

The integration of Activity-based management in the construction of a destination environmental scorecard

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Abstract

Tourism has become a major industry the last decades. As an economic phenomenon tourism may have a strong positive impact on the destination areas, but simultaneously it exercises a heavy strain on the resources that support tourism activities. Various systems have been developed to help hotel enterprises manage their resources in a sustainable way. For a number of reasons, microenterprises and small and medium enterprises (SMEs) have failed to incorporate these systems in their everyday operations. Small-size companies are prevailing on the Greek islands and with their insensible, unmonitored and uncontrollable operations, most of them gradually undervalue the destinations' potential to supply sustainable quality services in the future. This paper suggests a shift of the monitoring and controlling emphasis from a hotel-based to an activity-based one. The first part of the paper describes the interrelationships between a number of elements involved: tourism, and in particular the hotel sector; the need to protect the natural habitat which is the cornerstone of the tourism development on Greek islands; and the barriers that locally operating SMEs face in their attempt to operate responsibly. In the second part a new destination-wide management tool is suggested. A tool based on the ABC/M principles that local authorities and stakeholders can set up to record the results and trends of specific environmentally critical activities performed by the hotels on an island-wide basis as well as the participation of each hotel in the collective strain produced by the group. If the scheme is properly constructed and accompanied by a number of incentives and disincentives, it will offer timely, accurate and relevant data to the local governments and an inexpensive and attainable tool to those hotels that really want to comply with, or even exceed, current local environmental standards

Part 1: Tourism, Sustainable Development, and Greek island hotel SMEs

1.1 An overview of tourism

The traditional definition of tourism involves the travel of people to destinations away from their usual dwelling or working places and the provision of facilities created to cater for the needs arising along this travel (Mathieson and Wall 1982). A newer definition widens the scope of tourism, defining it as the set of activities performed by people who travel and stay in places outside their usual environment for *not more than one* consecutive year, for *leisure, business and other purposes* (The European Commission 2002).

Depending on the set of criteria applied, tourism can be distinguished in different forms. Such criteria, among others, might involve: the purpose and the duration of visit, the nature of the trip, the distance traveled, the type of destination and the activities performed there, and the nature of tourists themselves. Regardless of its form the tourism phenomenon:

- Is quickly and consistently enlarging
- Is increasingly regarded as a necessity rather than as a luxury
- Encompasses a number of diverse components such as travel agents, organizers and intermediaries, attractions, accommodations and supporting facilities, the effective cooperation of which is a prerequisite for the success of tourism

The appointment of tourism to one of the world's major industries indicates and also explains its huge undisputed impact on economic growth, the balance of payments, employment and regional balances in individual countries and across regions. Europe in

particular has doubled its arrivals between years 1980 and 2000, despite the fact that, in the same time, its world market share has decreased from 63% to 58% due to the appointment of new competing destinations (World Travel & Tourism Council (WTTC) 2001). The introduction of the euro, increasing wealth and leisure time, transport and facility developments are among the reasons expected to drive the further growth of tourism.

1.2 SMEs and Sustainability in the Tourism sector

Sustainable Tourism has been defined as “tourism which leads to the management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems” (World Tourism Organization, WTO, 1993). In order to support Sustainable Tourism, WTO introduced in 1999 the “Global Code of Ethics for Tourism” and participated with the WTTC in the formulation of “Agenda 21 for the Travel and Tourism Industry” (1995). Agenda 21 defines integrated tourism development strategies as building on positive externalities and synergies with other activities (fishing, agriculture), emphasizes the environmental dimensions of development and explicitly indicates this approach as particularly appropriate for more disadvantaged regions such as certain islands. (OECD 2000).

The United Nations Environmental Programme (UNEP) has participated with other interested parties (national industry associations, major tour operators) in efforts to promote the use of Environmental Management Systems (EMS) by tourism facilities, especially hotels. Though some of these efforts have proved successful, UNEP recognizes that: “the key remaining challenges facing the tourism industry are to:

- (a) Promote wider implementation of environmental management, *particularly in the many small and medium enterprises (SMEs)* that form the backbone of the tourism industry...
-
- (e) ...promote *the involvement of local stakeholders* in tourism ventures:
- (f) *Work with Governments and other stakeholders to improve the overall environmental quality of destinations;* (UNESCO 1999:6)

At another international meeting (“Sustainable Tourism in the Mediterranean” Conference 1998), experts also noted that current efforts do not match the needs for widespread effective action and that the *integration of tourism with Sustainable Development (SD)* demands further efforts on training, awareness raising and *exchange of experience and best practice information*. One can cite a long list of regional or international meetings, conferences and symposia with participants expressing a consensus as it regards the identification of future key-challenges. These challenges have been epitomized by UNEP as the need to develop effective partnerships among all stakeholders; disseminate information on, and promote the transfer of environmentally sound technologies especially adapted for the tourism sector; and establish a system for efficiently monitoring progress towards sustainable tourism (UNESCO 1999b). Unfortunately, not many of these meetings have specified tools and processes that would allow the transformation of the wishes expressed into corrective actions, particularly by hospitality SMEs.

