EVALUATION OF THE SUSTAINABILITY OF HOTEL UNITS. 
THE CASE OF LESVOS ISLAND, GREECE.

Ioannis Spilanis 
University of the Aegean, Laboratory of Local and Islands’ Development 
Department of Environment 
Lesvos, Greece 
e-mail: gspi@aegean.gr

Konstantinos Tsilimpokos 
University of the Aegean 
Chios, Greece 
e-mail: emt498020@emt.aegean.gr 

and

Magiula Tsilimpokou 
University of the Aegean 
Chios, Greece 
e-mail: magtsil@yahoo.com

ABSTRACT

The main purpose of the present article is to highlight the findings of a research that was conducted in 
the line of a 2003 doctoral thesis in hotel units of Lesvos Island, in the region of the Northern Aegean Sea, 
Greece. The research had as a prime aim to evaluate the sustainability of hotel units concerning economic, 
natural and social environment, where they activate financially. Basic indicators of economic, environmental 
and social sustainability are searched and evaluated.

Key Words: Lesvos, Hotels, Sustainability, Indicators.

INTRODUCTION

The modern international bibliography of tourism puts on the map Sustainability as the prevailing and 
suitable developmental approach in order to prove that the tourist growth can contribute to the economic 
prosperity in accordance with the rational use of the environmental and cultural resources of a region. “Hotel 
Enterprise” undoubtedly constitutes an essential fundamental element of tourist destination, if not the most 
essential one. It is arguably, therefore, an important mean of growth that has the potential to contribute to the 
sustainability of the tourist product.

The hotels mark their own land and offer the destinations’ uniqueness. They constitute tourist 
landmarks with architecture which is often influenced by the culturally and environmentally established models. 
They even reach the point to be considered as “homes away from home” for the tourists who spend a large 
amount of their time staying there. Because of their predetermined structure and their particular operation, they 
create various expectations not only for the visitors that reside there tentatively (who also consume in an 
extravagant way and produce non - essential waste during their few days staying) but also for members of the 
local society that constitute the permanent population (who are more reasonable concerning their consumption 
and the levels of waste they cause). At the same time, the opinions and the expectations of designers, investors, 
ecologists and representatives of State should not be left aside but, instead, be taken into serious consideration 
(Marin, Jafari, 2001).

According to UNEP(2002), the contribution of the hotel industry to each gross national product is 
considered vital. Both in the developing and the developed countries the incomes of the hotel sector are an 
indispensable part of the local and national economies. This is achieved mainly via the profits that are collected 
by the owners, the taxes that are paid, the salaries and the working places that are created and the material goods 
that are bought.
THE AIM AND THE CHARACTERISTICS OF THE RESEARCH

Having as an utmost objective the spotting of those factors that connect the hotel enterprise with the more widely offered tourist product, the scrutiny of the economic, environmental and social parameters that influence not only the sustainability of a hotel unit, but also a lot of basic economic, environmental and social indicators of prosperity of tourist destination where it develops its activity is considered to be of critical importance.

What can be defined as the main aim of the present article is to bring to light the findings of a research that was carried out as part of a doctoral thesis during June – November 2003 in all hotel units of Lesvos Island, which function as incorporated companies. The data were collected:

- With the method of personal interviews of the owners of the units via the completion of questionnaires.
- With the collection of the final balances of the year 2002 from the accounting departments of the units or alternatively by the completion of a corresponding question in the questionnaire that concerns unpublished economic figures of the units.
- With the collection of data, from the owners of the units and the local tourist police stations, which concern the arrivals and overnight accommodation of tourists for each lodging separately.

A total of 34 out of the 48 hotel enterprises responded in the questionnaire. Economic data were acquired of 21 units, while data for the arrivals and overnight accommodation were collected from 29 units.

In the analysis that follows, facts that concern the tourist offer and demand of Lesvos Island are presented. Then, economic indicators, that concern the income of the units and employment, are analysed, as well as the interventions that have taken place by the hotel units on matters concerning the protection of the environment are scrutinised. At the same time, social indicators that are related to issues of employment of the two genders and encouragement of the local employment are further analyzed.

