for personal expenditure on motor fuels and lubricants (\$10.573 billion).

15 Gerald Bailie (Canadian Tourism Commission) estimates that tourism kilometres are 20% of total kilometres driven in Canada.

## 6. *Miscellaneous (includes accommodation and restaurants)*

The second largest component of travel and tourism personal expenditure is miscellaneous expenditure, a component which includes personal expenditure on accommodation, restaurants, and bars. The 12 rows in Table 5 account for all Canadian personal expenditure on miscellaneous goods, including hotels, motels, restaurants, and bars. Multiplying disaggregated Canadian personal expenditure data by the corresponding US travel and tourism share, we are able to identify only \$9.595 billion in 'WEFA methodology' miscellaneous personal expenditure. Given that we have included all Canadian 'miscellaneous' personal expenditure sub-components in our 'WEFA methodology' estimate of \$9.6 billion, the extra \$7 billion in the published WTTC data of \$16.6 billion (see Table 1) for this component of personal expenditure can not be explained. It appears that the large CPI weight adjustment WTTC/WEFA made to 'Canadianise' the US travel and tourism share for miscellaneous personal expenditures increased the value of Canadian travel and tourism expenditures by \$7 billion.

Turning to the sub-components listed in Table 5, the 'WEFA methodology' estimate obtained by multiplying \$20.267 billion Canadian personal expenditure in restaurants and bars by the 31.21per cent US travel and tourism share is \$6.325 billion. This 'WEFA methodology' estimate for tourism personal expenditure on restaurants and bars is \$2.03 billion higher than the TSA estimate of \$4.293 billion (and is recorded as the 3rd entry in Section III of Table 3). The \$2.03 billion higher 'WEFA methodology' estimate for restaurants and bars arises because WEFA's assumes that the travel and tourism share for personal expenditure on restaurants and bars is 31.2per cent (based on US spending patterns), which is 10per cent points higher than the corresponding TSA tourism share.

This 31.2per cent US travel and tourism share for restaurants and bars, which is based on National Restaurant Association data for local/non-local purchases, appears to be far too high. In the BLS survey of US consumer spending, the 1990 ratio of food expenditures on 'out of town' trips plus alcohol expenditures on trips to total 'away from home' food and alcohol beverage purchases is only 12.3per cent (as reported in Appendix A of Measuring the Size of the Global Travel & Tourism Industry, February 1993 WTTC Report). One suspects that 'non-local' may include many people who are neither tourists nor same-day visitors.

Since WTTC assumes a 100per cent travel and tourism share for accommodation, the 'WEFA methodology' estimate for accommodation is equal to the \$2.725 billion in Canadian personal expenditure on accommodation. This 'WEFA methodology' estimate of \$2.725 billion is \$.429 billion higher than the TSA estimate (and is recorded as the fourth entry in Section III of Table 3).

Finally, WTTC includes a small travel and tourism share for personal expenditure on personal care products (including cosmetics), bank service charges, and life/personal insurance to reflect time spent travelling and expenses for travellers cheques and travellers insurance. Applying WTTC US travel and tourism shares to Canadian personal expenditure on these items (see Table 5) produces an additional \$.55 billion in tourism personal expenditure. While some of these tourism expenditures may be included in pre-trip and other commodity expenditures in the TSA, in Table 3 we classify this \$.55 billion as WTTC miscellaneous personal expenditure not included in the TSA.

In Table 1 the miscellaneous personal expenditure category accounts for \$10 billion of the difference between WTTC and TSA estimates for travel and tourism personal expenditure. \$2.5 billion of this \$10 billion difference can be attributed to a much higher 'WEFA methodology' estimate for tourism personal expenditure on restaurants, bars, and accommodation. Another \$.5 billion can be attributed to tourism personal expenditure on miscellaneous goods and services which are included in the WTTC total but are not

included in the TSA (both items are recorded in Table 3). \$7 billion of the \$16.6 billion WTTC total for this component of personal expenditure can not be identified or explained, and is attributed to inappropriate CPI weighting procedures (the first entry recorded in Table 3).

#### 7. *Recreation and Entertainment*

As reported in Table 1, the \$8.29 billion WTTC estimate for travel and tourism personal expenditure on recreation and entertainment is \$2.18 billion higher than the TSA estimate of \$6.11 billion. Unfortunately, it is not possible to identify the source of this \$2.18 billion difference. Neither the TSA nor the WTTC estimate for recreation and entertainment personal expenditures can be disaggregated into their underlying sub-components (for further discussion, see February 1996 CTC report).

### **Summary of Personal Expenditure Analysis**

As shown in Table 1, the \$54.23 billion WTTC total for travel and tourism personal expenditure is \$27.59 billion higher than the \$26.64 billion estimate in the TSA. Table 3 provides a summary of the major factors which explain the difference between the WTTC and TSA estimates for travel and tourism personal expenditures.<sup>16</sup>

1. \$12.6 billion of the \$27.6 billion difference between WTTC and TSA estimates for personal expenditures can be attributed to travel and tourism expenditures which WTTC includes but which the TSA excludes (see Section II of Table 3). Over half of this \$12.6 billion results from WTTC including a travel and tourism share for the purchase of new vehicles. Most of these travel and tourism expenditures included by WTTC but currently excluded in the TSA can be defended.<sup>17</sup> However, the inclusion of *some* of the tourism personal expenditure items included in the WTTC total is debatable.<sup>18</sup>
2. \$7.8 billion of the \$27.6 billion difference between WTTC and TSA estimates for personal expenditures can be attributed to the fact that 'WEFA methodology' estimates for particular commodities are higher than TSA estimates (see Section III of Table 13). As discussed above, WTTC methodology will tend to over-estimate the components of travel and tourism personal expenditure.

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16 The items listed in Table 3 sum to \$27.34 billion, which is 99% of the \$27.59 billion difference between the WTTC and TSA estimates for total travel and tourism personal expenditures.

17 The 1994 TSA report states that "*due to a lack of information, several expenditure categories are left out of tourism demand for the time being.*" As defined in the UN/WTO Recommendations on Tourism Statistics, tourism accommodation includes owned vacation dwellings and accommodation provided without charge by relatives or friends. Thus, an estimate for imputed rent, furnishings, and operation of owned vacation properties should be included in tourism personal expenditure. A similar argument can be made for including an estimate for the use of owned motor vehicles for travel and tourism.

18 For example, WTTC includes a travel and tourism share (based on the amount of time spent travelling) for tobacco, personal care products and cosmetics, which adds \$.7 billion to travel and tourism personal expenditure (about the same amount that Canadians spend on Canadian hotels rooms and hotel bars). However, people purchase tobacco, personal care products, cosmetics, clothing footwear, newspapers, etc. irrespective of whether they are tourists (or same-day visitors) or not.

3. WTTC's use of an inappropriate CPI weighting procedure to 'Canadianise' US travel and tourism shares biases their travel and tourism expenditure estimates in an upwards direction by \$7.0 billion.

#### IV. Imports, Exports, and Business Employee Travel

In both the TSA and WTTC/WEFA methodology, the estimate for (inbound) travel and tourism exports is an integral part of total tourism expenditures but the estimate for (outbound) tourism imports is not part of the calculation of tourism expenditures.<sup>19</sup>

The TSA estimates that tourism exports are \$6.535 billion and WTTC estimates that travel and tourism exports are \$6.989 billion. Compared to other categories of expenditures, this is a relatively small difference (the WTTC estimate is \$.454 billion, or 7per cent, higher than the TSA estimate). The WTTC estimate for 1988 tourism exports is only 1per cent higher than the \$6.894 billion total for international travel receipts recorded in the Canadian Balance of Payments. Besides tourism and business travel, the Canadian Balance of Payments also includes international travel receipts from crews, students, seasonal workers, diplomats, and migrants. Following the UN/WTO Recommendations on Tourism Statistics, the TSA has excluded these additional items from tourism expenditures. Thus, the TSA estimate for inbound tourism exports should be slightly lower than travel receipt data in the Canadian Balance of Payments (which it is).

While there is not much difference between the WTTC and TSA estimates for travel and tourism exports, there is a \$5.25 billion difference between WTTC and TSA estimates for business employee travel. The TSA estimates that business travel expenditures in Canada total \$6.189 billion (this total does not include government employee travel). WTTC estimates that Canadian business travel is \$11.44 billion Canadian dollars, an estimate which is almost twice as large as the TSA estimate.