Why SME operations are critical to attain sustainable tourism becomes obvious in the Final Communiqué of the Conference “Agenda 2010 for small businesses in the ‘World’s Largest Industry’”(EU DG XXIII 1998). SMEs account for 99% of all businesses in European tourism, and more than 94% of them are micro-operators employing fewer than 10 individuals as compared with a few hundreds large organizations, defined as employing more than 250 people each. The future competitiveness of the 2.7 million European tourism SMEs will be the essential element of regional development strategies, employment growth, character and diversity of future tourism products. Yet, it has only recently been admitted (Hillary 2000) that SMEs, especially micro enterprises, are not scaled-down large businesses but have different motivations, perspectives and rationale in their *modus operandi*. Currently there is a great diversity of standards among SMEs in terms of economic competitiveness, quality and

sustainability. Some SMEs have heavily invested and have excelled in these features, recognizing the fact that they operate in a consumer-dominated market and capitalizing on their flexibility, ability to innovate and quick responsiveness. However, and despite the fact that the SME group is vast and too important to be neglected, sustainable practices seem not to have touched the majority of SMEs. A number of relevant researches (see below) have indicated possible reasons explaining SME unsustainable performance, such as ignorance of environmental impacts and of the relevant legislation, reservations as it regards the efficiency of self-regulation and management tools, and lack of access to those human, technological and economic resources, necessary to engage in sustainable practices.

In a comparative meta-analysis of 33 separate studies published between 1994 and 1999 in UK and the EU, the major findings involved a clearer identification of internal and external barriers to Environmental Management System (EMS) adoption by SMEs as well as of the benefits and disbenefits that resulted from such an adoption (Hillary 1999). The caveat on the study recognized that the diversity and heterogeneity of the SME sector limit the applicability of the findings and suggested that future researches consider sub-groups of the sample either by size or by *industrial sector*. To the best of our knowledge, such studies have not been completed by any authority or researcher for hotel SMEs operating on islands, at least not in Greece. So the complete set of drivers and barriers to sustainability, and the relevant significance of each are not yet known. However, waiting for the appropriate analyses to take place, while maintaining the current level of exploitation of the natural and cultural tourism capital, might result in its irreversible damage and permanent inefficiency. Future tourists are expected to be more affluent, mature, demanding and expecting a more individualized product with quality, social and environmental concerns integrated in it. Yet, a recent survey of 3,850 tourism SMEs across Europe (The European Commission 2002) indicated that the environment is considered a top priority by only 15% of the sample. At a field research performed by PriceWaterhouse & Coopers (2002) and quoted in the above cited survey, tourism accommodation industry representatives indicated customer satisfaction as a priority by 55%, employee satisfaction and loyalty by 40% and the environment by 21%. Results indicate that hospitality SMEs consider sustainability issues of lower importance and express an interest only in those practices that result either in lower consumption patterns or in a higher marketing value, i.e. to those that impact their bottom-line and market value.

1.3 Barriers and drivers in the adoption of EMS by SMEs

Most operational decisions of all companies have an environmental cost. This cost can take the form of either an increased consumption - low efficiency pattern of the various resources used, or that of an opportunity cost from lost sales and profits. Specifically for micro-enterprises and SMEs, such costs can be differentiated according to their internal and external nature. *Internal costs* result from ineffective management, poor collection and administration of environmental information, inefficient procedures, lack of compliance with existing environmental regulations, material energy and water waste and decreased employee motivation and morale. *External costs* can be grouped as commercial disbenefits from lost competitive/marketing advantage, negative environmental impacts on the natural and social surroundings and bad relationships with stakeholders, which translate to a negative public image, lost clientele, more difficult access to capital and increased regulatory oversight (Observatory of European SMEs 2002). Yet, despite the identification of environmental costs, most SMEs do not proceed with improvements of their environmental performance. A wide number of barriers preventing the adoption of such improvements has been recorded in the literature. Suggested barriers include unawareness; underestimation or denial of the negative impact of business activities; lack of time, human and capital resources to investigate sustainability issues; cost constraints to invest on their remedy; a negative perception of the results of the cost-benefit analysis of such investments (Hillary 1999 & Observatory of European SMEs 2002). The mix of barriers changes from place to place and from time to time. These barriers have resulted in only 7 EMAS-validated sites in Greece, a percentage of 0.01 per 1000 enterprises, the lowest in Europe (figure valid in January 2002). Coupled with other evidence, such as the facts that:

- only 18% of EMAS registrations in EU correspond to SMEs (EMAS helpdesk, EU 2002),
- only a minor percentage of SMEs have observed mainly positive results in company performance from environmental compliance (Austrian Institute for Small Business Research, Economic Performance Database, 1999), and
- most of the environmental tools, structures and systems have been designed by, and for, big corporations and have proved inappropriate or impractical for SMEs

it becomes evident why barriers are stronger than incentives for SMEs to proceed to the introduction of formal EMS. An EMS provides business management with a structured mechanism to measure and manage environmental risks and impacts in a consistent way (Voorhees and Woellner 1997). What national governments and local authorities should do is strengthen the incentives and weaken the barriers. Actually, governments are expected to motivate enterprises to engage in environmental activities by producing the necessary legislation and the financial environment that would allow SMEs to adapt to it. Adaptation to the existing legislation has been stated as the single most important factor instigating the environmental compliance of SMEs at a number of relevant studies in UK, Sweden and Spain (in, for instance, Hillary 1999/ "Environmental Activities in the Business Sector", Stockholm, 1999, / Report 2001 on the Spanish Enterprise's Environmental Management, Madrid 2001). Local authorities can coordinate the efforts of local enterprises, monitor their performance, provide sources of information and training, locate and disseminate best practices, and enhance the collaboration of individual companies toward these applications. Such a support would be particularly critical since the cost of implementing an EMS is mostly of a fixed nature and thus the smaller the size of the enterprise, the higher the per employee cost or the per cent of turnover cost. The *size impact* in these costs can be impressive especially in the case of the introduction of a certified EMS. Swedish evidence shows that the total implementation cost per cent of turnover for a company with fewer than 19 employees is three times that of a company with 20-49 employees and nine times that of a company with 50-110 employees (Lofqvist (2000) cited by Hillary 1999). The company size has another important impact on the environmental performance of the enterprises; customers and the public authorities exert far more pressure on large enterprises to adopt environmental policies and practices than they do to their smaller counterparts (Observatory of European SMEs 2002). Smaller pressure can be explained by an underestimation of the potential threat that SME activities represent or/and by the fact that customers and central governments lie far from the actual accumulated impact of these activities –while local authorities do not.

1.4 Current recommendations for SME sustainable performance

Paragraph 1.2 referred to the findings of major International Organizations as to *what* challenges tourism SMEs must confront on their way to sustainable operations. Yet, *how* do the same Organizations suggest that relevant problems be solved?

UNEP considers as a major emerging issue, with regard to tourism and environmental protection, the improvement of the monitoring procedure. "Careful monitoring of impacts and results, as well as the adoption of corrective measures, are conditions for sustainable tourism. Monitoring should thus be developed by all stakeholders at all levels. As previously stated, the private sector should develop monitoring and public reporting of its activities. Local and central governments should develop monitoring tools, such as indicators and should incorporate the results into the decision making process. Where appropriate participatory approaches should be used. Monitoring is currently uncommon and that should be made a priority" (UNESCO 1999:11)

OECD notices that "A strategic action plan for sustainable tourism development should be developed in consultation with all relevant stakeholders...Relevant indicators of tourism should be developed" (OECD 2000:162) and that "Further environmental management should be promoted within the tourism industry, using codes of good practice, disseminations of best practices within the profession, staff training programmes, environmental audits and voluntary agreements" (*ibid*: 164)

The European Commission (2002:6), recognizing the shortage of resources inherent in SMEs, the uncertainty arising from the imminent increasing competition with major tourism players, and the required integration between the producers of the composite tourism product suggests that “SMEs work closely together in order to assure their market position” and that “Smaller operators and individual hotels can also achieve (these) economies through access to consortia for example for marketing, purchasing and reservations. Consortia can provide smaller operators with higher visibility and viability” (*ibid*: 17) How to do so is described in page 8 of the EC report: “As markets become more integrated and the Internet eases communications SMEs can benefit from the best practices of others more easily. Regional tourism associations will have an important role in this area. They will further develop their web-offering, enabling SMEs not only to be accessible via regional portals, to their potential consumers, but also to have access to experiences and best practices from other SMEs, from their region or beyond it”.

