

# Environmental indicators to improve sustainable tools in tourism sector

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# Environmental Indicators to Improve Sustainable Tools in Tourism Sector

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Abstract Tourism is an important source of revenue for the economy of a country because it brings money to the State which use it as a source to improve services, buildings, facilities and tourism destinations. Its importance extends to a variety of studies and researches aimed to a better and more sustainable development. The aim of this study is to analyze environmental impact caused by tourism, thanks to the use of indicators, which varies regarding the tourism destination they are linked with. In particular, some environmental indicators on the city of Catania, in East of Sicily, are analyzed and their interaction could give a wide panorama of Sustainability in Catania and to identify all the advantages on sustainable tourism tools in Sicily.

## INTRODUCTION

Tourist destinations have been facing, in the past few years, more and more social, cultural, economic, and environmental challenges. To help them measure their performance in relation to sustainability, which is essential, the European Commission has developed a 'European Tourism Indicators System' (ETIS). This is a system of indicators suitable for all tourist destinations, encouraging them to adopt a more intelligent approach to tourism planning. It is:

- a management tool, supporting destinations who want to take a sustainable approach to destination management;
- a monitoring system, easy to use for collecting data and detailed information and to let destinations monitor their performance from one year to another;
- an information tool (not a certification scheme), useful for policy makers, tourism enterprises and other stakeholders (1).

The evolution of environmental legislation, at a European, national and regional level, towards a regulation of local environmental impacts, together with the growing attention to the issues of Sustainable Development, aims at optimizing the use of resources and reducing the effects on the environment (2-3).

The process of sustainable development and the improvement of the planning process is directly linked to the use of indicators, that help to evaluate and co-ordinate sustainable development. Indicators can be a useful tool for all three aspects of sustainable tourism development: ecological, economic and social. The World Tourism Organization (WTO) recently proposed the use of selected indicators for sustainable tourism in order to be useful to tourism sector's managers and administrators. The selected indicators are demand-driven and must be comparable for all destinations; which means, that must be able to differentiate regarding the context in which are operating. Indicators' scale of application varies from local, regional and national and for this reason, it is not always possible to use the same indicators switching scales.

The term "indicator" identifies an instrument able to simplify information related to more complex phenomena, thus favoring comprehension, communication and comparison, making visible a trend or a phenomenon that is not immediately perceptible (4).

In literature there is the distinction between "indicator", a parameter or a value derived from parameters that describes the state of a phenomenon and "index", set of parameters or indicators aggregated and weighed (5-6).

Environmental indicators are numerical data and qualitative information that allow to evaluate the performance and effectiveness of a company's activity, aimed at safeguarding the environment.

Environmental indicators are divided into two categories:

1. environmental performance indicators;
2. environmental impact indicators.

*Environmental performance indicators* are defined as those quantitative and qualitative values that make it possible to evaluate the effectiveness and efficiency in the use of the environmental resource by a company or an entire production sector; they are physical indicators and refer to the consumption of raw materials, energy and emissions. They can be divided into three diverse groups: eco-financial indicators, management indicators and process indicators.

*Eco-financial indicators or economic efficiency indicators* allow to evaluate the economic efficiency of the company in the management of environmental variables. Each company, even for internal use only of these indicators, must define the criteria for the collection and interpretation of data on environmental expenses.

*Management indicators or environmental efficiency* allow to evaluate the efficiency of the environmental management or the ability to achieve environmental performance goals; thanks to these indicators, the company controls the degree of conformity to legislation and its own environment policies.

*Process indicators* are quantitative measures used by a company to identify the areas in which are the main environmental damages occur.

*Environmental impact* caused by a firm's activity, as we already mentioned, are measured and calculated by these indicators that can be distinguished into physical and monetary indicators.

*Physical indicators* measure a firm's activity contribution on the environmental changes on a local and global scale.

Instead, *monetary indicators*, allow a company to translate the changes caused in the natural environment into economic terms and thus integrate the environmental variable into the decision-making processes, traditionally based on economic considerations.

In general, performance indicators make it possible to compare the environmental performance of companies with the standards set by the relevant regulations and thus allow the company's environmental policy to be assessed (7).