The WTTC methodology for estimating business employee travel is described in the 1993 WTTC Report.<sup>20</sup> Data on page 58 of this 1993 WTTC report suggest that WTTC applied a factor of 1.325 to the sum of Canadian data for business employee expenditures on airlines, hotels, and car rentals. If we divide the WTTC estimate for total business employee travel of \$11.441 billion in 1988 by this 1.325 factor, the WTTC estimate for the sum of Canadian business employee expenditures on airlines, hotels, and car rentals must be \$8.635 billion. But the total domestic supply of these three items sums to only \$10.253 billion (as shown in Table 1 in the TSA). Since both the TSA and WTTC agree that inbound tourism exports are at least \$6.5 billion (\$2.077 billion of which is passenger airfares, hotels and car rentals in the TSA), the 'net of tourism exports' domestic supply of passenger air fares, hotels and car rentals is about \$8.2 billion (10.253 - 2.077). Without even considering personal expenditure, the WTTC estimate of \$8.635 billion for business employee expenditure on airlines, hotels, and car rentals exceeds the domestic supply. The sum of the WTTC expenditure parts appears to be substantially greater than the whole Canadian supply.

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19 In Table 1 of the TSA, the \$30.34 billion in gross tourism expenditure consists of the sum of business expenditure in Canada (column 1) plus personal expenditure in Canada (column 2) plus inbound tourism exports (column 4). Given that these three columns measure expenditures in Canada (and do not include tourism imports), it is not necessary to subtract tourism imports (in column 7) from the \$30.34 billion total.

20 There is insufficient documentation in the 1995 WTTC Report to assess WTTC's current procedure for estimating Canadian business employee travel expenditures. It is unclear which procedure WTTC used to estimate Canadian business employee travel expenditures for the year 1988.

Unlike Canada's TSA, WTTC does not publish disaggregated demand and supply data for various tourism commodities (such as hotel accommodation), nor does it publish demand and supply data for 'the tourism industry.' WTTC's gross T & T output is the sum of GDP expenditure components (demand data) that can be attributed to travel and tourism. As discussed above, WTTC's data include both the direct and indirect effects of travel and tourism. WTTC's supply data (for example, for value-added, income, and employment) are obtained by multiplying expenditure data by an input-output table. By arithmetic, WTTC supply equals WTTC demand. WTTC's Canadian 'arithmetic' supply data lack Canadian content and credibility. WTTC creates Canadian expenditure data from US T & T shares inappropriately weighted, and then filters this 'Canadian' expenditure data through a US input-output table to obtain the 'Canadian' supply of T & T output.

WTTC advertises its research as "*the methodological equivalent of the future National Satellite Accounting System for Travel & Tourism*" (page 5 in the 1995 WTTC Report). Tourism satellite account data become justifiable and credible when independent demand and supply data for individual commodities (such as hotel accommodation) are internally consistent and balanced. WTTC does not demonstrate that their Canadian travel and tourism expenditure (demand) data are consistent with independent Canadian supply data. In fact, WTTC provides no independent Canadian supply data and WTTC's Canadian expenditure estimates appear to exceed domestic Canadian supplies. WTTC must develop internal consistency checks in its methodology to demonstrate that its expenditure estimates do not exceed domestic supplies.

## **V. Summary of Major Conclusions**

Based on estimates prepared by the WEFA Group, WTTC reports that total travel and tourism expenditures in Canada were \$89.9 billion in 1988. The Tourism Satellite Account (TSA) released by Statistics Canada records \$30.3 billion in tourism expenditures in 1988, \$59.6 billion less than the total reported by the WTTC.

WTTC and the TSA measure two different concepts of travel and tourism. WTTC adopts a macro GDP expenditure approach to defining travel and tourism expenditures. Each of the GDP expenditure components in the National Accounts, including capital and government expenditures, is examined to determine how much of that component can be attributed to travel and tourism. Much of WTTC's travel and tourism output is produced in industries (such as construction and manufacturing) which are not normally considered part of the tourism industry.

The TSA, in its current stage of development, has a narrower focus and includes only expenditures made by tourists and same-day visitors, including business employee travellers. Unlike WTTC, the TSA follows UN/WTO recommendations on tourism statistics and excludes some forms of travel (for example, by migrants, students and diplomats). The TSA measures the direct effect of tourism in both tourism and non-tourism industries, and does not include indirect effects (for example, in the manufacturing and agricultural sectors) in its estimates. Comparing travel and tourism data in WTTC reports to tourism data in the TSA is like comparing pineapples to apples: the names are similar but there is a lot more in the WTTC total than in the TSA total.

This study has identified, specified (in dollar terms), and explained \$57.5 billion of the \$59.6 billion difference between the WTTC and TSA estimates for travel and tourism expenditures in 1988. There are three major sources for the difference between the WTTC and TSA estimates of travel and tourism expenditures:

1. WTTC has included \$37 billion in travel and tourism expenditures which are not included in the TSA.
2. WTTC estimates are \$13.5 billion higher for tourism expenditures included in the TSA.
3. WTTC's inappropriate use of CPI weightings to adjust US travel and tourism shares has increased travel and tourism miscellaneous personal expenditures by \$7 billion.

Each source will be briefly reviewed.

The \$37 billion in travel and tourism expenditures which are included in the WTTC total but not included in the TSA total consist of the following 10 items (the WTTC estimate for each is included in parentheses): investment in travel and tourism capital (\$12.38 billion), government current expenditures on travel and tourism services and capital expenditures on public infrastructure (\$9.85 billion), net travel and tourism merchandise trade balance (\$2.19 billion), personal expenditure on vehicles (\$7.32 billion), imputed rent, fuel and power for owned vacation property (\$1.24 billion), purchases of food and beverages for visiting relatives and guests (\$1.12 billion), clothing and footwear (\$.89 billion), furniture and household equipment for owned vacation property (\$.75 billion), vehicle insurance (\$.38 billion) and other personal expenditures (\$.88 billion). As discussed in Sections II and III, WTTC estimates for many of these travel and tourism expenditures (which are not in the TSA) appear to be too high. In particular, the \$22.3 billion that WTTC estimates for the first two items, obtained by applying US ratios and intensity factors to Canadian investment and government expenditure data, seems very high.

WTTC estimates that the value of the tourism expenditures included in the TSA is \$13.47 billion higher than that reported by the TSA. As discussed in Section III, WTTC's methodology will produce biased estimates of personal expenditures on travel and tourism. The major TSA tourism expenditures which appear to have a higher value in WTTC reports are the following (the amount by which the WTTC value is estimated to exceed the TSA value is given in parentheses): business employee travel (\$5.25 billion), personal expenditure on motor vehicle fuel, repairs, and parts (\$2.26 billion), personal expenditure on recreation and entertainment (\$2.18 billion), personal expenditure on restaurant and bars (\$2.03 billion), personal expenditure on passenger air fares (\$.86 billion), tourism exports (\$.46 billion), and accommodation (\$.43 billion). WTTC estimates for business employee travel and for personal expenditure on restaurants and bars are implausibly high and inconsistent with other data. The higher WTTC estimates for personal expenditure on vehicle fuel, repairs, and parts stem from WTTC's assumption that 36.84 per cent of vehicle use is attributable to travel and tourism (in the TSA the tourism share for personal expenditure on vehicle fuel is 25 per cent). The higher WTTC estimates for passenger air fares, accommodation, and tourism exports are largely attributable to WTTC's inclusion of all travellers in its estimates.

Finally, WTTC's inappropriate use of 'non-comprehensive' CPI weights to 'Canadianise' US travel and tourism shares increases travel and tourism expenditures. In particular, WTTC more than doubled the Canadian travel and tourism share for miscellaneous personal expenditure (from 14.59 per cent to 31.97 per cent), which generated an additional \$7 billion in Canadian travel and tourism personal expenditure. A disaggregation of the miscellaneous component of personal expenditure into its various tourism sub-components (such as hotel accommodation, restaurants and bars) does not reveal the source of this additional \$7 billion in travel and tourism personal expenditure in the WTTC total.

## VIII. Reference Documents

*Measuring the Size of the Global Travel & Tourism Industry*, World Travel and Tourism Council, February 1993

*The 1993 WTTC Report - Research Edition: TRAVEL & TOURISM, A New Economic Perspective*, World Travel & Tourism Council, 1993

*The 1995 WTTC Report Methodology*, World Travel & Tourism Council, January 1995, Draft

*The 1995 WTTC Report - Research Edition: TRAVEL & TOURISM, A New Economic Perspective*, World Travel & Tourism Council, 1995.

*The Tourism Satellite Account*, Technical series Number 31, National Accounts and Environmental Division, Statistics Canada, 1994

*Recommendations on Tourism Statistics*, United Nations and World Tourism Organisation, New York, 1994

*A Proposal for a Satellite Account and Information System for Tourism*, a discussion paper delivered at the Ottawa International Conference on Travel and Tourism Statistics, Statistics Canada, May 1991

*National Task Force on Tourism Data, Final Report*, Ottawa, March 1989

*National Income and Expenditure Accounts, Annual Estimates 1982-1993*, Statistics Canada, 1994

*Touriscope*, Statistics Canada, Catalogue 66-201, 1988

*The Consumer Price Index Reference Paper*, Statistics Canada, Catalogue 62-553 Occasional, February 1989.

