A complete statistics system for the Andalusian territory

Requested comment

Inmaculada Gallego Galán

Summary: At present, we can state that Andalusia, through the Government Tourism, Commerce and Sports Department, has a complete statistics system for the region as a global territory; this has been a major objective and it is already covered with the development of several working lines, synthesised in three:

1.- To match the basic statistical information needs, either through the already existing statistical and documental information compilation or via the production of own statistics on especially important aspects for understanding tourism in Andalusia. This working line is founded on four basic aspects:

   1.a. Information compilation and treatment
   1.b. Tourist demand analysis
   1.c. Tourist supply analysis
   1.d. Tourism territorial analysis

2.- To know the impact of tourism on the regional economy through the creation of an analysis method leading to establishing the relationships between tourism as an economic activity and the global Andalusian economy.

3.- Forecasting analysis through quantitative forecast models which allow us to anticipate the evolution of demand in the short and medium term.

If a statistics system is to be achieved, and not just a set of data referring to a sector, data collection and treatment tools should be established which are aimed not only at providing information, but also at doing it in a harmonic, homogeneous and integrated way.

1. Harmonic: Information should be presented in accordance with a number of international concepts, definitions, classifications and norms which make it possible to compare the different geographic areas.

2. Homogeneous: Information contents should be part of social and economic national and international statistics set.

3. Integrated: The synthesis magnitudes formed by the merging of different partial information tend to compose an economic account system and to construct an integrated indicator system.

It is clear that the Andalusian tourism statistics system should be oriented to the territorial disaggregation of information in all domains. In fact, from the Andalusian Government Tourism, Commerce and Sports Department, a pilot experience has been developed in this field as an indicator system to evaluate the impact of the tourist activity on the environment, the territory and the local population of a tourist destination. This perspective is essential as the differential characteristics of a territory, so relevant in tourism analysis, would not be grasped otherwise.

1 Chief, Statistics and Market Research Department Turismo Andaluz, S.A. Andalusian Government Tourism, Commerce and Sports Department. igallego@andalucia.org
# Index

Introduction

The Andalusian experience
- To match the basic statistical information needs
  - Information compilation and treatment
  - Tourist demand analysis
    - Tourist segmentation
    - Tourist follow-up survey
    - Event tourism
    - Tourist market study at origin
    - One-day visitors
  - Tourist supply analysis
    - Tourist activity index of Andalusia (INACTUR)
    - Specific occupancy survey (EPO)
    - Tourism employment in Andalusia
    - Survey on the technological situation of the tourist supply in Andalusia (ESTOTA)
  - Tourism territorial analysis
- Tourism economy: Tourism Satellite Account in Andalusia
- Demand forecast
  - Forecast generation model (hotel movement)
  - Forecast of airport movement

Territorial breakdown of information
- Territorial information system
- Territorial indicator systems for a tourist destination
INTRODUCTION

There are many reasons which explain the favourable peculiarities of statistic development of Andalusia. The great significance of tourism in Andalusia, both in terms of flows and economic relevance, together with the deficiencies of statistics sources to observe a set of aspects which are essential to understand the actual scope of tourism in Andalusia are enough reasons for the existence of a complete tourism statistics system in this region of the South of Spain.

Andalusia is an important tourist destination at an international level; in terms of foreign incoming tourism, Andalusia overcomes such countries as Thailand or the continent of Oceania, exceeding Argentina and the Dominican Republic more than three times. In addition, statistics development in Andalusia is outstanding, as there has been production of own very complex statistics in other economic sectors, such as the I-O tables since the reference year of 1975.

Another aspect which has conditioned the statistics development situation of the Andalusia tourism administration is the autonomy Andalusia has in terms of tourism policy which involves the real existence of a domestic demand of information in our Autonomous Region. This interest shown by the public administration has become real through a firm commitment expressed by the different institutions involved. Andalusia, as a mainly tourist region, grants very high importance to the production of tourist statistics and so it makes important efforts to collect and manage information.

The institutional support for the development of a Complete Tourist Statistics System has been made clear with the creation, within the public company Turismo Andaluz, S.A, of a solid technical and functional structure, provided with qualified staff and sufficient material and financial resources for the diverse activities carried out nowadays. From experience in Andalusia, this is an ideal situation as it favours the continuous control of the operations by outsourcing just field work, which is also submitted to a strict inspection plan.

Therefore, the objective of Turismo Andaluz Statistics and Market Research Department is to become an instrument at the service of the Autonomous Region for better understanding how the tourist activity works and its contribution to the formation of macroeconomic magnitudes in the region.

The main working lines are synthesised in three:

1. To match the basic statistical information needs, either through the already existing statistical and documental information compilation or via the production of own statistics on especially important aspects for understanding tourism in Andalusia.

2. To know the impact of tourism on the regional economy through the creation of an analysis method in order to establish the relationships between tourism as an economic activity and the global Andalusian economy.

3. Prediction analysis through quantitative forecast models which allow to anticipate the evolution of demand in the short and medium term.

In the development of the statistics system on tourism in Andalusia, its orientation is clear towards the territorial disaggregation of information in all its domains and this is the aim of the last section of this paper where the Andalusian experience is studied in detail concerning tourism territorial analysis.
THE ANDALUSIAN EXPERIENCE

The main working lines carried out by Turismo Andaluz Statistics and Market research Department are analysed below.

