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EFFECTS OF TOURISM IN THE FORMATION OF THE ACOUSTIC ENVIRONMENT OF TOURISTIC CITIES IN SOUTH EUROPE

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ABSTRACT

As the result of increased purchasing power by consumers, reduction of prices and increased efficiency of transport and services in the tourism sector the areas of leisure activities and tourism are rapidly growing. The Mediterranean region is the world's leading leisure tourism destination, accounting for 30% of international tourist arrivals and for one fourth of the receipts from international tourism. However, tourism has been an important part of the economic development of many of the poorer areas of Southern Europe. Tourists tend to scatter over larger and often more sensitive areas, where their activities are more difficult to manage and control. More and more areas are becoming more and more crowded with tourists having impacts on the people who live there. One of the major impacts is that of environmental noise. The deterioration of the acoustical environment is based in the following tourist-related facts: increasing transportation needs, night entertainment needs, land use pressures and becomes a very difficult issue to tackle given the inadequacies of the local authorities to deal with problems that may occur only during certain periods of the year plus the fact that they do not have the experience such as relevant administrations from bigger cities. Achieving a better acoustical environment is a prerequisite for the tourist areas but in the same time local authorities are facing problems dealing with the above noise sources since they form part of the necessary activities needed for the tourist modern lifestyles and activities. The paper will present the main characteristics of the above issues and specific ways to deal with this particular problem.

1 - INTRODUCTION

One of tourism's effects in the urban areas is the degradation of the acoustic environment, which is associated to transportation and recreational activities and their implications in the local land uses. As a result, several noise pollution problems have been identified in tourist areas and numerous abatement measures have been already implemented by local and regional administrations in various countries. Noise affects tourists as well as the inhabitants of the areas. Psychosocial studies [5] in such areas have established noise as a primary tourist annoyance cause. It affects the choice of hotel location and the general perception of the holiday quality. It has been shown that inhabitants -despite the fact that they derive multiple socio-economic benefits from tourism- have a tourist noise tolerance saturation point. The above studies have also shown that the principal cause of noise annoyance is transportation and, in particular, road traffic.

Another main issue remains the fact that -due to the warm Mediterranean temperature- a lot of outdoor nightlife activities contribute to excessive noise generation. Usually that kind of entertainment attracts a certain type of tourist (young people etc.) but can involve other types as well. The need for night entertainment sometimes results in peak noise levels of over 100 dB(A) which creates a lot of annoyance and sleep disturbances in the nearby residences.

2 - FINANCIAL AND SOCIO-ECONOMIC PARAMETERS

With more than 260 million employees and annual investments in capital projects of more than US\$ 800 billion, tourism ranks globally alongside such sectors as construction and petrochemicals as one of the world's biggest industries. According to current estimates, tourism accounts for about 10.7% of the world GDP. Tourism continues to grow rapidly, and is expected to increase by 4 per cent each year over the next five years (source: The Addendum on Tourism and Economic Development prepared by the World Tourism Organisation). During the last twenty years a substantial increase of the tourist productivity sector was recorded. It is without a doubt considered to be a world wide financial factor that is capable of flattening peripheral inequality as far as employment, income and demographic distribution are concerned. It is a considerable parameter for the economies of developed countries with an already evolved tourist sector, while for developing countries it could significantly affect the overall trade balance (for example, in 1994, tourism accounted for 15% of the total foreign trade earnings and 20% of the total receipts in services in Egypt. In 1994 in Morocco a 10% of total foreign trade earnings, 58% of total receipts in services and 6% of employment was tourism-related [1]).

Services are the main product of the tourist industry. Secondly, other product activities are expanded, which support the tourist sector and are related to transportation, telecommunications, construction, food industry etc.

In social terms, a significant number of employees are occupied within the tourist sector and within other related activities. At the same time, a significant number of people participate and enjoy tourist activities with the intention of relaxing, amusing themselves, visiting new destinations, etc. The daily stress, mostly in developed countries, has rendered vacationing an important component in the annual programme of people. Europe profits from a healthy world economy, growth is further increased by monetary unification around 2000-5, and expectations are also hopeful for the accession countries. All that combined with the widespread offer of affordable organised vacations contributes to the generation of a significant number of tourists.