TOURIST OFFER AND DEMAND IN LESVOS ISLAND

The island of Lesvos is located in the marine region of Northern - East Aegean and is the third, in size, island of Greece with an area of 1.632 sq. km and population of 90.643 people. In 2002, there was a total of 107 active hotel units in Lesvos, the majority of which were of small or medium size. To be more specific, from the total number of units, 7 belonged to Class A, 42 belonged to Class B, 50 to Class C, while the rest 8 belonged to Classes D and E. The beds on offer were 6.076 in total. The A Class beds were 10,85% of the total beds, Class B beds 48,95%, Class C beds 36,25% and Class D and E beds 3,95%.

As it concerns the tourist demand, in prefecture’s level, in 2002, a total of 694.308 overnight stays took place in the hotel lodgings, which is roughly equal to 13% of the overnight stays of tourists in a national level. The vast majority of overnight stays was realised by foreign tourists (65,7%), which is a fact that confirms, up to a point, that the tourism of the region depends on tour operators.

ECONOMIC INDICATORS

Income per Overnight Accommodation

Regarding the income per overnight accommodation (Table 1), it can be observed that in Class A hotels, they ranged between €31,99 and €48,97, in Class B hotels between €13,88 and €50,82, while in Class C lodgings between €17,02 and €36,08. Through the analysis, it is easily proved that the class of the lodging does not play a fundamental role in the configuration of the particular indicator. Especially, in certain cases, hotels that belonged to a lower class presented higher income per overnight accommodation compared to hotels that belonged to a higher class.

The income per overnight accommodation appears to be influenced more by the way of allotment of the rooms. It is characteristic, as it can be seen in Table 1, that from the 2 Class A hotels, the lower incomes per overnight accommodation were gained by the unit that allotted the majority of beds via contract. A similar situation can be spotted in Class B hotels. The lower incomes per overnight accommodation, from a total of 8 units that permitted the scrutiny of their financial data, can be found in the units that allotted the majority of their rooms via contract. From Class C hotels that allowed inspection over their finances, only one unit allotted most beds via contract. The income per overnight accommodation of the particular unit was low compared to the one of most units, whose majority of overnight accommodation came from constant or individual customers.
Another conclusion that springs through the analysis of the particular indicator and which is connected to the way of room allotments has to do with the period of operation of the lodging. The urban lodgings that operate throughout the year and the customers of which are mainly individuals, gained higher incomes compared to the resort type lodgings, which operated seasonally and allotted their rooms via contract.

<table>
<thead>
<tr>
<th>Way of room allotment</th>
<th>Income per overnight accommodation in Class A hotels</th>
<th>Income per overnight accommodation in Class B hotels</th>
<th>Income per overnight accommodation in Class C hotels</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Contract</td>
<td>€ 31,99</td>
<td>€ 14,20</td>
<td>€ 16,60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>€ 18,74</td>
<td>€ 23,16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>€ 28,41</td>
<td></td>
</tr>
<tr>
<td>Direct Rental</td>
<td>€ 48,97</td>
<td>€ 28,30</td>
<td>€ 17,02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>€ 37,22</td>
<td>€ 18,87</td>
</tr>
<tr>
<td></td>
<td></td>
<td>€ 50,82</td>
<td>€ 24,41</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>€ 36,08</td>
</tr>
</tbody>
</table>

**Employees per Unit and Bed**

Another indicator which is not solely economic, but has also got a social dimension concerns the workers that are employed per hotel unit and bed. In Table 2, the figures of employment that derive from the sampling are clearly presented. Employment includes the number of individuals that worked throughout 2002, irrespective of the fact they were fully or seasonally employed. As for the family-run hotels, the average employment is 3,8 individuals, 10,3 individuals for the small hotels, about 16,3 individuals for the middle size hotels and 45 individuals for the big ones. The average employment per bed does not differ substantially between family-run, small and middle size units, mainly due to its fluctuation between 0,13-0,15 employee per bed. In big units the equivalent indicator is higher, since the average employment per bed is 0,2 employee. It should be noted that big hotels, with more than 100 rooms, even if they represent the 6,2% of the incorporated hotel companies in Lesvos, employ the 25% of the workforce of the island.