To match the basic statistical information needs

This working line is founded on four basic aspects:

1. Information compilation and treatment
2. Tourist demand analysis
3. Tourist supply analysis
4. Tourism territorial analysis

These four aspects were not fixed a priori, but their choice has been conditioned by the needs which have been observed by the Andalusian Government Tourism, Commerce and Sports Department, hereunder the Andalusia tourism administration. At an early stage, to prevent different administrative departments for making the same efforts, attention was focused in analysing the main statistical information sources that can provide data of interest about the tourist sector in the region. Statistics development management demands, therefore, a thorough study on information demand and existing sources.

Once the basic aspects of the tourist supply and demand are met with these information sources, it is necessary to have a strategy for choosing projects which consider feasibility and cost-benefit aspects, so as to use the available resources in an optimal way. The development of the statistics system of Tourism in Andalusia has evolved towards a deeper development of the tourist demand and supply, as well as towards the tourism territorial analysis of Andalusia.

Information compilation and treatment

The first step to take is to analyse the information provided by the external bodies of the region itself. In this way, contacts are established with the three big tourist information centres at the national and international levels: the World Tourism Organisation, the National Statistics Institute and the Spanish Tourism Institute. As well, supplementary information for tourism analysis is also compiled which is provided by institutions like AENA (Spanish Airports and Air Traffic Control), OECD (Organisation for Economic Cooperation and Development), IMF (International Monetary Fund), etc.

At the Autonomous Region of Andalusia level, the institutions generating their own information sources relevant to tourism analysis are the Andalusia Institute of Statistics (IEA) and the Andalusia tourism administration.

Regarding the first case, Turismo Andaluz has closely cooperated in its start-up with the IEA through the Survey of the Tourist Situation of Andalusia (ECTA) and its methodological revision. This source provides base information on the tourist demand, its aim being, according to an IEA methodological note, to know the evolution and components of the type of expenditure incurred by tourists, as well as their opinion about their stay in our region.
Amongst its general characteristics, should be pointed out:

1. Quarterly continuous survey (four surveys per year).
2. Short-term trend indicator, focused in short term movements of the variables which it analyses.
3. The survey is addressed to understanding the profile of the tourist visiting Andalusia, their expenditure and evaluation of the trip.
4. It is carried out by establishing survey points for information collection.

Concerning the information provided by the tourism administration itself about supply, the Andalusia Tourism Registry (RAT) should be highlighted, which provides information on the tourist supply in Andalusia. According to the 15th December 1999, 12/1999 Act of Tourism, Chapter II, article 34, Aim of the Andalusia Tourism Registry, this registry is made with the purpose of registering:

a) Tourist accommodation establishments.
b) Tourist catering establishments.
c) Tourist intermediation companies.
d) Tour guides.
e) Associations, foundations and entities whose essential aim is the promotion of tourism.
f) Tourist offices, in accordance with the provisions of this Act.
g) Conference halls/centers in Andalusia.
h) Leisure complementary supply determined by the regulations.
i) Any other establishment or person as, due to their relationship with tourism, is determined by the regulations.

This is the main information source as regards the Andalusian tourist supply analysis; it is as well an essential source for many other statistical activities developed in Turismo Andaluz.

Tourist demand analysis

The ECTA meets the basic needs of information about demand. In spite of the fact that it is actually an IEA operation, the Andalusia tourism administration has been closely cooperating since it was started in 1995, as well as in its further methodological revisions. In the same line, Turismo Andaluz makes specific uses of the ECTA database in order to obtain information on specific aspects of tourism, such as nationality, motivation or specific segment breakdown, zoning, etc.

The development in the tourist demand study has grown towards the analysis of:

- Tourist Segmentation
- Tourist Follow-up Survey
- Event Tourism
- Tourist Market Study at Origin
- One-day visitor demand

Tourist segmentation

The level of welfare reached by the present society has diversified consumption habits, significantly affecting tourism which tends to be more dynamic and complex than before. As a consequence of these changes, there is a change in tourists’ behaviours, motivations and ways of travelling causing the identification of “tourist segments”, which are defined as consumer groups who share common characteristics.
Identification of the different segments is nowadays a task demanded by both public and private sectors, as the more the demand consumption patterns are known, the better the supply will adapt to it and the more efficient the different tourist policies carried out by administrations will be. Therefore, there is a clear need to obtain statistical information for the short-term and long-term trend analysis of the tourist segments with significant relevance in Andalusia.

A first approach to segment study was carried out from specific uses of the ECTA. These early analyses allowed for the optimisation of existing resources by means of some changes in the questionnaire to be able to identify the main segments:

- Sun and beach
- Cultural
- Nature and/or rural

However, even though this tool provides with very useful information, it shows some limitations, such as:

- Lack of territorial disaggregation
- It does not provide with information about more specific quantitative and qualitative aspects according to each type of tourism characteristics.
- It does not provide with information of the total number of tourists and expenditure, in order to understand the segment’s contribution to tourism in Andalusia.

Therefore, new statistical operations were implemented for those segments which are considered of interest. An information generating tool has been created for Nature and/or rural and cultural tourism² (2003), Flamenco tourism (2004), Golf tourism (2005), Nautical Tourism (2006), Camping and Health and Beauty tourism (2007).