Tourism is therefore an activity for which there is an increased demand and at the same time it is a productive sector of great (both for individuals, and governments) because of its development potential. Tourism contributes to the development process, supports local communities especially in Greek tourist areas (see table 1, [3]).

	Kerkyra (Corfu)			Cyclades			Crete		
	1	2	3	1	2	3	1	2	3
1961-1970		-8,7%			-13,6%			-5,5%	
1971-1980	5%	7,0%	220%	13%	3%	137%	10%	10%	358%
1981-1990	18,60%	5,5%	59%	20%	7,50%	119%	15%	6,9%	140%

Table 1: Evolution of some socio-economic indicators in various tourist regions in Greece (**1%** GDP per capita changes; **2%** population changes; **3%** changes in hotel beds/1000 inhabitants).

It is interesting to note that during 1985 the total area of tourist accommodations was about 4400 km² and within 2000, according to relevant estimates, will be doubled with a 50% of the accommodations being located in coastal areas. In 1990 about 261 million tourists reached the Mediterranean and a high increasing trend is expected in the near future. The resident population of the Mediterranean was 246 million in 1960, 380 million in 1990 and is currently 450 million. "Blue Plan" estimates that depending on the development scenarios applied, this figure will rise to about 550 million in the year 2030, is expected to reach approximately 600 million in the year 2050 and possibly as much as 700 million at the end of the 21st century. Population density is greater in coastal regions, especially near the big cities. In general, the mass migration towards the major urban centres in the basin has overstrained the labour and housing markets and the associated public services such as roads and transport. The distribution of population between the northern and southern countries has changed dramatically: in 1950, countries of the northern Mediterranean represented two thirds of the total population, while today it is only 50% and may be one third in the year 2025 and one fourth in 2050 [11].

3 - TOURISM AND ENVIRONMENTAL QUALITY

The debate as to whether or not tourist related activity is beneficial or detrimental to the host country is often discussed within the context of "sustainability" where the emphasis is on carrying capacity, long

run viability and the general avoidance of "soiling one's own nest". In a research paper [15] on the impact of tourism on the Maltese islands was shown that, like many other small island developing states, Malta depends heavily on tourism and therefore the economic and environmental impacts of tourism activity are relatively high. It was argued that the objective of sustainable tourism is therefore not very easy to attain, and it often involves walking on a very tight rope [15], [16]. A factor in the development of tourist activities is environmental quality, bearing in mind that its good state is a lever for the development of tourism and an attraction point for tourist movement. At the same time, environmental degradation acts as a counter-motive and leads to the reduction of tourist numbers. It should be noted that the contribution of mass tourism to the phenomenon known as the "environmental crisis" was recognised and noted in the Global Conference for Development and the Environment in Rio (1992), as was the necessity to take measures for actions dealing with the degradation phenomena.

4 - NOISE – ENVIRONMENTAL QUALITY PARAMETER

A fundamental contradiction between tourism and the quality of the acoustic environment is formed by the desire to meet tourist needs, resulting in influencing the environmental characteristics. Excessive noise pollution degrades the life quality of permanent residents and, in some cases, makes them abandon traditionally residential areas which has as a result changes in the historical character and use of these areas. In contrast, noise pollution can certainly be connected to what makes an area attractive as a vacation spot. For example, recreation with loud music and the 'happenings/parties' context were an essential advertising idea for some tourist regions of Spain. The advertisements were primarily directed to specific tourist types (the slogan of a recent advertising campaign was based on the offer of entertainment until the early morning hours for young people, while parties in Ibiza attract a lot of people). Relevant phenomena of loud and noisy recreation can be found in tourist areas of Greece, such as the island of Ios, Mykonos, etc. Abatement measures such as the closure or prohibition of tourist entertainment activities from a region can lead to its isolation. This can be detrimental especially for small islands or remote areas since the competition is fierce. Prohibition of all entertainment areas, within the medieval castle of Rhodes, by the community authorities had a negative local economic impact which had to re-examine the relevant decision.