*Family Expenditure in Canada*, Statistics Canada, Catalogue 62-555, 1990

*A Comparison, Explanation, and Reconciliation of the Different Estimates of the Economic Significance of Tourism in Canada by the WTTC and Statistics Canada in the Tourism Satellite Account*, Canadian Tourism Commission, February 1996 (a report prepared by David Wilton)

*A Response by the World Travel & Tourism Council to: "A Comparison, Explanation, and Reconciliation of the Different Estimates of the Economic Significance of Tourism in Canada by the WTTC and Statistics Canada in the Tourism Satellite Account"*, World Travel & Tourism Council, October 1995.

## Annex

**Table 1. WTTC and TSA Data for Travel & Tourism Expenditures  
and Output 1988**  
(billions of Canadian \$)

	WTTC	TSA
Travel & Tourism (T & T) Personal Expenditure*		
<i>Food, Beverages and Tobacco</i>	2.89	1.21
<i>Clothing and Footwear</i>	.90	-
<i>Gross Rent, Fuel and Power</i>	1.31	-
<i>Furniture, Furnishings, etc.</i>	.40	-
<i>Transport and Communications</i>	22.25	8.82
<i>Recreation and Entertainment</i>	8.29	6.11
<i>Misc. Goods and Services</i>	16.62	6.59
<i>Net Expenditure Abroad</i>	1.59	3.91
<b>Total</b>	<b>54.23</b>	<b>26.64</b>
Foreign Trade		
<i>Purchases by foreigners in Canada</i>	6.99	6.53
<i>Purchases abroad by Canadians</i>	-8.58	-10.44
<i>T &amp; T merchandise exports</i>	13.75	-
<i>T &amp; T merchandise imports</i>	-11.56	-
<b>Net Foreign Trade</b>	<b>.60</b>	<b>-3.91</b>
Government Expenditures on Travel and Tourism		
<i>Goods and Services**</i>	8.71	1.41
<i>Public Infrastructure Investment</i>	2.55	-
<b>Total</b>	<b>11.26</b>	<b>1.41</b>
Investment in T & T Capital	12.38	-
Gross Domestic Product	78.48	24.15
Plus Business Employee Travel	11.44	6.19
<b>Total Travel &amp; Tourism Expenditures ***</b>	<b>89.92</b>	<b>30.34</b>
GDP at Factor Cost (Value-added)		
<i>Tourism Industry</i>	-	10.04
<b>Total T &amp; T Activities</b>	<b>70.70</b>	<b>13.38</b>

\* Sum of personal expenditure in Canada plus exports in TSA estimates.

\*\* Travel expenses of government employees in the TSA.

\*\*\* Travel & Tourism Gross Output in WTTC's terminology.

Table 2. **WTTC Estimates of Travel and Tourism Shares for Personal Expenditure Components**

	1995 WTTC US Share	1995 WTTC Canada Share	1998 actual expenditure (billions Canadian \$)*
Food, beverages and tobacco	.0354	.0509	55.933
Clothing and footwear	.0435	.0440	20.155
Gross rent, fuel and power	.0165	.0171	75.362
Furniture and HH equipment	.0228	.0120	32.860
Medical care and health	.0000	.0000	14.611
Transport and communications	.3759	.4038	54.362
Recreation., Entertainment, Education	.2622	.2092	39.062
Misc. (Hotels, restaurants)	.1459	.3197	56.027
Net Expenditure Abroad			1.565
<b>Total Personal Expenditure</b>			<b>349.937</b>

\* National Income and Expenditure Accounts, Annual Estimates 1982-1993, page 71.

Table 3. **Explaining the \$27.6 billion difference between the TSA and WTTC estimates of Total Personal Expenditure 1988**

	Billions of Canadian \$
<b>I. Tourism share weight adjustment procedures</b>	<b>7.0</b>
<b>II. Tourism expenditure items included by WTTC but not included in the TSA</b>	
1. Purchases of food and beverages for visiting relatives and guests	1.12
2. Clothing and footwear	.89
3. Gross rent, fuel and power	1.24
4. Furniture and HH equipment	.75
5. Vehicles purchased	7.32
6. Vehicle insurance	.38
7. Communications	.33
8. Miscellaneous personal goods & services	.55
<b>Sub-total</b>	<b>12.58</b>
<b>III. WTTC tourism expenditure estimates which exceed TSA estimates</b>	
1. Passenger airfares	.86
2. Vehicle repairs, parts and fuel	2.26
3. Restaurant and bars	2.03
4. Accommodation	.43
5. Recreation and entertainment	2.18
<b>Sub-total</b>	<b>7.76</b>

Table 4. **Tourism Personal Expenditure on Transportation and Communications 1988**  
(Billions of Canadian dollars)

Item	US travel and tourism % Share	Canadian expenditure	'WEFA method' travel and tourism Estimate*	TSA Data
Passenger air transport	100.00	4.137	4.137	3.282
Passenger rail transport	100.00	1.71	1.71	.175
Passenger water transport	100.00	1.27	1.27	.264
Intercity bus transport	100.00	.448	.448	.372
Urban transit	4.99	1.083	.054	.030
Taxis	**43.30	.346	.150	.226
Vehicle rentals	***17.30	1.134	.196	.404
<b>Total purchased transportation</b>		<b>7.446</b>	<b>5.283</b>	<b>4.753</b>
Vehicle repairs and parts	36.84	7.991	2.944	1.348
Vehicle fuel	31.67	10.573	3.348	2.684
Parking	36.84	.502	.185	.037
Vehicles purchased	36.84	19.858	7.316	-
Vehicles insurance	36.84	1.025	.378	-
Tolls	36.84	.077	.028	-
<b>Owned Vehicles</b>		<b>40.026</b>	<b>14.199</b>	<b>4.069</b>
<b>Total Transportation</b>		<b>47.472</b>	<b>19.482</b>	<b>8.822</b>
<b>Communications</b>	<b>5.87</b>	<b>5.7148</b>	<b>.335</b>	<b>-</b>
<b>Total Transportation &amp; Communication</b>		<b>53.186</b>	<b>19.817</b>	<b>8.822</b>

\* These 'WEFA methodology' estimates are produced by the authors, not by WEFA.

\*\* The US travel and tourism share was obtained by taking the ratio of taxi fares on trips to total taxi fares (1988 BLS data).

\*\*\* The US travel and tourism share was obtained by taking the value of out of town trip vehicle rentals to total vehicle rentals (1988 BLS data).

Table 5. **Personal Expenditure on Miscellaneous Goods and Services 1988**  
*(Billions of Canadian dollars)*

Item	US travel and tourism % Share	Canadian expenditure	'WEFA method' travel and tourism Estimate*	TSA Data
Restaurants and bars	31.21	20.267	6.325	4.293
Accommodation	100.00	2.725	2.725	2.296
Personal care	4.99	3.097	.155	
Cosmetics	4.99	3.212	.160	
Bank service charges	3.29	6.106	.201	
Life/personal insurance	.90	3.258	.029	
Non-profit organisations		6.689		
Jewellery and watches		2.213		
Interest on consumer debt		4.516		
Investment charges		1.736		
Legal/accounting services		1.586		
Other miscellaneous		.622		
<b>Total</b>		<b>56.027</b>	<b>9.595</b>	<b>6.589</b>

\* These 'WEFA methodology' estimates are produced by the authors, not by WEFA.

## A METHOD OF MEASURING DEPENDENT EMPLOYMENT IN TOURISM

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**INSEE**

Most studies in France on employment in tourism have been conducted by:

- pre-selecting so-called tourism activities,
- counting the jobs in these activities at fixed dates (usually 31 December),
- and adjusting their number by applying “tourism input rates” (share of the activity’s value added attributable to tourism).

The approach in this study is quite different:

- activities connected with tourism are not pre-selected but are defined by analysing seasonal employment curves,
- the study is not limited to a job count; it also tries to model changes in the number of jobs as a function of changes in the number of tourists.

### **1. The source used**

The study is based on DADS (annual social data returns). These are annual returns which are completed by employers and provide, *inter alia*, information about the period of employment (date of first and last pay slips) and pay of each employee per establishment.

The advantages of this source are that:

- it includes all establishments, whatever the number of employees;
- it is exhaustive; it does not, however, include agricultural and government employees, but this does not matter very much for a study on tourism;
- the level of employment can be monitored on a day-to-day basis from the dates of arrival in, and departure from, the establishment;
- since it covers the entire country, studies can be conducted at French regional and departmental level.