There are two methodological drawbacks that must be overcome when analysing tourist segments:

1. **Quantification/estimation Framework**: quantifying the number of tourists who arrive in Andalusia for each tourist segment depends on the chosen technique to define the segment in question. For example, segmentation can be made according to motivations (rural, cultural, health and beauty) to carried out activities (golf), to demographic characteristics (youth tourism) or to the type of accommodation used (camping). If segmentation is made on the basis of motivation or demographic or socio-economic characteristics, elevation should be founded on a proportion of total demand with the specific characteristics of the segment under study. If, on the contrary, segmentation is made on the basis of carried out activities or the type of accommodation used, it is necessary to carry out a supplementary research on the supply. For instance, for health and beauty tourism, nautical or golf tourism, it has been necessary to deliver a survey in the establishments offering this type of services in order to establish a level of demand.

2. **Survey points**: the choice of survey points will be determined by the type of tourism under study. When segmentation is made according to the activities carried out, allocation of survey points is clearer as they should be situated near the place where these activities are carried out; in these cases, it is necessary to have the supply’s cooperation as permission would be needed to use their facilities or their surroundings. If segmentation is made on the basis of demographic, socio-economic or motivational characteristics, allocation of survey points is not so easy to establish, as it is necessary to identify those areas with a higher flow of the tourist segment under study, which is not always simple.

Nowadays, the study on the different tourist segments is done through statistical operations which are designed differently depending on the specific segment to deal with. However, all of them basically use a demand survey with a methodology comparable to ECTA, so that the results obtained for the different tourist sectors can be equivalent with those obtained for the total average tourist in Andalusia. The main variables to study are, therefore, the same ones as analysed in ECTA: place of residence, tourist’s profile, average stay, expenditure, expenditure composition, mode of transport, type of accommodation, trip organisation, trip degree of satisfaction, quality level of stay, ways to know destination, etc.

**Tourist follow-up survey**

The Tourist Follow-up Survey (EST) is an operation, similar to ECTA, addressed to tourism demand. It is carried out at Easter and before 2007, it was also done for July, August and September, thus meeting the highest tourist flow periods in Andalusia.

The aim of this operation is to reinforce the information provided by ECTA for certain periods when the latter did not provide enough information. Until the year 2007, this effort was necessary both at Easter and in summer months, in the latter case for obtaining monthly information instead of the quarterly data offered by ECTA. By means of this operation, the tourist activity could be sounded out more continuously during the summer period. At present, owing to the expansion and redefinition of ECTA sample, it is not necessary to make this effort and it is only made at Easter.

As these surveys are complementary operations to ECTA, a homogeneous methodology is used regarding the latter, so that the obtained results can be comparable. The main variables to study are, therefore, the same ones as analysed in ECTA: place of residence, tourist’s profile, average stay, expenditure, expenditure composition, mode of transport, type of accommodation, trip organisation, satisfaction degree of trip, quality level of stay, ways to know destination, etc.

**Event tourism**

The objective of this activity, is to offer both quantitative and qualitative information about the tourists who visit Andalusia motivated by the celebration of artistic, cultural or sports events and measure its economic profitability. The aim is to make more specific studies which lead to a better understanding of these groups of tourists who share the same motivation, in order to better adapt the tourist supply and policies.

ECTA and Tourist Segment Surveys have been the foundations to develop this Event Tourism project which analyses in detail a very specific type of tourism to get to understand how important it is to develop big events for tourism in Andalusia.

This statistical operation allows us to know the event tourist’s profile and behaviour and estimate the economic impact of tourism visiting Andalucia for the celebration of important sports and cultural events, offering the public and private stakeholders a very useful tool to understand its profitability and make decisions for future events.

Amongst the analysed events there are those celebrated regularly (Andalusia Volvo Masters Golf Championship, Jerez Motorcycle Championship and Flamenco Biennial) and those considered of a punctual interest by the Andalusia tourism administration (International Horse Fair, 1999 World Championship in Athletics, Fisa World Rowing Championship 2002, 2004 Davis Cup Final, Golf Open of Spain, I Flamenco Biennial in Málaga).
The target population of the study are Andalusian Region resident or non-resident tourists who attend the sports or cultural events to analyse. The survey is addressed to all those people qualified as tourists, that is, those who have their usual residence away from Andalusia and those who usually live in Andalusia but move from their usual environment to enjoy a sports or cultural event. The visitor is classified as a tourist or as a one-day visitor, these being identified through random counting, for each event, of respondents until covering the total sampling of tourists, making a difference between residents and one-day visitors. In this latter case, information will be requested about origin, group size and daily expenditure.

The main variables analysed are tourist's profile, residence, socio-demographic characteristics (sex, age, employment situation and profession), type of accommodation, mode of transport, average stay, trip organisation, tourist expenditure (expenditure at origin and destination), expenditure composition, degree of satisfaction (quality of destination and event) and degree of repetition.