According to the Psychosocial Study of Rhodes (Greece 1999 [4] and 1992 [5]), noise is a principal cause of annoyance and people expressing a negative opinion for the acoustic environment had a relatively bad opinion of the holiday area itself (60% in 1993, 47% in 1998 after the noise abatement measures). Furthermore the level of annoyance is not correlated with age and 59% of the permanent residents interviewed said that they were not prepared to make further quality of life concessions and to tolerate higher noise levels so as to accommodate more tourism activities. This fact is of great importance considering that this sample resides in an area which significantly depends on tourism for income and employment.

Furthermore, according to a study dealing exclusively with the effects of noise on hotels in tourist areas of France (Vincent 1992) [6], which also catalogued the quality of French hotel equipment, concluded that:

- the choice of residence is significantly affected by the quality of the acoustic environment and, more specifically, 4 in 5 people will not return to a hotel if they found it noisy (80%).
- 1 in 5 people expressed the desire to complain to the hotel management for noise issues in hotels with a degraded acoustic environment (25%).

However, experience gathered through surveys on the levels of awareness regarding the environmental impact of tourism seen in the areas of Caparica Coast and Setubal Peninsul in Portugal identified that there are significant problems in the ways people (especially children) perceive the local environment. The degree of awareness and perception about some of the environmental problems caused by tourism is sometimes relatively low. Information materials prepared with a view to addressing the information needs were considered necessary [16]

5 - FACTORS ASSOCIATED TO NOISE POLLUTION PHENOMENA IN TOURIST AREAS

The degradation of the acoustic environment in areas with developed tourism activities is associated to transportation (road, air, rail and boat), recreational activities and implications of the above on the land use patterns.

The seasonal tourist transportation needs affects the acoustic environment of the areas when considerably increased road traffic flows are forced to be accommodated in often inadequate local infrastructure. This

affects primarily the permanent residents that are not habituated enough but at times affects the tourists as well due to the proximity of some lodgements (especially in small and medium size villages) to the principal road system. Similar effects can be experienced with air transport which is preferred for long-distance travel. A typical example for Greece -where over 70% uses air travel- is presented for tourist islands, where normal flight number increases during the summer months by approximately twenty-fold in Rhodes, tenfold in Mykonos, etc. [7]

Road traffic noise, according to the results of the research for Rhodes [4], [5], is the primary cause of tourist annoyance compared to other noise sources and other annoyance factors, especially for those residing close to busy roads. Motorcycles and mopeds represent a particular annoyance parameter because of their often neglected maintenance, tampering etc. The number of people using such vehicles in the warm Mediterranean climate during summer period is increasing posing a lot of noise disturbance problems. The population sensitivity to motorcycle noise was recorded in a relevant survey by the Greek Ministry of the Environment, Planning and Public Works (1988) in Athens [8], where more than a fifth of the total urban sample expressed annoyance, with a 50% identifying traffic as the principal noise source and 25% naming motorcycles as the worse source of traffic noise emission. The number of motorcycles in some places (i.e. in the Greek islands) is particularly large since these vehicles are offered for rent as a convenient – and not expensive – means of transport.

Sea sport and leisure boats, such as jetskies, motorboats etc., are becoming more noisy since they are relying on even more powerful motors for their movement. Residents in the coastal Mediterranean areas are experiencing acute annoyance from these vessels especially during siesta time periods. National and international legislation should deal with this problem as soon as possible. The effects of recreation and other service establishments (such as restaurants) on the acoustic environment can be classified according to spatial (proximity to residences, hotels etc.) and functional characteristics (open or closed spaces, with or without music, large or small number of guests etc.). These effects influence the immediate area, as well as the access roads. In some places, nightlife occasionally forms the principal attraction (i.e. Mykonos, Ibiza etc) so bars, discos and other similar shops which emanate noise from music that can be extremely loud, coupled with other noise problems such as shouting, cheering, laughs etc as well as occasional fights from heavy drinking. Since these places are close to residential premises and hotels they can affect both tourists and inhabitants. In a considerable number of European tourist areas, community authorities have taken particular noise abatement measures aimed at recreational establishments (contracts of 'good acoustic behaviour', noise abatement for clubs, etc.). Noise annoyance management was exercised for Laval and Strasbourg, in Mimizan, Ondres, Capbreton, Bisacarosse, Leon and Sanguinet [9], in Monaco and a number of Greek island villages. Traditional traffic management measures aiming to improve the acoustical environment through traffic restraint schemes were introduced within the old town of Rethymno (Crete), the traditional neighbourhood of Plaka (in Athens), the old town of Rhodes, the traditional village of Ia (in Santorini), in the whole of the island of Hydra etc. These measures -if planned properly- can reduce noise and enhance the environmental (and tourist) quality of an area, for example in tourist areas of the South of France similar traffic management has been implemented for noise abatement (in the town of Monaco – through the diversion of traffic through a tunnel, in Menton, St. Tropez, Biarritz – through measures for motorcycle traffic, etc. [9]).