Its main disadvantage is the date at which its results are issued. At present, only the results of the 1993 DADS are available. This study has therefore been based on the results for that year. But this does not matter very much since the primary aim is to put forward a methodology for measuring tourism employment.

## **2. Definition of activities connected with tourism**

This study was conducted in a number of French tourist regions of different types: regions where the sea is the main attraction, so that tourism is concentrated during the summer months (Languedoc-Roussillon, Poitou-Charentes), and a region (Rhône-Alpes) which attracts both winter sports and summer tourists.

In this report, the examples will concern Languedoc-Roussillon, a region bordering the Mediterranean between Spain and the Côte d'Azur, where the sea is the main tourist attraction.

The influx of tourists during the summer generates employment. The basic idea was to define tourism-related activities as those activities for which the daily employment curve resembles the curve for tourist numbers.

The method comprises a number of stages:

Stage 1: For each activity in the region (use of the NAF at level 700, which is a French version of the 500 item-NACE), the number of employees is calculated for every day of the year: Since the DADS file gives the first and last pay dates for each employee, it is sufficient in an initial approximation to increase by one the daily employment variable for all the dates within the period during which the employee was paid.

Stage 2: Definition of a daily curve of tourist numbers

The ideal would be to have a daily curve of the number of tourists in the region. Such a curve is available for some French departments and regions. These curves are drawn by using the "flow method" based on road, motorway, station and airport counts. Although such a curve was produced in 1994 and 1995 for 4 of the 5 departments comprising the Languedoc-Roussillon region, it has not been directly used in this study, as it seemed preferable to define a method applicable to a majority of the regions.

The idea was to approximate the curve of the number of tourists from the daily curves for employment in accommodation activities, since tourists use either hotels, camping sites and other types of accommodation open to the public, or the main and second homes of family or friends, if not their own second homes.

The influx of visitors in the first three types of accommodation mentioned above has an effect on employment in these sectors. It can therefore be considered that the daily employment curves for these three sectors provide a good approximation of the curve of the number of tourists. This is verified, moreover, by correlating the curve of the number of tourists for the four departments in the region with the three daily employment curves.

It is more difficult to identify private accommodation users. They have not been taken into account for the definition of activities connected with tourism. They would have to be included, however -- in a form yet to be defined -- if the aim was to model employment in certain activities on the basis of tourist numbers.

### Stage 3: Fitting the daily employment curves to the curve of tourist numbers

The employment curve for each of the activities was fitted to the curves for employment in tourist accommodation by running a regression.

The first step was to regress each activity on activities 551 “Hotel Trade”, 552C “Camping Sites” and 552E “Other Tourist Accommodation” and on time (to take into account the positive trend in many activities in Languedoc-Roussillon). This method gives rise to statistical problems in the form of auto-correlation and multi-collinearity. It was therefore necessary to refine the regression and focus on changes in employment and not on the level of employment (which is logical given the inertia in this area).

The model selected therefore takes the following form:

$$\begin{aligned} \text{variation in employment in the activity} &= a \\ &+ b. \text{ variation in employment in the hotel trade} \\ &+ c. \text{ variation in employment on camping} \\ &+ d. \text{ variation in employment in the other types of} \\ &\quad \text{tourist accommodation} \\ &+ \text{residual} \end{aligned}$$

More precisely, changes in employment were not calculated day by day. It was preferable to smooth the observations and then work on weekly employment.

This model is applied to each of the activities that exist in the region. We then take the activities for which the regression is significant in overall terms (Fisher test, verification of assumptions regarding the independence of variables, homoscedasticity of errors and non-collinearity of regressors) and for which at least one of the regression parameters is significant.

The activities defined in this way, however, include all those which have an infra-annual profile resembling that for tourist numbers. But this coincidence is not necessarily connected with tourism. For instance, “153F Processing and preserving of fruit” comes under the region’s agricultural output and not tourism. Some activities of this type therefore have to be eliminated “manually”.

Similarly, a summer seasonal effect is to be observed in some activities when staff on holiday are replaced. This is probably the case in banking. However, it is difficult to separate these replacements from the employment generated by the opening of offices in municipalities with a large tourist intake (seaside resorts, for example).

This being so, we defined:

- an extensive list of activities comprising all those subject to a summer seasonal effect (except those obviously connected with agriculture),
- a more restrictive list from which activities are eliminated “manually” when the summer seasonal impact might not be related to tourism.

These two lists make it possible to calculate a range of employment.

### 3. Calculation of dependent employment in tourism

In this section the main thrusts of the study are described. Our initial work on the Languedoc-Roussillon region suggests that it will be possible to arrive at a method of calculation. However, further work is required; in particular the analysis needs to be extended to other regions.

What we shall refer to as “employment in tourism” is the sum of a number of components:

- *In the activities which can be classified as exclusively tourist activities* (e.g. hotels without a restaurant, camping sites), all jobs come under employment in tourism;
- *In activities connected with tourism*, employment in tourism comprises seasonal jobs as well as some non-seasonal jobs. The latter component is due both to the tourists who visit the region in the off-season as well as to the jobs which exist all-year round because of the influx of visitors in the summer months. The difficulty of calculating these three components varies from one to the other.

The first does not give rise to any problems once the exclusively tourist activities have been identified.

The second involves the problem of defining a seasonal job. As an initial approximation, all jobs which started at a date before the summer and ended at a date after the summer were counted as seasonal.

It is more difficult to calculate the third component. To do so, it is first necessary to divide the country into tourist and non-tourist areas.

Several problems then arise:

- *The choice of the geographical unit as a basis for this classification:* administrative entities are often too small or not relevant. Instead, the study uses the notion of commercial catchment areas. These are defined by using municipal records to group municipalities according to the use of shops and local services.
- *The criteria to be used to decide whether an area is to be classified as a tourist area or not:* in particular it may be asked whether accommodation capacity is a sufficient criterion.
- *The applicable geographical level* for this breakdown: it would seem that it has to be the national level since, for example, several entities similar in size must be compared in order to define tourist towns.
- *Definition of the thresholds* above which a locality will be classified as a tourist area.

The next step is to calculate an employment ratio per inhabitant for each activity connected with tourism in homogeneous non-tourist areas. This ratio will then be applied to the resident population in tourist areas. The difference between this result and the employment data recorded will then represent employment in tourism.

#### **4. Further work**

In addition to examining in more depth the issues referred to in the preceding section, work will continue in two other areas:

- updating of the results on dependent employment using another administrative source (URSSAF employee branch: documents provided by the social security bodies) which provides quarterly data and is available sooner than the DADS,
- the measurement of self-employment.



# MONITORING KEY FIGURES ON EMPLOYMENT IN THE TOURISM INDUSTRY IN OECD COUNTRIES

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## **1. Introduction**

This paper is a first attempt to set up a statistical monitor for key figures on “employment in the tourism industry”.

A questionnaire for a pilot survey in OECD Member countries has been developed but is not included in this report.

### *1.1 Objectives*

The primary objective of this paper is to provide a statistical framework and methodological guidelines to establish the volume in terms of the number of people employed and some characteristics of employment in the tourism industry, seen from a supply-side perspective. These guidelines should be consistent with the concepts and definitions followed in other areas of economic and tourism statistics and are intended to be simple and flexible enough for adoption and adaptation. The introduction of these methodologies should lead to the generation of international comparable statistics on employment in the tourism industry. This will not be an easy task because comparability of data on employment in general is already hampered by differences in definitions between countries.

These guidelines should also be in line with the Manual on Tourism Economic Accounts. Although linking the demand- and supply-side of the tourism industry for employment purposes is not a primary objective of this paper, it could be one of the results of this exercise.

Collecting data on employment in general can have two major goals. First of all data, can be used to describe and analyse the current employment situation in the tourism industry in terms of, for example, number of people employed, characteristics of the labour force, labour conditions and education and training provisions. Secondly, collected data can be used to analyse (or predict) the impact of (changes in) tourist expenditures on employment levels and structures in the different sectors related to the tourism industry. This, however, means connecting the supply-side with the demand-side of the tourism industry. Data on employment can provide important information for policy makers on a more macro-economic level in areas such as labour-force planning, as well as for individual entrepreneurs or regions for benchmarking.

## *1.2 Importance of employment in tourism*

The OECD Tourism Committee first attempted to define the contribution of the tourism labour market to Member countries in the 1980s. Although little importance was attached to tourism in labour market policies of the time, there were signs that this sector had an important potential to generate employment. The results of this study were incomplete as they referred only to the hotel sector labour market. It was not possible to analyse and draw conclusions on the complete range of jobs directly and indirectly linked to tourism. This is due to the fact that, while tourism is a heterogeneous industry representing a wide variety of types and sizes of businesses, it is not an industry in the traditional sense of the word. So it does not fit the standard criteria for (national) accounts.