Tourist market study at origin

The Andalusia tourism administration has the intention of developing its understanding of our major markets, as it is interesting to know not only about the behaviour of these markets when they come to Andalusia, but also the tourist consumption habits of these countries, the strategic positioning for the Andalusian tourist destination and the degree of knowledge and image of Andalusia. To achieve that, origin studies have been made of the main incoming tourism countries towards Andalusia: Spanish (2005 and 2006), German, British, French, Portuguese (2005), Nordic Countries (2006) and Italian (2007) markets.

This information is used as a means for designing promotion strategies of the Andalusian tourist destination. These studies have been made at origin since 2005 with common methodologies and purposes.

Tourist Market Studies at Origin are structured in two stages: qualitative (through discussion groups) and quantitative (through a phone survey to the resident population).

The variables analysed in these studies are: socio-demographic characteristics, travel habits, length of trips, motivation, tourist destinations visited, characteristics of last long trip abroad and to Andalusia (time in advance for trip booking, annual distribution, length of stay, reasons defining the trip, type of accommodation and way of contracting it, mode of transport and way of contracting it, type of trip organisation, information channels, tourist expenditure, vocational group composition, general degree of satisfaction, quality level of certain aspects of destination, carried out activities), intention to travel to Andalusia within the next three years and image of Andalusia.

One-day visitors

The priority of studying tourism rather than one-day visitors, as well as the historical difficulty for its measurement, has traditionally left this phenomenon out of statistical studies. Nevertheless, one-day visitors are a relevant part of tourist demand and this is shown in the UNWTO’s framework on the production of Tourism Satellite Accounts (TSA).

A preliminary approach to this phenomenon was made in 2007 which will allow us to improve and polish the methodology to apply as the intention is to consolidate it as a continuous statistical operation. This first experience has consisted of two survey procedures:
• For detecting one-day visitor movement of residents in Andalusia, a survey is made to a panel of households.

• For detecting the one-day visitor movement within Andalusia of residents in the rest of Spain and abroad a set of ad-hoc surveys is made throughout the year at different survey points.

The variables under analysis are: socio-demographic profile (sex, age, employment situation, professional category), nationality, main reason, mode of transport, trip organisation, use of the Internet, etc.

Tourist supply analysis

The main source of information providing data on the Andalusian tourist supply is, as explained above, the Andalusia Administrative Record. Therefore, it is a statistical good use of an administrative record which, as such, requires periodical and continuous update managed by Turismo Andaluz1.

The development in the tourist supply study has focused on the analysis of:

• Tourist Activity Index of Andalusia (INACTUR)
• Specific Occupancy Survey
• Tourism Employment in Andalusia
• Survey on the Technological Situation of the Tourist Supply in Andalusia

Tourist activity index of Andalusia (INACTUR)

The need to carry out this statistical activity in Andalusia is based on the need to understand the evolution of the Andalusian tourist activity from the supply side as INACTUR is a Quantity Production Index which facilitates the follow-up of the tourist activity short-term trend in Andalusia.

Its purpose is to get deeper into the knowledge of the new reality of sectorisation of the Andalusian economy and production system through a specific indicator of the tourist activity in Andalusia referring to the stakeholders related to the accommodation, catering and complementary service supply. This operation, nowadays through internal dissemination, also contributes to the economic estimations of the Quarterly Accounting made by IEA.

The variables researched in this operation are:

• Production of the activities which are part of the tourist sector in physical units.
• Employment: Number of workers.

The informing subject for this activity are those establishments with a tourist activity in Andalusia. When raising the results, weighting coefficients are used, representing the relative weight that each activity adds to the set of activities which make up the indicator, trying to represent the tourist Gross Added Value (GAV) in Andalusia. That is the reason why the sum of weighting coefficients is equivalent to 1. The indicators produced on the basis of the collected information make use of a complex index formulation composed of the weighted sum of a series of chained simple indexes.
Specific occupancy survey (EPO)

The Specific Occupancy Survey is composed of two different types of actions. The first one, carried out before the period which is under study, intends to predict the occupancy level of hotel establishments (hotels and hotel-apartments) and rural houses in Andalusia and its provinces during short vacational periods (Christmas, Easter and long weekends). The main objective of this action is to know this variable before hand, which will help better adjust supply and demand, adapting the required resources (staff, supplies, etc.) to the satisfaction of the tourist demand. Therefore, it is especially interesting for the private sector, the public administration and other stakeholders to have a prediction of the occupancy level in specific periods with strong tourist activity.

The second action of EPO is carried out at the end of the period under study and its main aim is to understand the actual impact of the vacational period on the hotel and rural sector of the region, so as to contribute to show the real adjustment registered between supply and demand during the period under study.

Tourism employment in Andalusia

With the purpose of establishing a statistical information system that leads to the analysis and follow-up of the labour market for the main economic activities related to the tourist sector and its contribution to the Andalusian labour market through a set of indicators, the Andalusia tourism administration has been developing, amongst its working lines, an analysis on the tourist employment in the region.

To reach this objective, it is essential to observe an internationally accepted methodology which facilitates comparison with other territories. The UNWTO and the employment module of OECD represent a methodological, conceptual framework which establishes a set of variables essential for employment analysis. Both institutions support a supply perspective, taking into account employment in characteristic branches of the tourism activity.