The necessity for close cooperation between local SMEs as a *sine qua non* for their survival and prosperity has been repeatedly recognized and stressed in the past. The conference “Agenda 2010 for Small Businesses in the ‘World’s Largest Industry’” (EU DG XXIII 1998) resulted in a proposed policy framework made-up of ten overlapping recommendations. Recommendation No 1 was to “Improve knowledge and communication of existing and emerging best practices concerning tourism SMEs”. Recommendation No 3 was to “Review and improve business support systems” and No 4 to “Develop advice and support to promote the adoption of information and communications technology”. In the official publication “Tourism: Industry as a Partner for Sustainable Development” (W.T.T.C., et al 2002:42), the participating expert stakeholders express their conviction that “...hospitality sector must focus its efforts on making progress in the following areas:

- continue to gather and disseminate information on best practice
- develop a common body of knowledge so that all stakeholders in the hospitality experience can be informed of the choices available to them”

So, there seems to be a consensus between the international policy shapers on the fact that SMEs should continuously adapt and differentiate their product to meet the demands of both a dynamic, gradually integrating and consolidating market and of a growing consumer awareness of environmental issues. A management accounting tool which encompasses the above recommendations and can help Greek island hotel SMEs improve their environmental performance is presented in the second part of this paper.

1. 5 Tourism and the Hospitality sector on the Greek islands

Greece has been consistently a major destination for world tourism and despite the gradual erosion of its market share it remains within the top-twenty world destinations for the last twenty years. Tourism is important to the Greek economy contributing 6% of GDP, 15% of national exports and over 10% of the total employment (OECD 2000). Demand for tourism services is expected to enjoy a 5.0 per cent real growth per annum between 2004 and 2013 (WTTC 2003). With twelve million international tourist arrivals annually and a target of twenty million for the next decade, the tourist phenomenon already exercises an extremely strong negative impact on the environmental and cultural resources of the country, which is expected to worsen in the following years. The uneven allocation of tourist arrivals in time and space further aggravates this impact. Greece’s tourism is highly seasonal with more than 75% of international tourists arriving between late May and early September, and 40% of them in July and August alone. The intensity of tourism overnights is up to eight times greater in some regions, such as Crete and South Aegean islands, than it is in others. The Greek tourism market is mature with strong and increasing competition from neighboring destinations, competition that results in diminishing profit margins and enhances a negative attitude towards discretionary costs as well as a predisposition to externalize all avoidable costs.

The total hospitality capacity in Greece today, exceeds 1 million beds in all categories, allocated to 8,000 hotels (56% of the capacity) and all other types of tourist residencies (44% of the capacity). The growth of bed capacity the last decade (3%) is far more rapid on certain

island regions, further burdening the uneven geographical distribution of beds -and putting pressure on local resources. More than 2,300 hotels (about 30% of the total number) are accorded the AA, A or B rankings, about 4,000 more hotels (50%) belong to the prevailing C category and the rest (20%) are ranked D or E class (Papanikos 2001). 80% of all hotels operating in Greece have fewer than 50 rooms and 10 employees and are considered “micro” enterprises. Another 13% of operating hotels have between 50-100 rooms and can be classified as SMEs. Despite the gradual increase in the average number of beds per hotel for Greece from 65.3 (1990) to 73.6 (1998) (EUROSTAT 2000), only 7% of the total hotels in Greece fall in the big hotel category (over 100 rooms by European standards). Small size, lack of relevant legal framework, limited monitoring and insufficient infrastructure because of underinvestment in their construction offer partial explanations of the limited environmental services provided by many Greek hotels.

Greek islands are a critical factor for the support and further development of Greek tourism. They are a major destination for international tourists, recording over 60% of total Tourist Overnights (TOs) with 90% of those being foreign TOs as compared with an average of 40% for the rest of Greek destinations. Most of the tourists visit the islands to enjoy the Greek summer sun, swim in crystal waters, take a sunbath on sandy beaches, visit the antiquities amply scattered all over the islands and enjoy the local food, local customs and renowned night-life. Locally operating hotels and tourism enterprises have strongly capitalized on these natural and cultural assets. Undermining this heritage would rapidly lead to a deterioration of the quantitative and qualitative tourist influx. Yet, tourism has sharply changed the land use patterns on the islands. Fragile coastal ecosystems are disturbed, even destroyed during tourism infrastructure development. Construction and operation of marinas and ports disturb the littoral habitats. The frequency of forest fires on the islands has sharply increased the last years. Tourism activities generate large quantities of solid waste, which, combined with inadequate garbage collection systems, lack of organized landfills and incinerators, result in waste accumulated in uncontrolled dumps near tourist attractions. Untreated run-off solid and liquid discharges from hotel activities exacerbate eutrophication and pollution and degrade coastal waters. Tourism water demand, which can be several (up to eight) times higher than average water use by the local inhabitants, places a strain on the water resources, resulting in overpumping and gradual salt-intrusion. Transport vehicles emit air-pollutants and noise and lead to traffic congestion in the limited space especially of the smaller islands (OECD 2000). Although most of the above problems are typical repercussions of tourism development anywhere, “the fragile ecosystem, limited resources and limited scope for pursuing alternative development strategies make concerns for the environmental and ecological impact of -small island- tourism particularly acute”(UNESCO 1999:4). The strong adverse environmental effects from tourism due to island characteristics and limitations have been repeatedly highlighted at a number of conferences and have led to major relevant initiatives (found in Annex II of the above cited reference (UNESCO 1999:7-11).