Nevertheless, the tourism industry is playing an increasingly important role in the economy of many of the OECD countries, contributing to their economic growth and job creation. Because tourism is seen as a growth sector and is still partly considered to be labour-intensive, policy makers like to see the development of this sector as one of the means to tackle unemployment in their region. This is especially the case for unemployed persons at the bottom of the labour market, such as women, immigrants and young people with low educational attainment.

In addition to these arguments, the attention directed towards employment in the tourism industry is reinforced by the fact that the tourism industry is maturing into a consumers market through increasing (inter)national competition, market turbulence and changes in consumer needs. This requires more and more attention, not only to quality in products and services, but also to quality in human resources, which is one of the major assets of this industry. This growing attention to human resources is diverging in different directions. On the one hand, increasing competition entails more emphasis on cost-reduction and efficiency in business operations. Even in a labour-intensive industry such as tourism, this leads to a growing elimination of human labour through the use of (information) technology, standardisation of products and services, job de-skilling and outsourcing. On the other hand, in order to compete and adapt to new market environments it is important to invest in the quality of staff and managers. Although human resources are the most valuable asset of the tourism industry, paradoxically, the will to invest in education and training in some of the major sectors (e.g. horeca) is relatively low compared with most other industries. For obvious reasons, such as seasonality, high proportions of part-time workers, high labour turnover, limited career opportunities and often poor labour conditions, little attention is given by employers and employees to training and education. Too often human resource planning in the tourism industry is based on short term thinking. This applies especially for small and medium-sized enterprises.

This renewed interest in (the job generating potential of) employment in the tourism industry in the last couple of years is indicated by the organisation of international seminars on this subject in Antalya (Turkey) in 1994 and in Annecy (France) and Vienna (Austria) in 1995. This growing attention, however, also entails the danger for the circulation of questionable data and stereotypes. Statistics should play an important role to uncover these stereotypes and monitor developments. This is even more important because the labour market in general looks to be in a transition phase from a more homogeneous market with clear-cut and steady jobs to a highly multiform market with all kinds of flexible labour structures. Because of its specific characteristics, the tourism industry has been at the front edge of this transition for some years. A transition which is also strongly driven by new directions in the tourism industry, such as super-segmentation of demand and flexibility of supply and distribution.

### *1.3 Timeframe*

This paper should result in a useful and accepted framework for the collection of data on employment in the tourism industry, seen from a supply-side perspective. Simultaneously, an initial pilot survey was set up to collect some data in OECD countries. Results will be discussed at the meeting of the Statistical Working Party of the OECD Tourism Committee.

## **2. Conceptual framework**

Tourism is usually defined as a demand-side concept, that is: the need for people to travel outside their usual environment (A). To travel outside their usual environment people spend money on a variety of products and services. In response to this demand, all kinds of enterprises and organisations need to employ inputs, such as capital, materials, but also labour (B), to supply these tourism products and services. Of course, there is also interaction between supply and demand. Through, for example, marketing, promotion and prices, the need for tourism products and services can be influenced to some extent.

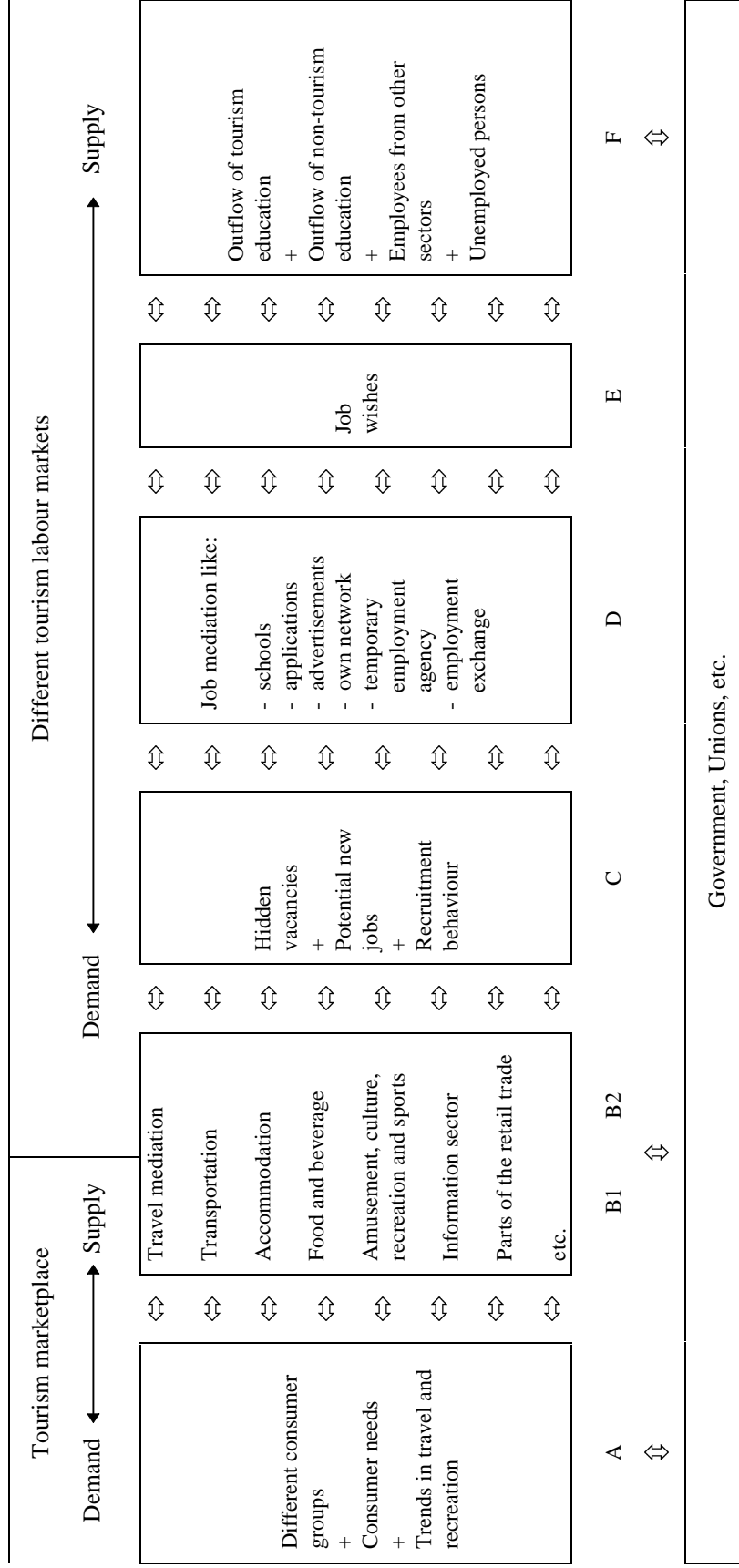
Changes in the demands of different tourist consumer groups will have an effect on the supply-side of the tourism market. Not only through the increase or decrease in the demand for products and services, for example, but also in the employment situation of people working in the tourism industry. For instance, firms have to react with more experienced and knowledgeable staff to increasingly demanding, independent and experienced travellers. They have to adapt their strategies and skills to new markets by implementing, for example, better tourism information systems, increasing efforts in R&D and investing in human resources.

Enterprises and organisations in the different sectors of the tourism industry will differ greatly in the way they provide these products and services to tourists and the way they react to changes in the marketplace. Besides fluctuations in demand (e.g. seasonality), this will depend on all kinds of factors, such as: the product(s) or service(s) they provide, the way these products and services are produced, the use of technology, competition, economic performance, size and ownership (B1), and also, the availability of (qualified) labour, labour costs and labour productivity (B2).

In this light, some general features of tourism labour markets are:

- the continuing domination of small businesses with a high level of family or self-employment in some sectors on the one hand and the often still traditionally public-owned enterprises (e.g. transportation) on the other, with a tendency towards integration and concentration of businesses;
- high levels of fluctuation in demand for its services and products. Not only in terms of annual seasonality, but also within the timeframe of a week or day. This has major consequences for the demand of labour. Especially towards more flexibility in working hours, as well as in tasks. This need for flexibility also results more and more in all kinds of multiform labour structures (e.g. more part-time and on-call employment), de-skilling of tasks through the use of technology and standardisation and outsourcing. In a world with increasing competition, adaptability, not only to changes in demand, but also in business operations is becoming more and more essential for the survival of firms and organisations in the tourism industry;
- certain sectors are constrained by service characteristics where production and consumption are inseparable, often meaning that products and services cannot be stored;

## Conceptual Framework



- it is still a labour-intensive industry in most of its major sectors, although the impact of technology as a substitute for labour will become more and more important. This applies more to the production of goods and services rather than the service side. State-of-the-art technology is becoming an essential asset for the accessibility of the tourism marketplace;
- as a consequence of its labour intensity, some of the major sectors are dominated by unskilled and semi-skilled jobs which means that the tourism labour force is often accessible to workers with a minimum of training;
- some of its major sectors are dominated by traditions of low pay, perceived poor conditions and high labour turnover (instability).