Therefore, for studying employment in the Andalusian tourist industry, the UNWTO’s document “Methodological Framework for Tourism Satellite Account”, approved by the United Nations Statistics Division and detailed in the following table:

<table>
<thead>
<tr>
<th>Codes</th>
<th>Activities</th>
<th>Codes</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>551</td>
<td>Hotels</td>
<td>622</td>
<td>Non-scheduled air transport</td>
</tr>
<tr>
<td>552</td>
<td>Camping sites and other types of accommodation</td>
<td>632</td>
<td>Other activities related to transport</td>
</tr>
<tr>
<td>553</td>
<td>Restaurants</td>
<td>633</td>
<td>Wholesale travel agency activities</td>
</tr>
<tr>
<td>554</td>
<td>Beverage establishments</td>
<td>711</td>
<td>Rental vehicles</td>
</tr>
<tr>
<td>555</td>
<td>Collective dining rooms and pre-cooked food provision</td>
<td>712</td>
<td>Other means of transport rental agencies</td>
</tr>
<tr>
<td>601</td>
<td>Railway transport</td>
<td>923</td>
<td>Other artistic and entertainment activities</td>
</tr>
<tr>
<td>602</td>
<td>Other types of land transport</td>
<td>926</td>
<td>Library, archive, museum and other cultural institution activities</td>
</tr>
<tr>
<td>611</td>
<td>Sea transport</td>
<td>927</td>
<td>Sports activities</td>
</tr>
<tr>
<td>612</td>
<td>Inner navigation way transport</td>
<td>928</td>
<td>Diverse types of recreational activities</td>
</tr>
<tr>
<td>621</td>
<td>Scheduled air transport</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: TSAMR (UNWTO) and Economic Activity National Classification 1993, Revision 1.
In this context, there are several statistics sources on employment in Spain, their difference lying on the perspective adopted to look at the labour market. Their usefulness for analysing tourist employment in Andalusia is mainly conditioned by two aspects:

- Territorial breakdown: it is useful to use sources that provide sufficiently representative data for Andalusia and its provinces.
- Disaggregation by branches of activity: once the previous premise has been met, as the objective is to analyse employment in the tourist sector, the sources should be able to offer a breakdown by branches of activity (SIC).

Out of all the sources observed, the chosen one has been the Active Population Survey (INE) as it is considered to be the one which better adapts to the objectives of this analysis. On the basis of this information, it is possible to provide an employment analysis for andalusian tourism sector as well as a study of its evolution by an specific use made of this survey by Turismo Andaluz.

Survey on the technological situation of the tourist supply in Andalusia (ESTOTA)

Technological development has become an essential requirement in the evolution and promotion of any economic activity. So, progress in science in the tourist activity causes concepts such as efficiency and efficacy to acquire relevance, especially in the marketing field. Therefore, a good knowledge of new technologies facilitates the emergence of new strategic performance techniques which favour the tourist activity.

The new requirements of tourist demand are increasingly characterised by the behaviour patterns which are based on a greater use of new technologies. The use of the Internet, the innovative contracting ways and the search for differentiation, amongst others, are trends extended in the tourist demand which make it an obligation to be continuously updated, dynamic and adapted to the sector. It is therefore necessary to produce more specific studies which lead to a better knowledge of how supply can meet the new situation, for a better adaptation of both supply and tourism policies.

With the aim of analysing the level of introduction of new technologies and electronic commerce in a destination’s tourist supply promotion and marketing, the ESTOTA stands as an operation which does not only offer very relevant information on the basis of the main variables identifying the situation of the Andalusian Tourist Supply from a technological point of view, but it also provides an indicator of the supply evolution in time.

The ESTOTA tends to analyse the use of new technologies and electronic commerce by the Andalusian tourist supply, from collective accommodation (hotels, pensions, apartments, camping sites and rural houses), to travel agencies; therefore, the target population under study is the community of establishments which compose the regulated tourist supply in Andalusia, understanding as such the ones registered in the Andalusia Tourism Registry, which are open on a seasonal basis during the period of the survey, delivered by means of a telephone interview.

The variables to analyse are: use of IT tools, existence of a web page in the establishment, existence of own domain, type of connection to the Internet, web page available in the near future, Internet drawbacks, knowledge of electronic commerce, use of electronic commerce, invoicing via electronic mail, benefit of electronic commerce, disadvantages of electronic commerce.
Tourism Territorial Analysis

It is clear that the sector managers and planners, as well as those in charge of territory management policies and also private stakeholders, need to rely on statistical information concerning the different territorial domains.

The Andalusia tourism administration’s experience in this field is analysed more deeply in section III in this paper.

Tourism Economy: Tourism Satellite Account in Andalusia.

The need to gather reliable data on the importance and scope of tourism by using the same concepts, definitions and measurements as other industries and meet the information demands from the perspective of the economic analysis of tourism, made the Andalusia tourism administration think about the need to produce a complete Tourism Satellite Account. Information able to quantify the economic activity of tourism in Andalusia and its relationships with other activities of the Andalusian economy can be obtained, by implementing the European System of National and Regional Accounts (ESA-95) as a methodological framework for making up synthesis operations concerning the Andalusian economic and production structure.