Basic directions for proper urban planning in Mediterranean historical centres, taking into considerations the acoustical environment, are already known for some time [17]. Such set of rules should be properly disseminated among all the Mediterranean countries and local administrations initiatives should be assisted both technically and financially. As early as 1975, the Mediterranean countries and the EEC adopted the Mediterranean Action Plan (MAP) and in 1995 a new phase of MAP was approved and was renamed "Action Plan for the Protection of the Marine Environment and the Sustainable Development of the Coastal areas of the Mediterranean" taking into consideration as well the results from the recent developments such as the UN Conference on Environment and Development (Rio de Janeiro, 1992). In the meantime, MED POL (Mediterranean Pollution Programme) a major component of MAP has entered a new phase shifting emphasis from pollution assessment to pollution control by means of action plans, programmes and measures for the prevention and control of pollution, for the mitigation of impacts and for the restoration of systems already damaged by pollution. [12]. Unfortunately, none of the above deals with the noise problems although this could be feasible and within the targets and mission of the UNEP.

6 - CONCLUSIONS

The often unplanned and extensive use of space in order to accommodate more tourist activities will eventually degrade the physical environment which is one of the primary attraction points, in simple

words: too much tourism will kill tourism anyway. In fact, for some places the necessity for immediate introduction of tourism/environment sustainability indicators is more than obvious. Tourism should contribute to sustainable development and environmental protection, and provide the necessary means for that. Financial contributions are being made for a limited number of initiatives by the tourism industry and this trend should be further developed. However, for sustainable tourism, there is a need to better understand not only the benefits but also the costs of tourism. Additionally, there is a need to develop both a more systematic analysis of direct and indirect costs and benefits from tourism as well as green accounting approaches including the acoustical environment. Action is needed at all policy levels, international cooperation which should involve E.U. bodies should therefore play a fundamental role in the field of policy, research and information gathering through adequate resources directed to activities in the region. There is a need for reassessing conventions, framework agreements, procedures and protocols; financial mechanisms, such as taxes on the environment, tourism taxes, requirements to reinvest profits in regions with tourism installations, fines for non-compliance, subsidies for the environmental upgrading of facilities, development of eco-tourism, technical assistance and advice, and land use planning and protective laws for the whole of the Mediterranean region to take into consideration the noise abatement needs. Such measures have been stated in UNEP document [13] which means there is already an international consensus on the subject. Better integration of Mediterranean tourism with sustainable development demands major efforts on training, awareness raising, and exchange of experience and best practice information, as well as organisation of the strong participation of the local population. Noise abatement and protection should be compulsory included in all environmental considerations and action is also needed on:

- financial mechanisms to enable the tourism sector to contribute to the quality of destinations
- network of pilot projects and establishment of a "Mediterranean eco-label" for environmental quality of destinations and installations
- capacity building for states, regions and tourist destinations to bring about successful integration of tourism with sustainable development, together with
- measures to support tourism in the Mediterranean island regions

Sustainability Reference Values (SRVs) for noise in tourist places needs to be developed and established on a pan-European scale, agreed mainly on a scientific basis to be either safe or acceptable or tolerable for human health and welfare of the inhabitants and visitor population. Targets associated with the SRVs should be identified on the driving forces, the pressures and the state of the impact variables which are the mainly politically determined feasible steps along the way to achieve the above mentioned SRVs. The acceptability of the noise level should be developed on the basis of the outcome of the existing working groups set for the new EU Noise Policy preparation and agreed by both EU and non EU member states in the Mediterranean region.

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