<table>
<thead>
<tr>
<th>Size of Hotel</th>
<th>Number of Rooms</th>
<th>Number of Hotels</th>
<th>Percentage of Hotels</th>
<th>Average Employment per Unit</th>
<th>Average Employment per Bed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family-run</td>
<td>1 - 20</td>
<td>7</td>
<td>21,21%</td>
<td>3,8</td>
<td>0,13</td>
</tr>
<tr>
<td>Small</td>
<td>21 - 50</td>
<td>18</td>
<td>54,55%</td>
<td>10,3</td>
<td>0,15</td>
</tr>
<tr>
<td>Middle</td>
<td>51 - 100</td>
<td>6</td>
<td>18,18%</td>
<td>16,3</td>
<td>0,13</td>
</tr>
<tr>
<td>Big</td>
<td>101 -</td>
<td>2</td>
<td>6,06%</td>
<td>45</td>
<td>0,2</td>
</tr>
</tbody>
</table>

**SOCIAL INDICATORS**

**Sex of Employees**

The women employees in the hotel units of Lesvos, irrespective of the size and the class of the lodging, are predominant considerably against men. The percentage of the employed women starts from 57% in big units and reaches up to 70,43% in small units.
### Table 3
**Employees per Sex**

<table>
<thead>
<tr>
<th>Size of Hotel</th>
<th>Number of Rooms</th>
<th>Number of Hotels</th>
<th>Male employees (%)</th>
<th>Female employees (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family-run</td>
<td>1 - 20</td>
<td>7</td>
<td>33,33</td>
<td>66,67</td>
</tr>
<tr>
<td>Small</td>
<td>21 - 50</td>
<td>18</td>
<td>29,57</td>
<td>70,43</td>
</tr>
<tr>
<td>Middle</td>
<td>51 - 100</td>
<td>6</td>
<td>33,67</td>
<td>66,33</td>
</tr>
<tr>
<td>Big</td>
<td>101 -</td>
<td>1</td>
<td>43,00</td>
<td>57,00</td>
</tr>
</tbody>
</table>

### Nativeness of Personnel

As far as the nativeness of the personnel is concerned, through the sampling research, it becomes evident that the hotel units of Lesvos prefer to employ individuals that come from the island or reside permanently in it. As it can also be seen in the referring table, the percentage of local employees starts from 85,19% for the family-run units and it reaches 97,32% in small units.

### Table 4
**Nativeness of Personnel**

<table>
<thead>
<tr>
<th>Size of Hotel</th>
<th>Number of Rooms</th>
<th>Number of Hotels</th>
<th>Local employees (%)</th>
<th>Foreigners or employees from other regions of Greece (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family-run</td>
<td>1 - 20</td>
<td>7</td>
<td>85,19</td>
<td>14,81</td>
</tr>
<tr>
<td>Small</td>
<td>21 - 50</td>
<td>18</td>
<td>97,32</td>
<td>2,68</td>
</tr>
<tr>
<td>Middle</td>
<td>51 - 100</td>
<td>6</td>
<td>92,86</td>
<td>7,14</td>
</tr>
<tr>
<td>Big</td>
<td>101 -</td>
<td>1</td>
<td>88,68</td>
<td>11,32</td>
</tr>
</tbody>
</table>

### ENVIRONMENTAL INDICATORS

#### Environmental – friendly Interventions

An important issue, that is connected immediately to the sustainability of the tourist product of a destination, has to do with the measures which have been taken by the hotel units for the protection of the environment. These measures, either they are individual interventions from the part of the enterprises or they concern their integration in any programme of environmental management, are important. Not only they can protect the environment, but they can also be of great help for the enterprises so as to decrease, up to a point, their operating cost. Through the research it was ascertained that none of the units is certified with any label of environmental management, however, certain individual interventions occur on issues of environmental protection.