The objective of this activity is focused in one of the main needs of tourism policy: the relationships between tourism and economy. The growing importance of tourism in the creation of basic macro-magnitudes of an economy requires the development of statistical methods which can identify the type of relationships established between tourism and economy. Meeting that need requires the definition of an analysis framework which is coherent from an economic point of view and comparable in a double sense. Firstly, with the ones in other areas and countries. Secondly, with the global statistics of the country or region of reference. In both cases, it is essential to develop a conceptual and methodological framework which is internationally homogeneous and harmonised. In principle, national account systems meet these requirements, although with many drawbacks which Tourism Account Systems actually tend to overcome.

The Satellite Account is an accounting system referring to concepts which complement those of the main system of accounts of a country. It is characterised by linking the concepts used in the monetary system of a country and providing the basis for the creation of relevant and sufficiently aggregated indicators of the economic activity.

The tourism satellite account of Andalusia\(^3\) is a statistical-economic model for the analysis of the Andalusian tourist complex. This is defined as a set of activities amongst which relationships between supply and demand are established. Besides, it gives information about the volume of activity induced by tourism in other production branches, impacts on production and employment.

For the production of the Andalusia Tourism Satellite Account (ATSA) tourist products and activities have been studied on the basis of information from the Annual Regional Accounting of Andalusia (Input/Output Table), the Tourist Situation Survey of Andalusia, the Household Budget Survey, the Population and Housing Census, the Tour Operator Survey and the Tourist Movement Statistics of Spaniards (regional FAMILITUR).

The main variables of the ATSA are:

- Macroeconomic aggregates to describe the economic scope and importance of tourism, such as Tourism Added Value and Tourism GDP, consistent with similar aggregates for the whole economy. Tourism Added Value is defined as the added value generated by the tourist activity branches and other branches of the economic activity as a response to internal tourist consumption. And Tourism GDP is defined as the sum of the added value, at basic prices, generated in all activity branches, as a response to internal tourist consumption, and the amount of net taxes on products and imports included in the value of that expenditure.

- Detailed data on tourist consumption and how this is met by domestic supply and imports, included in the general tables of the Regional Accounts, both at current and at constant prices.

- Detailed production account of the tourist activity branches, including data on employment, correspondence with other production economic activities, and gross capital formation, that is, the acquisition of capital goods.

- Necessary basic information for the development of models of tourism economic impacts.

- Correspondence between economic data and other quantitative information about tourism, such as number of arrivals, existing supply of beds, etc.

This work area is dealt with in more detail in the paper by Professor Luis Robles “Creating Regional Tourism Satellite Accounts: the case of Andalusia”, presented in session III of the International Conference on Tourism: knowledge as value advantage of tourist destination, Málaga – October 2008.

**Demand forecast**

Knowing future trends of the evolution of tourism is very interesting information for all stakeholders of the sector, both public and private, as they are a starting point for adopting future strategies. As a response, there is this prospective analysis working line, offering tools that provide advanced indicators of the tourist activity of the future.

**Forecast generation model (hotel movement)**

It is based on quantitative prediction models which allow for anticipating the evolution of demand in the short and medium term.

The series in use are those provided by the National Statistics Institute exclusively related to hotel tourism. The choice of these variables is due to their suitability for the application of quantitative methods as they are very homogeneous and extended-in-time series, for the same survey has been made since 1977 without any important methodological variations. Nevertheless, experience has proved that these predictions are a good indicator of the behaviour of tourism in general, as hotel tourism accounts for approximately 50% of the total tourist demand of Andalusia.

This information has been satisfactorily offered since 1997 relying on a set of models of number of nights, occupancy level and number of beds. To that aim, TRAMO and SEATS (Gómez, V. and A. Maravall, 1997) programmes are used with their 2005 updated version.
These programmes are mainly addressed to the analysis of monthly time series and they are applied for all the provinces and for the whole of Andalusia.

These three-month-in-advance forecasts are published every month in the Monthly Situation Report\(^1\) producing, in general, data matching reality, with greater accuracy for Málaga province and the whole of Andalusia in the short term, as the number of room-nights is higher.

**Forecasts of airport movement\(^1\)**

These forecasts are made by using the AENA database from the flight optimisation, coordination and programming system (GESLOT), concerning the aircraft arrival and departure permits requested by the companies flying to and from Andalusian airports. By using this information, advanced indicators of the tourist activity can be produced especially for those markets whose tourists arrive in Andalusia directly by air. The information obtained from this database includes the country of origin, airport of origin, company of arrival, type of service and airport of arrival in Andalusia.

In spite of the fact that all passenger arrivals should not be identified as tourist movement, this information does provide a very reliable indicator of the evolution of tourism, as a high percentage of tourists coming to Andalusia use the airplane as the means of transport, this being even higher for foreign tourists. This means of transport is the most frequently used for some of the major markets, mainly British and, a little less, German.

**TERRITORIAL BREAKDOWN OF INFORMATION**

All this paper makes it clear that the Andalusia tourism administration has a set of integrated information, both of economic and tourist variables, which revolves around a specific territory: Andalusia.

In the same way as it is stated that national statistical information sources do not cover a number of aspects which are essential for understanding the actual scope of tourism in Andalusia, it is understood that this situation appears again in smaller territorial units as related to the statistics generated for the Andalusian region and that there also exists a legitimate need of knowledge with the common purpose of knowing the tourism reality of the territory under study.