The Greek National Tourism Policy must consider the restrictions inherent in the nature of islands as limitations to local tourism development plans. The latter have been consistently leading, through subsidies and fiscal incentives, to a further growth, sometimes to a duplication of infrastructure. The negative aspects of tourism and the diminishing return have recently led to a rethinking of the traditional mass-tourism approach and attempts for the development of Integrated Tourist Development Areas (Law 2545/10.12.1997). Sustainable tourism development and higher quality standards have become a stated goal and specific measures have been planned to promote them. Yet, most of the measures aim at, and can be adopted particularly by, the big hotel chains. Although both the second and third Community Support Frameworks explicitly refer to the necessity of upgrading the services offered by tourism SMEs and to the promotion of voluntary adoption of environmental management systems by tourism SMEs only one Greek hotel SME has adopted so far the Environmental Management and Auditing Scheme (EMAS)(Birkin et al STEPS Project 2001) and fewer than a dozen more have expressed an interest to implement relevant activities despite the heavy subsidization of such initiatives with as much as 40% of their total cost through the Development Laws (2234/94 and 2601/98) and other investment grants. The reasons for the

lack of interest of the Greek hotel SMEs to make use of such incentives are the same with those suggested by their international counterparts and discussed in 1.3. An alternative way is suggested in the second part of the paper for the local stakeholders to measure and manage the impact of hotel operations on the islands and thus instigate a more sustainable approach.

Part 2: The integration of Activity-Based Management in the construction of a destination environmental scorecard

2.1 ABC, ABM, and the Destination Environmental Scorecard

An Activity-Based Costing (ABC) system directs an organization's costs to the products and services which require these costs to be incurred. The use of ABC is based on the premise that products consume activities, activities consume resources and resources consume costs (Gunasekaran 1999). So costs can be traced back to the specific activities that incurred them. Unfortunately, the official definition of 'resource' refers to anything that is an *economic cost* to the business and not to anything that is consumed along the normal course of operations. The general concept of exerting control by the management of activities is referred to as Activity Based Management (ABM) (Brandon and Drtina 1997). ABC and ABM have been repeatedly suggested as methods potentially helpful toward a more sophisticated and rational cost allocation, but always at an inter-organizational approach (Matteo Bartolomeo (Ed.) 1999, ACCA and EPA 1995).

Though a management accounting tool, ABM is more concerned with planning and controlling the various activities and processes of a company rather than its functional tasks, using financial and non-financial performance indicators for the output of each activity center (Trussel and Bitner 1998). The individual hotel SMEs, operating on the islands are too small to spare the necessary resources to rationalize their resource consumption and waste production patterns. Yet, the accumulated impact from their operations on the long run can be catastrophic for the very assets that sustain their operations.

Islands should proceed with critical changes in the way they approach the sustainability issue. The individual hotel SMEs must be treated as Strategic Business Units (SBUs) of a virtual corporation, namely the island, and their operations must be monitored and coordinated in that way *which maximizes the value of the whole corporation-destination*. Local authorities, in cooperation with the local hoteliers' chamber can undertake the responsibilities that CEOs perform in a firm, i.e. those of planning, measuring and controlling. Indeed, freedom will be allowed to SBUs as it relates to their design and upkeep in whichever way they believe will be most profitable for them. If the central administration fails to do so, it will lose the benefits resulting from the SBU's better knowledge of local conditions, idiosyncrasies, and of their customers and will deprive individual firms of the incentive to fully participate in the scheme. The -initial- role of the scheme will be data collection, administration and disposal of information to all interested parties. Such data should pertain to the physical and economic impacts of the hotels' operations. The benefit of this approach is that the information collected will always be *relevant, current* and *timely* and, if organized properly, will allow an estimation of the individual performance of each SBU, simultaneously with the aggregate impact of these performances at a destination level.