## MATERIAL AND METHOD

Local authorities have become aware, first through the "Seventh European Union Environmental Action Program", and subsequently with the "Aalborg Charter", to base their decision-making and control activities on several types of indicators. The Seventh Environmental Action Program The program entered into force in January 2014; it is now up to the EU institutions and the Member States to ensure it is implemented, and that priority objectives set out are met by 2020.

The 7th Environment Action Program (EAP) will be guiding European environment policy until 2020. In order to give more long-term direction, it sets out a vision beyond that, of where it wants the Union to be by 2050. It identifies three key objectives:

- To protect, conserve and enhance the Union's natural capital;
- To turn the Union into a resource-efficient, green, and competitive low-carbon economy;
- To safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing.

Four so called "enablers" will help Europe deliver on these goals:

- Better implementation of legislation;
- Better information by improving the knowledge base;
- More and wiser investment for environment and climate policy;
- Full integration of environmental requirements and considerations into other policies.

Two additional horizontal priority objectives complete the program:

- To make the Union's cities more sustainable;
- To help the Union address international environmental and climate challenges more effectively (8).

The Aalborg Charter was initially signed by 80 European local governments and by 253 representatives of international organizations, national governments, scientific institutes, consultants and individual citizens. With the signing of the Charter, the European cities and regions are committed to implementing Agenda 21 at local level and to develop long action plans term for a sustainable development (9).

It is therefore necessary to choose the most suitable indicators to be correlated with the environmental aspects and repercussions of the various sectoral policies. The choice of physical indicators for the construction of the environmental accounting system of a local authority may take place mainly on the following reasons:

- identification of areas and sub-funds for reporting;
- selection of a list of various indicators;
- extrapolate a set of key indicators;
- definition, from the indicator's list, of a summery synthetic index.

In general, indicators can be divided into two groups:

1. Absolute: which express a quantity expressed in its unit of measure; they are more frequent but less relevant because they do not take into consideration possible variation;
2. Relative: which indicate a quantity in relationship of another one and are able to compare the efficiency of the process during different years.

The European environmental agency has recognized various main groups of indicators: descriptive indicators (they quantify the environmental state) such as motorization rate, per capita emission of CO<sub>2</sub>; performance indicators (which refers to a target and measure its distance) such as % of separate waste collection on total waste produced, number of beds in hospital facilities; efficiency indicators such as all the expensive cause by the production; global welfare indicators (which aggregate the social, economic and ecological dimension) such as Per capita GDP; punctual indicators (which represents the minimum aggregation sets of data in large lists); theme indicators (which reduce the information in the construction of the indicators, leading to a development of a small dimension set of each environmental policy problem) such as environment, climate; systematic indicators (projected to evaluate a single number to understand rather a system is correctly working or not) (10-11).

In order to fulfil the practical aim of this study, we could set two main objectives. First, develop an indicator system that is easy to implement, measure, and interpret for application towards improving the sustainability of tourism activities in established destinations. Furthermore, the proposed system allows users to assess the sustainability of activities belonging to the cultural tourism segment. To facilitate information use and interpretation by managers and the general public, it is possible to construct composite indicators of sustainability by using the methodology of the composite indicator of goal programming. Specifically, it is shown how to use this methodology to evaluate the sustainability aim in tourism destinations. A second objective is to show how local agents can use indicator systems and composite indicators in current tourism policy making. Cultural tourism may contribute to seasonally adjusted tourism and to generating benefits for the local community (12).

Several sets of principles for sustainable tourism have been proposed in the literature to operationalize the term of sustainable tourism and facilitate its implementation. Most of the sets refer to aspects such as involving local communities, sustainable use of the resources, planning for tourism, promoting information and research etc. The set of principles proposed by Eder, is chosen here to guideline the definition of indicators. The analysis and discussion provided in its original source for these principles might seem to be rather tourism-centric, focusing extensively in the tourism sector.

The principles of sustainable tourism are as follow:

1. Using resources sustainably;
2. Reducing over-consumption and waste;
3. Maintaining diversity;
4. Integrating tourism into planning;
5. Supporting local economies;
6. Involving local communities;
7. Consulting stakeholders and the public;
8. Training staff;
9. Marketing tourism responsibly;
10. Undertaking research (13).

Among several of the principles of sustainable tourism there is a strong relationship. This is not surprising given the complexity of tourism, the interrelation in the different components of sustainable development and the need for holistic approach (14-15).