Thus the range of subsectors, the size of businesses, their ownership, the markets they serve and the impact of seasonality illustrate the factors which contribute to determining the range of tasks which are undertaken, the numbers employed and the skills required. However, while these associations are important, they cannot be seen as the exclusive determinants of the different tourism labour markets. In its broadest sense, a labour market comprises the total working environment at sectorial, local, regional, national or even transnational level. In the case of the tourism industry this working environment consists of all tourism-related sectors, their personnel requirements, the skills needed and working conditions, as well as those currently outside the actual workforce, whether unemployed, temporary unable to work because of illness or injury or those undergoing some kind of training or education. Labour markets are driven by the intermingling of demand (B2-C) and supply (E-F) of labour through a complexity of interactions. Not only between the direct demand and supply of labour, but also determined by a wide range of other factors. Some of these factors include:

- the culture and history of the locality or sector (also in terms of size and ownership of businesses.); the economic system (e.g. free market or planned economy);
- economic performance factors which will influence demand for products and services, the price that will be paid for them and the level and character of employment that will be generated as a result;
- the number of (hidden) vacancies (C). Together with the people who are already working in the tourism industry, these vacancies determine the demand-side of the labour market. Enterprises and organisations will have different recruitment strategies for filling vacancies (C). Vacancies that can have a wide variety of (required) characteristics, such as: education requirements, skills, experience, working hours, salary and other working conditions;
- factors at the supply-side of the labour market, such as: demographic structure and trends and the range of skills available. The competitive advantage of countries can depend on the amount of available skilled and unskilled labour for the tourism industry. In general terms, the supply-side of the tourism labour market can be divided into four groups: graduates with a tourism education, graduates with no tourism education, unemployed and employed from other areas (F). These people will have different skills, qualifications, expectations and wishes (E);
- the structure of and focus on educational and vocational training provisions: private and public (F);
- the extent of inward and outward labour mobility;

- the competition between companies and organisations for available skills within the workforce and school-leavers. For example: where the supply of labour to the tourism industry is not perfectly elastic, growing demand can raise costs and thereby reduce the competitiveness of the tourism industry. So there can be differences between gross and net employment effects;
- the structures of job mediation, i.e. through schools, advertisement or application, own networks and labour agencies (E);
- policies enacted at a local, regional, national and transnational level by a wide range of bodies - government, unions, councils and all kinds of representative assemblies - with respect to matters like fiscal policies, education and training, employment creation and related incentives, employment protection measures, workplace conditions and health and safety provisions.

A labour market, therefore, is a dynamic concept responding to a diversity of factors which cannot be treated as static and unchanging. Perfect labour markets, in the sense of well-oiled machines which balance demand and supply of labour, do not exist. This also makes analysis, predictions and forecasts in this area rather difficult. This is complicated even further by the fact that the tourism industry itself is also characterised by a diversity of activities in different sectors, only bound together by their contribution to a common goal: that of meeting the needs of tourists.

### **3. Methodology**

#### ***3.1 Concepts and definitions***

Tackling the subject of tourism and employment from a statistical point of view is not an easy task.

First of all, defining tourism from a demand-side perspective will only provide insight to the number of jobs (total labour volume) in the tourism industry. In these cases, some variant of the multiplier method, input-output analysis or an econometric model is used. These methods usually translate the total turnover of (or expenditures in) a (sub)sector of the tourism industry into a number of persons employed by using some kind of labour coefficient or ratio. Such methods, however, cannot say anything about the characteristics of, for example, the labour population or labour conditions. One can think here of aspects such as sex, age, immigrant status, working hours, education levels, wages, labour costs, vacancies, etc, but also of mobility, flexibility, seasonality, informal labour, substitution of human labour through the use of technology, outsourcing, recruitment strategies and the image of labour conditions in the tourism industry. To say something about these characteristics, some kind of supply-side approach must be used. That is to say: defining tourism from the classification of companies and organisations that offer products and services to tourists. Because tourism cuts through and merges into a variety of economically- defined subsectors, it is difficult to define the actual boundaries of tourism from a supply-side perspective. This, however, should not be a constant source of frustration. A practical and flexible approach should be used here. Secondly, employment or labour markets should be defined which is a more difficult task than it might seem. Furthermore, a first selection should be made from the (key) characteristics of the labour force or labour market. These (key) characteristics also need to be defined.

*Definition of the tourism industry from a supply-side perspective:*

For the definition of the tourism industry from a supply-side perspective, the classification according to industry, i.e. the main economic activity of an enterprise or organisation, on the basis of the international standard classifications of industry (ISIC, rev. 3), can be used. Seen from an employment perspective, this is fundamentally different from that of other possible approaches, that is: according to occupation on the basis of the international standard classifications of occupation (ISCO, 1988) and according to products and services on the basis of the Central Product Classification (CPC, 1989).

As mentioned before, defining tourism from a supply-side perspective is a problem. Tourists spend their money on a variety of products and services and therefore tourism cuts through the normal classification of industries. Using a practical approach however, a first selection of these industries as core sectors of the tourism industry can be made on the basis of a set of criteria. These may include association with the WTO definition of tourism (see also the SICTA), the degree of tourism specialisation of a sector (that is: tourism-driven versus tourism-related sectors by the use of turnover), availability of reliable statistical data and the direct contact between enterprise or organisation and tourist. This last criterion means that indirect and induced employment will be left out.

On the basis of these criteria the following selection of core sectors looks plausible:

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**Diagram 1**

- 63 Supporting and auxiliary transport, of which:  
6304 Travel agencies, tour operators and tour guides."
- 55 Hotels and restaurants, of which:  
551 Hotels, campsites and other commercial accommodation.  
552 Restaurants, bars and canteens."
- 60 Land transport, of which:  
601 Railways.  
602 Other land transport.
- 61 Water transport, of which:  
61 Sea and coastal water transport of which: cruise ships.  
612 Inland water transport.
- 62 Air transport, of which:  
621 Scheduled air transport.  
622 Non scheduled air transport.
- 92 Recreational, cultural and sporting facilities, of which:  
923 Libraries, archives, museums and other cultural activities.  
924 Sporting and other recreational activities.

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?? Information services (part of 7511)

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This selection can, of course, be elaborated or adjusted with other (sub)sectors of the ISIC classification. An essential precondition, however, is the availability of reliable statistical data.

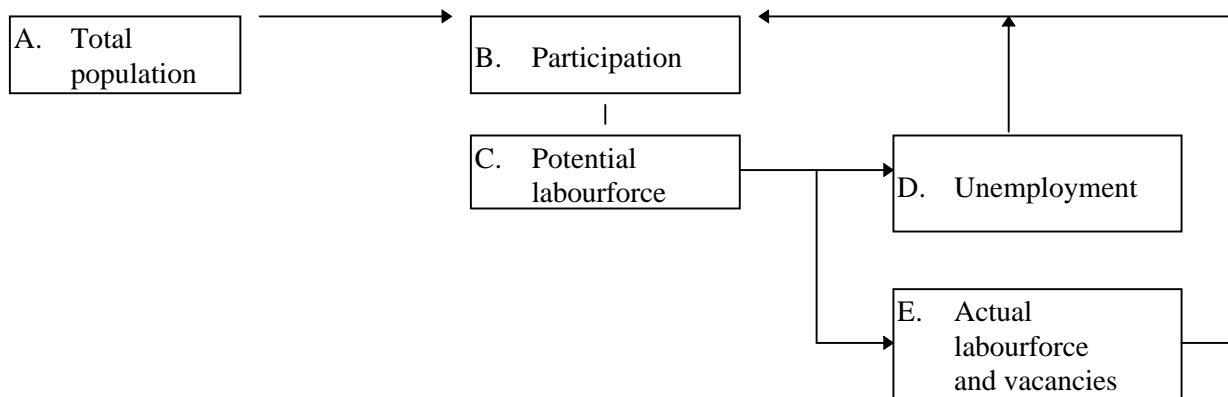
*Definition of the (tourism) labour force (or employment)*

To start with the collection of data on all aspects of the (different) labour market(s) in the tourism industry is too difficult to handle at this moment. It is not only difficult because of the diversity of aspects in play but also problems about the definition and availability of data that can be expected concerning these aspects. This paper, therefore, only focuses on some of the key characteristics of the tourism labour force (see B2 in basic framework).