As it can be noticed in Graph 1, 75% of class A hotels have installed solar heaters, cards for provision of electricity and electric energy saving lamps, while 50% of them have placed water saving batteries. Class B hotels, to a percentage of 50%, have installed solar heaters, 56% of them dispose of low energy consumption lamps and 28% have installed cards for provision of electricity and water saving batteries. As it concerns the class C units, 80% of them have installed electric energy saving lamps, 40% have solar heaters and cards for provision of electricity and 20% use water saving batteries.
Apart from the interventions that the hotel owners can make for the adoption of environmental-friendly policies, they have the possibility, at the same time, to develop environmental-friendly conscience via their preference in environmental-friendly products. Such products are recycled paper and ecological detergents. As it can be seen in the graph that follows, 50% of class A lodgings have adopted the use of ecological detergents. Regarding the same policy, this is followed in smaller rate by class B hotels (39%), while the corresponding percentage for class C hotels can hardly reach 10%. The opposite happens with the use of recycled paper. The 60% of class C hotel units use recycled paper. The percentage is smaller for class A and B hotels, which use recycled paper at a rate of 25% and 33% respectively.

The scrutiny of sustainability of hotel units and, by extension, of the tourist product is an issue which should increasingly be a matter of concern for all the institutions involved in the tourism industry. Through the previously-mentioned analysis and the economic efficiency of hotel units of Lesvos island, it becomes apparent that the latter is directly influenced by the type of tourism that is prevalent in the region. It is not a matter of sheer luck that units which allot their rooms via contracts with tour operators, presented the lowest income per overnight accommodation. It is also a remarkable fact that through the answers that were given in

**Use of Environmental-friendly Products**

Apart from the interventions that the hotel owners can make for the adoption of environmental-friendly policies, they have the possibility, at the same time, to develop environmental-friendly conscience via their preference in environmental-friendly products. Such products are recycled paper and ecological detergents. As it can be seen in the graph that follows, 50% of class A lodgings have adopted the use of ecological detergents. Regarding the same policy, this is followed in smaller rate by class B hotels (39%), while the corresponding percentage for class C hotels can hardly reach 10%. The opposite happens with the use of recycled paper. The 60% of class C hotel units use recycled paper. The percentage is smaller for class A and B hotels, which use recycled paper at a rate of 25% and 33% respectively.

**CONCLUSIONS**

The scrutiny of sustainability of hotel units and, by extension, of the tourist product is an issue which should increasingly be a matter of concern for all the institutions involved in the tourism industry. Through the previously-mentioned analysis and the economic efficiency of hotel units of Lesvos island, it becomes apparent that the latter is directly influenced by the type of tourism that is prevalent in the region. It is not a matter of sheer luck that units which allot their rooms via contracts with tour operators, presented the lowest income per overnight accommodation. It is also a remarkable fact that through the answers that were given in
the questionnaire the discounts in the prices of rooms for the allotment contracts reached up to 50%, while for the guarantee contracts the corresponding rate was up to 70%. On the contrary, the hotel units whose customers are individual, repeated or business, achieve better economic results. This can be easily explained by the fact that the discounts provided in this type of customers, are much lower than the discounts offered to the tour operators. In addition, it should be taken into serious consideration that the economic sustainability of units that allot rooms with the method of contracts is further aggravated by the fact that they operate in a seasonal base and they are consequently charged with expenses of maintenance for a period when their proceedings is null.

As it concerns the employment in the investigated units, it is apparent that female employment is particularly encouraged in Lesvos island, which has also been proved by other researches of the same kind in the field of tourism, while the proportion of employment is analogous to the class of the unit. It is an encouraging fact that in the hotel enterprises, the vast majority of employees are permanent residents of the island, a strategy which encourages the local employment.

Finally, as far as issues of environmental protection are concerned, it appears that there is a delay as none of the units has acquired or has entered the process of acquisition of some kind of certification. However, a large number of units have made individual interventions for the restriction of wastefulness of electricity and water and have adopted the use of ecological products.

REFERENCES


Hellenic Republic – Ministry of Economy and Finance – General Secretariat of National Statistical Service of Greece