The impact of tourism on the environment can be defined in terms of "environmental and social pressure": greater turnout of vehicles, greater presence of people, increase in waste production and increase in the construction of new accommodation facilities. Surely it is not easy to understand, study and evaluate the effects, so much so that although several studies have been done there is not a real "method" to be followed as there are no models of

environmental impact assessment (EIA) generally accepted. The EIA is a process by which we try to verify that a given project can develop by limiting and controlling its negative effects. It is an evaluation aimed at highlighting the consequences of a given intervention so that, in this case, the project can be modified before it is put in place without having to go to the point of trying to correct the errors after the project has been started. It is therefore important to apply this procedure also to developments in tourism projects.

Some environmental effects, both positive and negative, can be generated by tourism. Speaking of positive effects, the main consequences can be:

- Protection of natural areas, beaches and coastal;
- Creation of national parks;
- Restoration and preservation of historical structures, sites and monuments;
- Conservations of forests;
- Environmental awareness of both citizens and tourists.

On the other hand, negative impacts can be:

- Increased hunting and fishing with effects on fauna and flora;
- Destruction destroyed or damaged;
- Excessive production of waste and unpolished forms of disposal and therefore soil, water, atmospheric and acoustic pollution;
- Disfigurement, erosion, damage to ancient monuments by tourists;
- Disfigurement of the landscape (16).

In conclusion, despite the performance indicators allow a faster and better circulation of environmental information within the company and favor, the strengthening of environmental policy, the development of the management system, the improvement of relationships with suppliers, the reduction of emissions and related costs of abatement and prevention, however, until now, they have been used as a communication tool only leaving their application for managerial purposes out of a firm's policy. Environmental management absolutely needs numbers and comparable measurements and not only qualitative data or perception (17).

## **CASE STUDY: THE CITY OF CATANIA**

The case study of this paper is the city of Catania. In this chapter the morphology, the historical and economic development with a brief description of natural, historical and cultural resources of the city are going to be introduced.

Catania is a city located in the middle of the Ionian coast in the Eastern Sicily; it extends between the Mediterranean Sea and Mount Etna, the highest Volcano in Europe (3.3.50 m), dominating the alluvial land bounded by Simeto and Dittaino. In the city center of Catania, is possible to notice Greek and Roman ashes due to their invasion several years ago.

Catania was founded in 729 f.C. by Greek colonies coming from Calcide in Eubea: after the foundation on Naxos in 734 f.C., they, thanks to their strengths, drive away Sicilian and built the city of Leontini and Catania. During the first Punic war, Catania was conquered by the Roman Empire in 263 f.C. which enabled the city to acquire prestige and importance on that time. After the fall of the Roman empire, Catania was dominated by Ostrogoths, Byzantines, Saracens and Normans thanks to which had an era of splendor and health; this period was followed by the domination of Swabians who, on the other hand, destroyed and plundered it in 1197 and 1232.

Under the Aragonese dynasty it was the capital of the Kingdom of Sicily, and from 1434, at the behest of King Alfonso V, it was the seat of the oldest University of the island, the Siciliorum Gymnasium. In the course of its history it has been repeatedly affected by volcanic eruptions (the most impressive, in historical times, is that of 1669) and by earthquakes (the most catastrophic ones remembered were those of 1169 and 1693). The city was able to overcome these natural disasters thanks to the Spanish domination followed after the Aragonese dynasty.

Catania has been a native or adoptive homeland of some of the most famous Italian artists and writers, including the composers Vincenzo Bellini and Giovanni Pacini and the writers Giovanni Verga, Luigi Capuana, Federico De Roberto, Nino Martoglio, Vitaliano Brancati. The baroque of its historic center has been declared a UNESCO World Heritage Site.

Catania, for its economic activity, represents the biggest and most important center of Sicily; it has acquired this position thanks to its commercial center, which is the richest of the island, and its commerce, that goes beyond the provincial boundaries.

One of the driving sector of the city is the primary sector. Agriculture is very spread along the Piana di Catania with the cultivation of vegetables, fruit, wine grapes and citrus fruits; however, its national importance is due to the production of wine D.O.C. and citrus fruits.