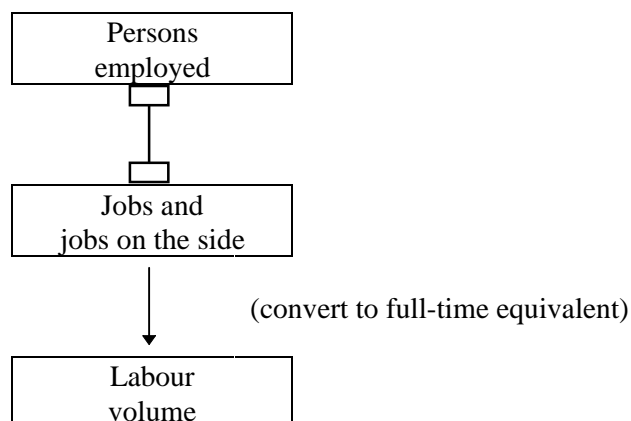
In diagram 2 a picture is given of the different concepts of the labour force or employment in general. The volume of the potential labour force (C), that is: the total labour supply, depends on the participation rate (B) of the population (A) of a region or country in the labour market. This is influenced, for example, by the age structure of the population and the rate of unemployment, which can discourage people from looking for a job. The demand for labour consists of the actual labour force plus (hidden) vacancies (E). The demand for labour and the potential labour force determine together the rate of unemployment (D).

The labour force or employment can be expressed in employed persons, in jobs and in total labour volume. Some people employed in the tourism industry will have a job on the side in the same industry. Jobs and jobs on the side result in the total number of jobs in the tourism industry. Jobs, however, differ in size - full-time or part-time. If all jobs are converted to full-time equivalents (fte) the total labour volume of the tourism industry can be calculated (see diagram 3).

**Diagram 2**



**Diagram 3**



At this moment the comparability of data on employment in general between countries is hampered by differences in definitions, classifications, groups covered and methods of collection.

Practices as to the definition of the (potential or actual) labour force or, in terms of the ILO: economically active population, vary as regards to the treatment of groups such as the armed forces, members of religious orders, seasonal workers, persons engaged in part-time economic activities (e.g. jobs of four hours or less) or family workers, particularly females, who assist in family enterprises. In certain countries, all or some of these groups are included among the economically active while in other countries they are treated as inactive. In the framework of tourism, seasonal, part-time, on-call and family workers are important groups.

The reference period can also be an important factor of difference: in some countries census data on the economically active refer to the actual position of each individual on the day or week of the census, while in others the data recorded refer to the usual position of each person, generally without reference to any given period of time.

Also, in most countries, the statistics of the economically active population relate only to persons above and/or below a specific age limit, while in some there is no such age provision in the definition. Often age limits of 15-74 or 15-64 are used.

In some way a common denominator between countries should be found here. In this paper the starting point for the (potential or actual) labour force is the age group between 15-64 years. Included should be:

- employed and self-employed people (incl. family workers);
- people who have a job of 4 hours or more;
- if possible: people on-call and students. People who work through temporary agencies should, if possible, be classified separately.

*Definitions of key variables/characteristics:*

As for the definition of employment, it is not wise to aim too high and try to cover all possible characteristics of a labour force. A selection of key variables should be made. The following key variables are included here:

■ **General level of employment: the number of persons employed distinguished for:**

- + the total labour force in a country;
- + the selected core sectors of the tourism industry;
- + if possible: annual growth/decline rates;

The number of people employed (or jobs) should be counted. There is no intention yet to make a conversion to full-time equivalents. It must be clear, that these figures only present a (big) part of the people employed as a result of the different expenditures of tourists on the one hand and include people whose job is a result of the expenditure of residents instead of tourists on the other. (See also 3.3. ratios).

■ **Key characteristics of the labour force:**

1. **Sex** - distinguishing between male and female.
2. **Age groups** - 15-24; 25-34; 35-44, 45-54; 55+.
3. **Nationality** - distinguishing between nationals and non-nationals/immigrants. This differs between countries.
4. **Working hours** - distinguishing only between full-time and part-time on the basis of the average number of hours worked per week, excluding overtime, annual leave, holidays, sick leave and time spent in travel from home to work and vice versa. Part-time work is defined here as working equal or less than half of the average hours worked per week. In making comparisons it should be borne in mind here that the data are influenced by the number of days worked per week, regulations and customs regarding working on Saturdays and Sundays.
5. **Seniority** - average seniority per core sector and country.
6. **Status in employment** - the international classification of status in employment (ISCE) classifies jobs with respect to the type of explicit or implicit contract of employment the person has with other persons or organisations. The main ISCE groups are: employers, own-account workers, employees, members of producers cooperatives and unpaid family workers. These groups are not easily comparable between countries. For example, in most countries managers and directors of incorporated enterprises are classified as employers. Another example is (un)paid family members, in most countries they are classified as employees, but some countries classify them as unpaid family workers. Also many countries cannot make a distinction between own-account workers and employees. Because of these differences between countries the only distinction here should be made between employers (self-employment) and employees (paid employment). Self employment includes: employers, own-account workers and (un)paid family workers. Paid employment (salaried) should (if possible) also included: on call workers, apprentices, paid students and paid homemakers.

7. **Education level** - Because of the different education systems per country there is no unambiguous definition here. However, a translation can be made to the international accepted standard classification of education, divided in the groups low, middle and high.

All variables should distinguish between the total labour force of a country and the labour force per core sector of the tourism industry.

### 3.2 Sources

In general, employment data can be obtained from three main sources, namely:

1. **Labour force survey** (and general household survey) - these surveys are a source of regular information on both the total labour force (employed and unemployed) and total inactive population. The data generally relate to employment during a specified brief period, either one week or one day. This source usually covers key variables 1, 2, 3, 6 and 7.
2. **Social insurance statistics/administrative registrations** - this source covers the working population protected by sickness, accident or unemployment insurance schemes. Persons working a very short time or receiving very low pay are sometimes excluded. This source usually covers key variables 1, 2, 4, 5 and partly 6.
3. **Establishment surveys** - this source provides data on the number of workers on establishment payrolls for a specified period or working day in this period. This source usually covers key variables 1, 2, 4, 5 for employees (thus partly 6). In some countries labour accounting systems are developed. They provide official estimates of (un)employment data by national authorities. These are based on a combination of information drawn from one or more of the above sources. This source, usually, covers all key variables.

### 3.3 Further methodological considerations

As stated before, the comparability of data on employment is hampered by differences in definitions between countries. So it is important that the methodology and definitions used to collect data on employment in the tourism industry should be described and fit in as best as possible with the definitions in this paper.

In addition the following considerations should be made:

- that only existing official employment data should be used. This can limit the distinction between the selected (sub)sectors of the tourism industry. If possible data on a three digit level should be presented. If this is impossible: at least data on a two digit level should be given;
- that yearly averages should be presented. Only if possible: seasonal data should be given;
- that a distinction between employment in small and medium sized enterprises on the one hand and employment in large enterprises on the other is useful, but difficult to obtain on a reliable basis if one also holds on to the distinction between the different selected core sectors;

- for reasons of reliability, data of two or three years can be joined together in one more reliable data-set. This is especially the case for data on the characteristics of the labour force;
- regional employment data is not asked, because of reliability problems that can arise. For the same reason aspects, such as: informal labour and the distinction between permanent and seasonal labour, are excluded. The availability of data plays an important role as well.

### ***3.4 Ratios: linking supply- and demand-side concepts***

One of the major problems of a supply-side approach is the question: which tourism-related sectors should be included? By its nature, however, tourist expenditure and hence tourism-related employment encompasses the outputs of almost every industry in the economy. On the other hand, industries defined as those which comprise the tourism industry can cater for the needs of residents as well as tourists. Only a proportion of their employment will be associated with tourism.

To solve this problem, at least partly, a connection should be made between the supply- and demand-side of the tourism industry. With the expenditures of tourists (demand-side) and, for example, the total turnover (supply-side) in the selected sectors of the tourism industry, ratios could be calculated. These calculated ratios can then be used to allocate employment in the selected sectors to tourism, excluding employment generated by expenditures of residents. With such an exercise there can also be a much better confrontation between employment data from a supply-side approach and employment data from a demand-side approach, insofar as it concerns employment figures on the number of people employed - or full-time equivalents - and not the different characteristics of the labour force. Such a confrontation could also provide better insight in the reliability of labour coefficients and full-time/part-time ratios which are often used.

Until now, not much research has been done on the use of these ratios and the way they should be calculated in operational terms. This is certainly not the goal of this paper but in the enclosed questionnaire one of the tables is directed to this subject. Concepts (and data) from the Manual of Economic Accounts can be very useful here. The Manual integrates aspects of tourism supply and tourism demand with its three main accounts:

- the production account which presents supply-side information, including employment data of sectors with tourism activities (within a country);
- the consumption account on utilisation;
- and the commercial goods and services account reconciling supply and utilisation.