In this respect, the Andalusia tourism administration has started a working line with the aim of analysing tourism from the territorial perspective in two senses, on the one hand, analysis of tourism and its relation to the territory through a Geographic Information System, and on the other hand, the generation of an indicator system applicable at tourist destination level.

In these two projects, availability of statistics data and information sources has inevitably conditioned their degree of development, although in both cases the essential key aspects were detected and their future feasibility evaluated.

**Territorial information system**

The analysis of tourism made by this operation uses other statistics activities as tools, especially the Andalusia Tourism Registry (RAT), as well as the Hotel Occupancy Survey. The basic objective is to integrate all these databases into one Geographic Information System by using the ArcView application, in order to obtain a spatial view of both the activity and the tourist or potentially tourist resources.
This activity is based, therefore, on collecting and integrating the statistical information available at present concerning different spatial domains of interest (municipal, provincial and zones), as well as both cartographic (relief, hydrologic resources, communication network, natural areas) and complementary supply information. Integration is made into a Geographic Information System in order to get indicators. The aforementioned variables have been be processed in order to have a proper format for its introduction in the ArcView programme. Some specific indicators for this activity have been made as well.

The statistical information in use comes from the RAT, which offers supply data (establishments, beds, types, categories, etc.) for all territorial domains (province, tourist area and municipalities), from the Hotel Occupancy Survey where data on tourist demand with a higher territorial disaggregation is obtained, so we only have a partial view of tourist demand distribution in the Andalusian territory, as the breakdown of tourists staying in hotels is known only for some municipalities. The necessary contents for the production of thematic maps, as well as the cartographic information (geographic relief, hydrologic resources, communication network, natural areas, etc.) are taken from the Andalusia Cartographic Institute’s Atlas of Andalusia.

All this system will in the future have the benefits from the work being carried out in Turismo Andaluz, called “Andalucía en Vivo” which will allow for the inclusion of the geo-referenced information on the Andalusian tourist resources (accommodation supply, cultural, natural heritage, etc.).

The indicators developed in this analysis and published in el Balance del Año Turístico en Andalucía¹ are those of tourist intensity in relation to the population: demand indicator (Tourists/Usual population), supply indicator (Accommodation beds/Usual population) as the average income index (tourist expenditure/usual population) cannot be carried out until obtaining the municipal breakdown of tourist expenditure, which is difficult to get.

Territorial indicator systems for a tourist destination

Andalusia presents a high concentration in the territory, the Andalusian coastal area receiving greater pressure, concerning both usual population and tourist population. This situation is also clearly observed if the built area is analysed, this being mainly on the Andalusian coastal areas and around the big capital cities.

This situation poses the need for a deeper knowledge of the relationship between tourism and territory, environment, planning, profitability of the tourist activity for the local economy, etc. This is the reason why an indicator system applicable at tourist destination level is designed, taking into account the special characteristics of the territory.

In this context, the production of an indicator system for the evaluation of the relationships of tourism with its natural, economic and social setting is a tool for detecting conflict or unbalance situations in the territory. This system also helps to prevent situations of tourist appeal or competitiveness loss, as well as go forward to a new paradigm of tourism on the basis of a new vision of sustainability in a comprehensive way.

¹
The experience developed in Andalusia, with Mr Fernando Prats’s cooperation, focused in the case of a medium tourist destination of the Andalusian coast\(^4\), where the intention was to present an image as accurate as possible of the present situation of the tourist destination, using the available statistical information.

The availability restriction of information sources caused the production of estimations with the existing data in some cases, in others variables which could be indicative of the situation were included and in other cases it was necessary to set up a specific operation in order to obtain information which did not exist from any other ways. This first approach to the production and calculation of indicators identified the lack of information which is necessary to solve in order to improve the system.

In order to get a comprehensive view, three key areas were integrated: sustainability, total tourist quality and local government.

<table>
<thead>
<tr>
<th>SUSTAINABILITY</th>
<th>TOTAL TOURIST QUALITY</th>
<th>LOCAL GOVERNMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEY THEMES</td>
<td>KEY THEMES</td>
<td>KEY THEMES</td>
</tr>
<tr>
<td>2. Attended tourist population</td>
<td>2. Tourist services and products</td>
<td>2. Information and participation</td>
</tr>
<tr>
<td>4. Tourism pressure on cultural heritage</td>
<td>4. Seasonality</td>
<td>4. Innovation</td>
</tr>
<tr>
<td>5. Water consumption</td>
<td>5. Safety</td>
<td>5. Public services</td>
</tr>
<tr>
<td>8. Land and natural/rural system preservation</td>
<td></td>
<td>8. Civic satisfaction</td>
</tr>
<tr>
<td>9. Coastal system preservation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The pilot experience focused in obtaining indicators to cover the two first key areas in order to evaluate the tourist reality as a whole and its relationships with the natural and social settings.