In the past, until 1938, Catania was known as the main sulfur industrial center of the entire Island. Unfortunately, after the sulfur crisis, the industrial assets of the city deeply change focusing its activity in assorted products such as: agriculture, pharmaceutical, chemical, mechanical and electronic.

In the latest years, the tertiary sector has grown visibly, especially speaking of tourism. The city and its natural resources are considered attractive for tourists; its artistic and cultural heritage, the proximity to beautiful beaches and majestically Etna have been fundamental for the growth of the city. The port has now lost the key role of exportation of sulfur and citrus fruits and it is only use as a complementary activity for local industries.

On the other hand, the Fontanarossa International Airport, takes on an increasingly more active role every day more. This year, 2018, already testifies how Catania Fontanarossa Airport is increasingly an important hub for national and foreign tourism and especially as the Etna airport is appreciated by airlines. In fact, in the coming months, 31 foreign countries will be connected with Catania from Europe, Africa and Asia, 97 direct flights, 77 international airports, 8 intercontinental hubs and 7 brand new routes such as Dubai, Nuremberg, Toulouse, Nantes, Nice, Bordeaux and London Southend to which Marrakech and Seville are added in autumn; frequencies increase on Frankfurt, Malta, Paris, Munich and Dusseldorf; the Catania-Rome route is also intensified, the busiest route in Italy, which in summer will reach 40 daily flights (round trip). The Summer 2018 of Catania Airport, the season between the end of March and the end of October, will therefore not compromise proposals and margins of growth: seven months in which the best of the airlines' offer is concentrated and, in full, of the industry of tourism, both incoming and outgoing from Sicily; Easter is announced with 205,000 passengers in transit on Catania (+ 10% compared to last year), 75,000 of which are foreign (+ 15%) .

Catania is also well connected through railway lines to Messina, Palermo and Syracuse and, in 2016, the Underground line has been successfully inaugurated; 7 km in operation (Nesima-Stesicoro section), 1.8 km temporarily closed for extraordinary maintenance works (Galatea-Porto section), 1.7 km under construction (Nesima-Monte section) Po, 2.2 km under construction (section Stesicoro-Palestro, only tunnel).

Moreover, important are the cultural and artistic centers thanks to one of the oldest University in Italy (1434) and theater, concerts and Opera shows at Massimo Bellini Theater.

The province of Catania also stimulates the flow of tourists thanks to its Natural Protected Areas. Some example of the most famous tourists destination are: Etna, Alcantara river Park, Protected marine area of the Ciclopi Islands. The Etna, the highest volcano in Europe, represents one of the most important famous sites due to its landscape and the possibility to hike, suitable for those adventurous.

Moreover, the Alcantara river park is a regional park in Sicily that was established in 2001 in place of the pre-existing reserve and includes that part of the territory of the provinces of Messina and Catania that forms the river basin of the river Alcantara, and is located in the slope north of Etna, in order to protect and promote the existing natural system.

Finally, the Marine Protected Area of the Ciclopi Islands is a protected area that extends into the stretch of sea in front of Aci Trezza and includes the small archipelago of the Islands of the Cyclops and the stretch of sea between Capo Mulini and Punta Aguzza in the municipality of Aci Castello, established with Ministerial Institutions Decree of 09/11/2004 (18).

## RESULTS AND DISCUSSION

Environmental indicators are essential tools for tracking environmental progress, supporting policy evaluation and informing the public.

In this part, the environmental indicators described in the second chapter are used to evaluate the tourism sector of the city of Catania. Environmental indicators and tourism are strictly connected. For this reason, is useful to analyze some indicators:

- Tourist function indices: Accommodation capacity; hotel beds; extra-Hotels beds.
- Flow indicators: arrivals, departure, average stay, attendance, hotels etc.