These three accounts are used in conjunction with each other to build a global system which encompasses all statistics relative to the consumption and production of tourism. Although the linking of demand and supply is a very useful exercise, some questions about this approach should also be asked:

- it is often difficult to allocate expenditures of tourists to the selected sectors of the tourism industry with existing statistics. The availability of reliable and actual data is also a problem here;
- it is still unclear how the connection should be made. A very simple way is to determine the total turnover (T) in a sector and relate this to the expenditure of tourists (E) in that sector;

$$\text{Tourism ratio of sector X} = E/T$$

In an ideal situation, ratios could even be calculated for the different tourist groups - domestic, inbound and outbound (and also same-day visitors). However, a more comprehensive method should be developed here using concepts such as value added, capital formation and product and service classifications. See the Manual;

- this exercise is mainly important when the number of people employed, the number of jobs, full-time equivalents or total labour volumes are discussed. However, the usefulness of these ratios is questionable if characteristics such as sex, age groups and labour conditions, are discussed;
- for labour policies, it is only important to know exactly which part of employment in a sector is generated by tourist expenditures in a limited way. In many cases, labour policies will be directed to the total labour market or the total labour force of that sector, regardless whether the employment is a result of the expenditure of tourists or residents. On the other hand, if the impact of tourism expenditures and tourism flows on employment need to be analysed, these are the best methods at the moment.

#### **4. Summary**

“Counting people employed” from a supply-side perspective is certainly not the only method to measure employment levels and structures in the different sectors related to the tourism industry.

Beside the fact that it is hard to define the tourism industry by the use of a narrow set of sectors of the Standard Industries Classification, a supply-side approach has also some other limitations. For example:

- this method neglects so-called secondary effects, such as indirect and induced (employment) effects of tourist spendings. This can result in an underestimation of tourism-related employment. However, employment in some sectors (e.g. construction and processing), which supply services and products to industries that cater directly to tourists, could be included as well. In these cases a value chain could be useful;
- this method provides little direct insight into the responsiveness of employment growth to factors like increased visitor numbers for example. Effects must always be related back to tourist expenditures in some way.

Methods which recognise the relation between tourist expenditure and the impact of that expenditure on job creation are mainly demand-side driven approaches like simple expenditure methods, input-output methods, multiplier models or econometric models. Although these methods have their own specific limitations, these approaches are much better suited to analysis of the impacts of tourism expenditure on employment levels, connections between all kinds of tourism-related industries, effects of government revenue and expenditure, etc.

Beside the fact that results are quite sensitive to the assumptions made, the major deficiency of these demand-side driven approaches is that they cannot say anything about the characteristics of employment in the tourism industry. For this, a supply-side driven method must always be used. Therefore the goal should be to use both approaches simultaneously and gear them together as much as possible. Here the concepts of the Manual of Economic Accounts should play an important role.

Improvements can be made to all methods used. For the supply-side method, some possibilities are:

- improving the definition of tourism by including more (sub)sectors (also related to indirect employment);
- adding more aspects and determinants of the labour force and labour markets;
- making a more elaborate analysis of the different tourism labour markets;
- providing data on a regional level;
- better linkages between supply- and demand-side perspectives;
- including more qualitative aspects, such as: effects of labour turnover (mobility), substitution of human labour by technology, new multiform labour structures, recruitment strategies, (un)availability of skilled labour, effects of labour costs and informal labour.

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## CONCLUSIONS OF THE THIRD INTERNATIONAL FORUM ON TOURISM STATISTICS

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The Sintra forum has given a clear picture of the scope, diversity and complementary nature of the work on tourism statistics being conducted by research institutes, universities, the travel industry and government agencies in the 30 countries represented.

This mosaic of statistical projects and practices demonstrates that tourism is a complex and multi-disciplinary field. In these conclusions I wish to stand back from the papers presented at the forum to consider some of the main ideas that underpinned our discussions and examine their implications for tourism statistics. I will mention five points, the first being:

- **Tourism-related activities are transversal and dominated by SMEs.**

This is an important feature of tourism-related activities, with significant implications for those who produce statistics. The Portuguese State Secretary for Tourism and Trade, when opening the forum, referred to poor data returns from firms. That may be because statisticians have not been attentive enough to the firms which supply data. More information should flow back to tourism agents and data suppliers, and it is essential that users and firms are aware of what is available at regional, national and indeed international levels. Among the solutions suggested is a national observatory which will conduct analyses combining data from a range of sources, and to ensure that the information available is disseminated; sound forms of partnership need to be developed with the private sector. We considered how data from a range of sources can be combined. New technology should be of assistance here, along the lines of the inventory of tourism resources which Portugal has developed. International bodies are also setting up on-line statistical information systems, as a step in the same direction. More broadly, there is a need to rationalise requests for statistics, and to make fuller use of the sources already to hand, before placing further burdens on firms.

- **The tourism market is highly segmented and takes many forms.**

Given the many facets of tourism, the methods used to measure tourism-related activities need to be reshaped to give a realistic picture of its true scope. The example of Denmark, in relation to private non-commercial accommodation, illustrates this perfectly. Other types of accommodation have to be taken into account, and statistics have to adjust. In Austria existing sources, such as the population census, have been used to examine the socio-economic dimension of tourism, casting useful new light. Here again, using new technology may yield information at a finer level; the GISCO system developed by EUROSTAT is a step forward here. Last, defining tourism-related activities and their direct and indirect effects remains crucial.

Methodological developments on employment and the OECD pilot survey are endeavouring to refine the definition, and so is the work on tourism satellite accounts such as that being conducted in Canada.

- **Tourism-related activities are relatively concentrated in time (seasonality) and space.**

The Spanish, Italian, Portuguese and Austrian examples all reminded us of this point. It naturally raises difficulties for statisticians, who need to handle the data with great precision. Similarly, there is a considerable need for regional and local statistics. Detailed information at regional level, for instance, is essential for any study of tourism's impact on the environment. Forecasting models need to be devised to assess this and other matters. Regional tourism statistics need to be developed. The econometric models presented at Sintra can contribute here.

- **Tourism is a core social activity which permeates the life of local communities.**

Quality tourism is not simply an economic activity but one which contributes to the social well-being of the resident population. Papers have shown the need to grasp tourism in its entirety, via an approach that combines the short, medium and long terms. For statisticians this is a relatively new area to explore, and further research is needed. The construction of a macro-economic statistical system to allow data to be understood and interpreted from a socio-economic standpoint was suggested earlier, at the Venice forum. Co-ordinating tourism policy with policy on the environment, transportation, regional development, immigration and so on should be a key concern, as recommended by such bodies as the World Tourism Organisation, the European Commission, and the Organisation for Economic Co-operation and Development.

- **Tourism, like other economic activities, is becoming global and interdependent.**

Here again, new methods of quantifying all tourism-related activities need to be introduced. For over ten years now, for instance, OECD has been developing tourism economic accounts in order to assess tourism's role in the economy more fully. It is continuing work to enrich this instrument and provide a tourism satellite account. Comparison of the work by WTTC and Statistics Canada illustrates how far we still have to go.

The European Commission referred to the dialogue with non-EU countries around the Mediterranean seaboard, designed to integrate them in economic, social and statistical development. OECD has a significant outreach programme, for non-members including China, India and countries in South-East Asia and Latin America, with similar objectives.

I believe that these points show that statisticians will need to call on considerable imagination, innovation and concertation. They should bear this constantly in mind.

Imagination, especially given the numerous constraints facing statisticians. Resources are coming under increasing pressure, while data quality is substantially dependent on the level of resources. There are also limits on household and business surveys, and the best possible use should be made of existing data.

Innovation, devising new systems to monitor tourism, which is particularly versatile. It seems that we should move towards more integrated systems combining economic and social aspects and drawing on the

wide range of current sources. We also need to work at a finer level (the region, in particular) to grasp the diversity of tourism. More use will have to be made of new technology.

Concertation: this forum has shown how important it is to exchange experience and know-how, which can open the door to new areas of statistical work. There is also a need for concertation with firms, and with tourists answering questionnaires. The international organisations will continue to work in this direction. A high degree of collaboration is required to ensure that the work of these organisations is, insofar as possible, complementary.

This forum has demonstrated support for moves in this direction and has greatly advanced our thinking on the subject. The papers presented at Sintra will be published jointly by the Portuguese tourism and statistics authorities, EUROSTAT and OECD, under the responsibility of the OECD Tourism Committee.

I extend thanks to all the speakers and discussants, and to the joint organisers, the Portuguese tourism and statistics authorities, EUROSTAT and OECD. We have all appreciated the welcome we have received from our Portuguese hosts.