The International Hotels Environmental Initiative (IHEI, www.ihei.org) has detected a number of critical environmental issues for hotels and offers tips and specialized tools that can help hotels take action, benchmarking their performance with the standards set by the organization. The "Environmental Action Pack for Hotels", a concise and comprehensible best practice manual, and the "Environmental Management for Hotels", a more technical and complex guide, can be electronically purchased from the official site of the organization. A number of other private and public institutions, such as the International Network for Environmental Management (www.inem.org), the E.U. Support for SMEs, and the Environmental Protection Agency, USA, (www.epa.gov) have also taken relevant initiatives. Despite the accessibility of these tools through the Internet, such approaches suffer from either

high cost or small relevance since ideal levels of resource consumption and waste production, measured not only in monetary but also in physical terms, differ strongly among the various types, sizes and locations of the companies. What is suggested, is the replacement of hotel-based measurements with activity-based measurements and the development of an environmental activity scorecard, adapted to the needs of each individual destination. For instance, some common critical issues for all hotels worldwide are the energy use, the water consumption and the volume of litter produced. All these incur environmental (and economic) costs arising from specific identifiable activities. The main activities responsible for incurring those costs can be detected at a destination level by making use of a Pareto approach (those few activities responsible for the greatest percentage of environmental costs). For the hotel SMEs on the Greek islands, the following critical activities (and their respective impacts) were identified:

- cooking (energy consumption, littering)
- cooling, (energy consumption, greenhouse gases production)
- laundry (water and energy consumption, liquid discharges)
- en-suite facilities (bathing, sauna, jacuzzi) (water consumption, liquid discharges)
- breakfast preparation and beverage serving (littering)
- gardening (water consumption)

Other activities that could serve as examples have been disregarded either because they are not heavily exercised on the islands or because the resources they use are abundant or recycled. Identifying the critical activities for each island is a prerequisite for the appropriateness of the analysis that follows. Identification implies a shift of the assessment emphasis from a purely economical to an environmental one, making use of Total Stakeholder Analysis (Epstein 1996). Activity drivers must be broken down by their cost behavior (Cooper and Kaplan 1991). Cooking, beverage serving and en-suite facilities are unit level activities changing proportionately to the number of overnights spent at each hotel. Breakfast preparation and laundry are batch level activities, performed to benefit a number of customers at the same time. Cooling can be classified as a facility level activity for those hotels that operate a central cooling unit, or as a unit level activity for those offering individual room air-conditioning. Gardening is a purely facility-level activity. A metric will be assigned to measure environmental pressure by each activity. IHEI suggests that energy be measured in Kwh, water in m³ and litter in lts or kgs. Pooling different environmental costs in one activity basis will have to surpass the problem of different qualities (energy consumption, water consumption, solid waste disposal) that must be cohesively considered. The impediment can be surpassed by the application of relevant accepted methodologies such as the ecological footprint methodology (Wackernagel and Rees 1996) with total environmental impact measured in units of CO₂ produced equivalents, the ‘functional units’ suggested by the ISO14040 Life-Cycle Analysis or the Global Reporting Initiative methodology (CERES and UNEP 2002).

2.2 The scheme application

After the major environmental costs have been appropriately attributed, assigned or allocated to the benefiting activities, and translated to a common denominator-indicator of the environmental impact of each activity, a double entry matrix will be produced. The matrix will have all participating hotels on the vertical axis, and activities and measured impact per activity on the horizontal. The form of the matrix is shown in Table 1:

	Cooling	Restaurant Cooking	En-suite facilities	Laundry	Breakfast	Total hotel impact
Env. Impact	CO ₂ equiv.	CO ₂ equiv.	CO ₂ equiv.	CO ₂ equiv.	CO ₂ equiv.	CO ₂ equiv.
Hotel A	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Hotel B	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Hotel C	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Hotel D	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

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Total destina

tion figures

XXXX

XXXX

XXXX

XXXX

XXXX

XXXX

Table 1: The suggested Environmental Scorecard

The sum of each column provides accumulated per activity figures for consumption and pollution, while the sum of each row provides an indication of the environmental impact of each hotel. A common activity dictionary must first be developed to identify allowable content of all activities and make the figures produced by each hotel comparable. Measurements for each activity will be collected on a periodical basis, suggestively smaller than 30 days, so that intervention and corrective measures can be prompt. Each hotel will also supply information on the area of its premises, number of rooms, beds and overnights sold, average occupancy rates and number of covers served. Relevant data can be readily available from the hotel's accounting books. When column sums are divided by the total number of overnights (or other driver) for each measurement period, they will supply a discounted per capita (or per room, or per m²) consumption or pollution figure, representing an *average efficiency indicator* for the whole island hospitality sector. This indicator can be used as a first targeted reference (benchmark) by the rear-leaders of the classification. Changes to this figure will represent changes in the efficiency with which local companies trade on their resources. Each hotel can then refer to this matrix via the Internet to compare its own performance with that of its local peers, with the average, or the best available performance. The scheme maintains the traditional ABC/M pattern with three layers: resources consumed (as recorded in the general ledger and through physical measures), critical activities (as identified and defined in various international and local studies and as performed locally), services rendered (measured by the number of overnights or other drivers, taken from the hotels' accounting books).