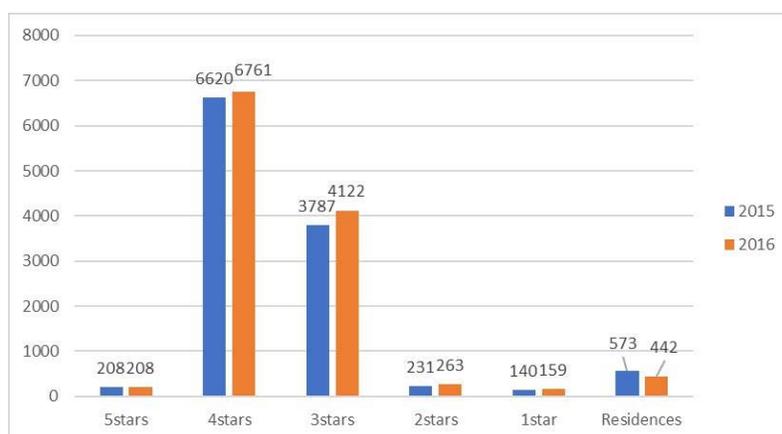
The data available for Catania (table 1) is of the year 2016, a year of quantifiable expansion for the tourism sector in the province of Catania, with a growth of 13.6% in the number of business activities and 4.6% in the availability of beds (19).

The contribution of the non-hotel sector was decisive, with 114 new structures compared to 2015 (+ 14.9%) reaching the availability of 10.399 beds (32.2% of which available at B & B) equal to + 6% compared to 2015. The hotel sector in the province of Catania has grown; + 6.1% in the number of structures and a + 3.4% in terms of beds. The growth of the sector is largely (figures 1).

**TABLE 1:** Accommodation capacity Province of Catania 2015-2016

(Number of business activities and Number of beds)

| Category          | of     | 2015 | 2016  | Var%  | 2015   | 2016   | Var % |
|-------------------|--------|------|-------|-------|--------|--------|-------|
| exercise          |        |      |       |       |        |        |       |
| 5 stars           |        | 1    | 1     | 0,0   | 208    | 208    | 0,0   |
| 4 stars           |        | 39   | 40    | 2,6   | 6.620  | 6.761  | 2,1   |
| 3 stars           |        | 67   | 71    | 6,0   | 3.787  | 4.122  | 8,8   |
| 2 stars           |        | 8    | 9     | 12,5  | 231    | 263    | 13,9  |
| 1 star            |        | 8    | 9     | 12,5  | 140    | 159    | 13,9  |
| Residence         |        | 9    | 10    | 11,1  | 573    | 442    | -22,9 |
| Tot Hotels        |        | 132  | 140   | 6,1   | 11.559 | 11.955 | 3,4   |
| Camping           | and    | 16   | 11    | -31,3 | 2.955  | 2.498  | -15,5 |
| tourists villages |        |      |       |       |        |        |       |
| Private           | Rental | 122  | 157   | 28,7  | 2.156  | 2.519  | 16,8  |
| accommodation     |        |      |       |       |        |        |       |
| Farmhouses        |        | 81   | 42    | -48,1 | 1.464  | 760    | -48,1 |
| B&B               |        | 530  | 612   | 15,5  | 2.841  | 3.351  | 18,0  |
| others            |        | 16   | 57    | 256,3 | 399    | 1.271  | 218,5 |
| Tot Extra-Hotels  |        | 765  | 879   | 14,9  | 9.815  | 10.399 | 6,0   |
| Total             |        | 897  | 1.019 | 13,6  | 21.374 | 22.354 | 4,6   |



**FIGURE 1:** Hotel Beds in the Province of Catania, 2015-2016

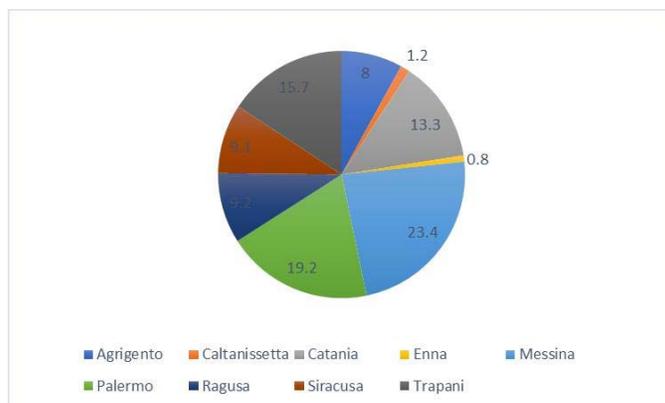
Catania, for its economic activity, represents the biggest and most important center of Sicily; it has acquired this position thanks to its commercial center, which is the richest of the island, and its commerce, that goes beyond the provincial boundaries.