# A complete statistics system for the Andalusian territory

<table>
<thead>
<tr>
<th>Key themes</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Human pressure</td>
<td>Measure population density, including the maximum presence of tourists</td>
</tr>
<tr>
<td>2. Attended tourist population</td>
<td>Measure equivalent population</td>
</tr>
<tr>
<td>3. Socio-economic level</td>
<td>Economic profitability of the tourist activity in the territory</td>
</tr>
<tr>
<td>4. Pressure on cultural heritage</td>
<td>Number of visitors (tourists and excursionists) who could potentially visit each heritage unit</td>
</tr>
<tr>
<td>5. Water consumption</td>
<td>Litres of water consumed by average population</td>
</tr>
<tr>
<td>6. CO₂ emissions</td>
<td>Estimate average amount of CO₂ emitted by a tourist staying in a regulated establishment per day</td>
</tr>
<tr>
<td></td>
<td>Estimate average amount of CO₂ emitted by a tourist staying in a second home per day</td>
</tr>
<tr>
<td>7. Wastage generation</td>
<td>Amount of wastages generated by total population</td>
</tr>
<tr>
<td>8. Natural/rural system preservation</td>
<td>Estimation of non-buit area</td>
</tr>
<tr>
<td>9. Coastal system preservation</td>
<td>Estimation of non-built area at the beach front</td>
</tr>
</tbody>
</table>

## SUSTAINABILITY

<table>
<thead>
<tr>
<th>Key themes</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Urban Setting</td>
<td>Estimate tourists’ opinion about urban setting of destination</td>
</tr>
<tr>
<td>2. Tourist services and products</td>
<td>Estimate tourists’ opinion about tourist supply of destination</td>
</tr>
<tr>
<td></td>
<td>Quality of regulated accommodation supply according to establishment category</td>
</tr>
<tr>
<td></td>
<td>Quality of beachs by granting blue flags</td>
</tr>
<tr>
<td>3. Diversification</td>
<td>Evaluate tourist use of diverse territory resources others than sun and beach</td>
</tr>
<tr>
<td>4. Seasonality</td>
<td>Estimation of seasonal concentration of tourist demand</td>
</tr>
<tr>
<td>5. Innovation</td>
<td>Degree of introduction of new technologies in tourist promotion and marketing of a destination</td>
</tr>
<tr>
<td>6. Safety</td>
<td>Provision of resources provision for civic safety</td>
</tr>
<tr>
<td></td>
<td>Degree of safety of destination</td>
</tr>
<tr>
<td>7. Supply and market vulnerability</td>
<td>Dependence on intermediaries</td>
</tr>
<tr>
<td>8. Tourist satisfaction</td>
<td>Estimate tourists’ opinion about general image perceived of destination</td>
</tr>
</tbody>
</table>
As each separate indicator shows one aspect or partial reality which allows for knowing only one specific aspect of tourism, through the architecture of the proposed system we try to maximise the analysis power given by a set of variables in order to understand the complex reality of tourism. Therefore, the aim is to carry out a comprehensive evaluation of the tourist situation of the Andalusian destination and its perspectives to achieve a more sustainable development, by identifying key areas and processes in order to help decision making for proper tourism planning.

This project is also dealt with in Mr Fernando Prats’s paper “An integrated assessment of sustainability in tourist destinations”, presented in session IV of the International Conference on Tourism: knowledge as value advantage of tourist destination, Málaga – October 2008.

Summing up, Turismo Andaluz’s experience in the tourist analysis of the territory has been carried out on the basis of two approaches: the first one, with a complete view of the Andalusian territory, to achieve a comprehensive perspective of the extent in which tourism affects each and every municipality of Andalusia. The second one, with an approach of tourist destination gathering supply, demand, physical and natural resource use, etc. information and indicators. Both approaches provide relevant information concerning the relationships between tourism and territory. We can draw the following conclusions out of the experience of the development of both projects:

In the first case, richness of analysis lies on the supply side, as it is actually possible to know its distribution all over the territory of Andalusia at a municipal level, including its exact geographic location. This is feasible only for the case of regulated supply by means of administrative registry (RAT) which includes information about all the establishments comprising the tourist supply of Andalusia. There is not a specific information source for knowing about non-regulated supply, so there are only possible estimations of it, which makes it difficult to get to a municipal knowledge of this supply.

In order to obtain information about the distribution of demand in the territory, it is necessary to take into account the high cost for gathering information in the smallest territorial unit (municipality), taking into consideration the fact that there are 800 municipalities in Andalusia. This option, considering costs, is not feasible in most cases. In some cases, for those municipalities with a higher tourist importance, there is information about demand, but only that using regulated supply (INE surveys). For these reasons, a more realistic model should be chosen for the case of tourist demand and its territorial distribution analysis, as it is difficult and expensive to get to know the exact level of demand for certain disaggregation levels.

Nevertheless, in spite of this difficult task, it is necessary to achieve some minimum knowledge which allows for the comparison amongst territories or tourist destinations and their aggregation. Nor is this task easy, since it is not feasible even to know such basic information as the number of visitors: what is a tourist for Andalusia can be an excursionist for a province, area, etc.

It is clear that this information is necessary, and the Andalusia tourism administration is at present carrying out coordination actions with the official bodies and institutions which generate statistical information at the sub-national level. This offers the benefits of agreement in definitions and methodologies, as well as the good use of economic resources favouring comparability amongst territories.

At a general level, and particularly in territorial analysis, the relevant aspect of the creation of a system is not the achievement itself of a final product, but carrying it out with a clear orientation so that partial results will be harmonic, homogeneous and integrated, basic principles of any complete statistics system.