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In the past, until 1938, Catania was known as the main sulfur industrial center of the entire Island. Unfortunately, after the sulfur crisis, the industrial assets of the city deeply change focusing its activity in assorted products such

as: agriculture, pharmaceutical, chemical, mechanical and electronic. Attributable to structures with one and two stars, about + 13% in 2016, even though, three and four stars hotels represent 79.3% of the hotel accommodation in the Etna area. All the data acquired, are expressed in the tables below.

Flow Indicators related to the Province of Catania, represent another tool to observe the sustainability in Tourism. Based on the provisional data available at the Regional Tourist Observatory in 2016, the inter-regional tourist flows showed a decline with rates that stood at - 2.7% for arrivals and -5.6% for presences. The 5.6% contraction recorded in the presences is mostly due to the tourism of our compatriots (-9.6% the Italian presence compared to 2016), while the reduction in the presence of foreigners was much lower (-5.6%), mostly from France and Germany (] Department of Tourism, 2017). Moreover, it is possible to measure the portion of overnight stays in the 9 Provinces of Sicily compared to the entire Region, looking closely to the case of Catania (figure 2).



**FIGURE 2:** Share of overnight stays by province compared to the entire region (2016)

Among foreigners, the greatest visitors of Sicily are the French who, both in 2015 and 2016, occupy the first place in the ranking of arrivals from foreign countries to our region. It follows Germany, the United Kingdom and so on (figure 3).



**FIGURE 3:** Incidence of overnight stays of the main foreign visitors in Sicily, 2016

The analysis of environmental indicators in Catania can be focused on the natural protected areas in the Province. There are several protected areas, specifically twelve. This indicator expresses how much of the city’s surface is undergoing biodiversity protection measures:

$$LAE = \frac{Sc}{Spa} * 100$$

Sc stands for the surface of the Province of Catania;

Sps stands for the surface of the protected areas.

Considering the surface of the Province of Catania which is 357400ha and the total surface for the protected areas of 157235ha the indicator will be:  $LAE = 357400 / 157235 * 100 = 227,30$  ha  
 In the table 2 is shown the surface for each area considered in the calculation

**TABLE 2:** Protected Areas and their Surfaces in the Province of Catania

| Protected Areas              |         |            | Year of Institution | Surface (ha) |
|------------------------------|---------|------------|---------------------|--------------|
|                              |         |            | 2004                | 623          |
| Protected                    | sea     | area Isole |                     |              |
| Ciclopi                      |         |            |                     |              |
| Simeto lava holes            |         |            | 2000                | 1217         |
| Ponte Barca Oasis            |         |            | 2009                | 70           |
| Nebrodi Park                 |         |            | 1993                | 86000        |
| Etna Park                    |         |            | 1987                | 58000        |
| River Park dell'Alcantara    |         |            | 2001                | 1927         |
| Natural Reserve Fiumefreddo  |         |            | 1987                | 10           |
| River                        |         |            |                     |              |
| Natural                      | Reserve | Complex    | 1998                | 70           |
| Immacolatelle e Micio Conti  |         |            |                     |              |
| Natural Reserve Simeto Oasis |         |            | 1984                | 1859         |
| Oriented                     | Natural | Reserve    | 1999                | 6559         |
| Bosco di Santo Pietro        |         |            |                     |              |
| Oriented                     | Natural | Reserve La | 1999                | 225          |
| Timpa                        |         |            |                     |              |
| Simeto River                 |         |            | 2000                | 675          |

Another fundamental aspects that competes to establish a more efficient tourism level in the city of Catania is the urban viability; reason why the municipality has been trying to set new goals for a continuous improvement. Catania and its Administration, in the last decade, have been carrying out new measures to reorganize the limited traffic zone (LTZ) in the city center and increase the pedestrian traffic only (table 3).

However, the public transportation service has been reduced (-50%) because of the cuts in the national TPL service in 2010 and because of the financial crisis of AMT Catania: for these reasons, users decrease of the 17% between 2012 and 2016 (20).

Statistics say that, in the city of Catania, 68% of people use their own car for movements. To reduce this amount, is necessary to leverage on collecting transportation; thankfully, the underground service has been developed in 2016 in the city of Catania and the Administration is still working to improve it and reach a wider area.

The central pedestrian areas have been extended and, during summer, every other Sunday the seafront is closed to the traffic to increase the cycling and pedestrian traffic.

**TABLE 3:** Limited Traffic Areas Catania, 2016

|                              |                            |
|------------------------------|----------------------------|
| 2.396                        | 426                        |
| Vehicles licensed to LTZ     | LTZ entrances              |
| 0% growth rate 2006/2016     | -28% growth rate 2012/2016 |
| 18                           | 32                         |
| Interchange parking          | Paid parking on the road   |
| + 173% growth rate 2012/2016 | 0% growth rate 2011/2016   |

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Moreover, in 2016 has been installed the car sharing service to reduce the use of private transport.

Again, another step closer to sustainability has been taken to improve the railway service. In 2017 the first Ognina-Catania center sector of 2.6 km which will be connected to the underground and the local railway "Circumetnea" to link every part of the city, has been opened.

Catania even though offers a wide variety of natural resources, probably more than the average of the tourist places around Italy, is not able to become a strong touristic destination because of the lack of services. Services around the city are not well-developed influencing, negatively, the tourists flow. "Catania and Sicily are not tourist destinations, but places, because there is no a systemic organizational offer. In the same way, we still do not have attractions, but resources" (21).

The pursuit of the strategic objectives of the Action Plan of Catania is coordinated with the strategies of the plan of the mobility of the Municipality of Catania (General Plan of Urban Traffic, PGTU, expected from the art.36 of the New Code of the Road) and with the scenarios of long and medium term development of the public transport system in the metropolitan area; especially with regard to the increase in the use of the collective transport (identified as one of the main actions for containment purposes noise pollution in the city), the sustainability of private transport and the development of slow mobility slow such as cycling and pedestrian areas (22-23).

In order to reach these goals, Administration, locals and tourists must work together and have the will to become one of the leading cities of Italy, especially if we think of how much has to offer.

Also, the installation of pedestrian only areas and the closure of the sea front every other Sunday to improve cycling traffic, is a symptom that the city is trying to become more sustainable. From this starting point, Catania should invest on the development of a more efficient public transport network which should link every part of the city and the small town around it; this would reduce the number of cars, the noise and air pollution with the direct consequence of a better welfare of the city, a better image as tourist destination and an increase of the local economy. Moreover, as in the rest of Italy and Europe in general, the development of the car sharing system, with the use of ecological cars, represents a key tool for sustainable management of the eco system applicable to a more convenient and efficient tourist service.

## CONCLUSIONS

The sensibility of public opinion towards a sustainable lifestyle increases with the spread of environmental pollution. The use of mandatory and volunteer tools to respect the environment is the correct action to develop. It is noticeable how tourists appreciate the interventions, for the protection of the environment, promoted by accommodation facilities such as Hotel, B&B and Residences; how they increase their appreciation towards a better environmental quality and how the certification systems of environmental quality are valued.

The main advantages related to the use of the tools previously described can be:

- Economic development of the hotel structure;
- Environmental conservation and the artistic heritage of the destination;
- Waste reduction;
- Optimization of waste management;
- Economic saving;
- Decrease in pollution and environmental impact;
- Use of organic products and consequent contribution to a healthy diet benefits for revenue management (24).

In tourists' facilities such as Hotels, Hostel, B&B and residences, the manager should, through an adequate communication plan, inform the potential guests that the structure adopts environmental sustainability measures and, at the same time, instruct the staff on what are the services offered and the ways in which the hotel is committed to saving resources.

There are several approaches usable to develop a sustainable management such as: Adopt measures to save energy and water: recover rainwater for irrigation of green areas and use the magnetic card instead of traditional keys. Today many hotels are equipped with a switch placed next to the door of the room where you can insert this type of magnetic key, inserting it activates the electricity; in this way, if the guest is not present, there will be no energy waste (25); Separate waste collection; Use electric cars; Take advantage of the short supply chain by establishing

partnerships with local companies; Install solar panels; Use recyclable or recycled materials; Use rechargeable packs and ecological products for the courtesy kit; Offer organic and local foods.

These and many more approaches can be developed to implement an efficient sustainable tourism system (26). A “resource” is defined as the tool thanks to which is possible to identify a place regarding its characteristics; a resource though, is not born as such but it will become one, once will be known, valued and made usable (27).

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