Details of the total energy consumption can be accessed for each particular activity through meter readings and verified from the hotel energy bill. IHEI and UNEP studies and business cases (see <http://www.ihei.org/HOTELIER/hotelier.nsf/content/a1a2.html>, and also <http://www.cep.unep.org/pubs/techreports>) indicate that there can be variations in energy consumption between neighboring equal-size hotels of as much as 40% of the total bill. Water consumption can account for over 15% of the total utility bills in most summer vacation hotels. Water management for islands is critical both in physical and monetary terms. Hotels sometimes have to pay not only to purchase but also to dispose of untreated water. Furthermore, proper water management normally results in energy savings as well. The use of appropriate measures can lead to a cut-down of fresh water consumption by as much as 50%. Collection of data requires installation of simple inexpensive gauges to measure critical activities. All monitoring and energy reducing gauges are currently subsidized at a 40-50 per cent rate by the central administration. Water company bills can be used to verify the submitted data. Finally, solid waste management is critical to cut costs, reduce pollution, conserve natural resources and reduce purchases. Poor garbage collection and disposal can seriously undermine the ability of a destination to effectively serve its visitors. At the moment there are over 7,800 uncontrolled dumps and landfills operating in Greece, many of them on tourism islands. However, the introduction of the 'polluter pays' principle implies that the management of solid wastes becomes critical for the survival of hotels since charges for disposal are rising rapidly, municipality landfill charges are gradually introduced and the legal framework becomes more austere. In fiscal terms, hotels pay for the waste twice; they pay for the packaging of the products received, and they also pay for the disposal of the packaging materials. IHEI estimates that 35% of total waste by volume and 15% of total waste by weight originates from packaging, mainly of food and beverages. Proper waste management by a hotel can produce only one fourth of the volume of waste per overnight as compared to a hotel without a waste minimization system. Such management is critical for the wider region both because of lack of dumping space and because of the complementarity that prevails in the hotel operations.

Failure of a limited number of hotels in an area to comply with sanitation or aesthetic standards will negatively affect the wider destination performance unless costs 'externalized' by these hotels are 'internalized' by other neighboring more sensible and/or better equipped hotels.

The incentives and ability of the enterprises involved to participate and meet the requirements of the scheme may come into question. For many years the management of environmental and natural resources in tourist areas was based on a legislative approach, focusing on issuing compulsory regulations. The continuing environmental deterioration of the islands indicates that this method alone has proved to be inefficient. State regulations may be excellent means of a minimum support but inadequate if not accompanied by more efficient and flexible tools such as self-regulation. Certified EMSs and over thirty different ecolabels for the hotel industry alone (CREM and CH2M HILL 2000) prove this fact. For the locally operating companies, involvement in the scheme must not be perceived as a forced compliance with certain inconceivable standards but rather as voluntary engagement with a tool which can and will have widespread, profound and long-term effects on their competitive position and profitability. For the local authorities, the scheme will offer the chance to instrument and optimize the performance of those companies that play a critical role in their income budget and quality of destination. By the time these truths become accepted, the response rate will increase and the quality of submitted data will improve. But even if it is not primarily accepted it can be implicitly forced by the tour operators. Major international tour operators, such as TUI, have both the expressed will (see www.toinitiative.org) and the power to require and monitor conformity with a number of standards. Managing over 90 per cent of international tourists on Greek islands, operators have repeatedly exercised their power for health and safety issues. They can do so for environmental issues as well, setting standards but also aiding with their resources local hoteliers in meeting these standards. The implementation of the scheme requires careful preparation and will go through the same stages like the adoption of any ecolabel. The interested parties will have to reach voluntary agreements and develop a consensus as to the recommendations, critical activities, measures and metrics used. They will have to elaborate a manual to provide specific help in carrying out environmentally friendly actions. They will have to secure consistency and reliability of measurements by jointly training qualified personnel and by periodically auditing the gauges and records. Environmental quality prizes and recognition, awarded by the local hoteliers association, can prove especially effective in enhancing positive attitudes of the hotels involved.

The central authority managing the project will set up a database to which all local hotels will have access by use of Internet facilities. Interactive sites can be used for the submission of periodical data. The positive relationship between the use of Information Technology and companies' environmental performance has been tackled in a number of articles (indicatively Rikhardsson 2001). All Greek SMEs are recently strongly encouraged to acquire and install P/Cs and network facilities, are heavily subsidized by the Greek state and various EU programs for that reason and practically all major hotels on the islands have already done so. The whole approach development must be inspired and carried out by representatives of the hotel sector and local stakeholders. Current tourism decreasing growth patterns and diminishing rates of return indicate the necessity for local entrepreneurs to readily participate in the project on a consensus basis. ABC and ABM will lend the accounting tools to set up an operative framework. The ability of this framework to function as a successful initiative and alleviate the environmental impacts of hotel operations will depend on its applicability and the grid of incentives and disincentives that will accompany it. Prompt submission and management of valid accounting and physical data will allow the users of the tool from the first year of its operation:

- To monitor the trends of resources consumed and waste produced at a destination-wide level and maintain relevant records;
- To compare these trends with the pre-assessed *carrying capacity* of the area, in this case defined as the ability of the island to support safely and persistently the current rate of tourism activities, and promptly take corrective measures when needed;

- To track the resource consumption and waste production pattern of each SBU-hotel and its attempts to improve its efficiency performance;
- To smooth-out performance discrepancies and locate potential synergies between neighboring hotels;
- To make sure that local hotel enterprises meet or exceed the national regulation standards regarding various environmental aspects;
- To align and instrument the interests of the hoteliers with those of the local communities considering national and international guidelines and restrictions;
- To pinpoint the most critical activities for the further deterioration of the regional environment, the measures that can be taken to control them and to disseminate the relevant information to all interested parties; and
- To classify the local hotels along a sustainability index according to their performance.

Such a classification will result to the disclosure of the best and worst partners operating on the island. Because of the aforementioned complementarity, the most efficient hotels have a strong motive to share the application of their best available techniques (BATs) and support weaker hotels in the adoption of such techniques. A hotel environmental index may reveal extreme weaknesses, negative attitudes or persistent inability of certain hotels to comply with performance requirements. Such cases should be led to cease operations since they are implicitly subsidized by their peers and the continuation of their operations can only undermine the sustainable performance of the wider destination.

The scheme will ultimately take the form of an “island hotel observatory”. Developed for a non-profit scope, it can be publicly or privately sponsored. It is suggested that costs related to establishing the scheme be subsidized by the administration while operating costs be paid by the participants. Participants from the hotel sector as well as other social partners and local authorities can create a public trust offering to the system credibility and transparency. This concept has been efficiently applied on the “Blue Flag” award since 1987. All participants must maintain a real interest in the sustainability of the area. Prefectures, municipalities, non-governmental organizations (NGOs), tour-operators, other entrepreneurs active in the region, must set up a grid of incentives to reward proactive companies and disincentives to punish those reactive or indifferent. Such incentives might include easier access to funds, enhanced reputation, lower oversight and increased participation in local occasions. The management of the critical activities according to the ABC/M literature will be the next step (Brandon and Drtina 1997). Those hotels demonstrating poor performance will have to proceed in:

- The elimination of non-value adding activities, i.e. those activities scarcely demanded or incurring disproportionately high environmental costs as compared to the economic benefits they produce
- The reduction or/and redesign of the low value – high cost activities by continuously monitoring and introducing technological advances and new managerial practices
- Activity sharing. Opportunities are abundant on small islands and it is only the lack of coordination and personal dislikes that do not allow their application. Linkage exploitation, collective order placement, economies of scale, common training of employees, destination advertisement schemes are only a few of the initiatives that can lead to shared fixed costs and increase economic benefits without compromising the area’s sustainability
- Changes to their costing and therefore to their pricing decisions so that all past, present and future environmental costs are considered and no service offered is under- or over-costed.

2.3 The scheme’s future

The establishment of a hotel observatory on each major tourism island can raise further expectations for the immediate future. The ultimate configuration of such a scheme should not be that of a passive internal information recipient and manager, but rather that of an active importer and supplier of appropriate, audited and valuable knowledge. Small hotels very often invoke their small size as a justification for their lack of compliance, an excuse which most of

the times is true. On the mid-run the scheme can widen its scope to a number of complementary directions. A properly staffed and equipped observatory would be able to:

- Collect and disseminate information on the best worldwide available, practices for the activities under consideration;
- Collect and disseminate comparative information on the best available environmental improvement financing tools such as available subsidies, grants, tax-rebates, bank loans;
- Become a focal point for consultancy, commercial, and technical enterprises that are interested in operating on the island by offering products and services which fall in the sustainability domain; (Wagner 2002)
- Participate as a representative of the interests of local hoteliers at national and international events where tourism or sustainability policies are produced;
- Produce and manage a local eco-label scheme emphasizing the local priorities;
- Set negotiated annual incremental and attainable performance goals which can foster a sense of ownership and motivation among the participating members;
- Establish close relationships with respective schemes of neighboring islands that may result to synergies, exchange of experience, knowledge and hence to mutual benefits; and
- Set up training programs for the hoteliers and other hospitality employees on the introduction of sustainability in their policy and operations.

The emphasis on an efficiency improvement of the critical activities, as suggested by this approach, will be well approved by all hotels. The scheme requires a low investment cost (meters installation and P/Cs) especially if financed in the way described in 2.2 and is expected to benefit the hotels' bottom-lines. In financial terms, the application of the scheme's requirements will have a positive Net Present Value and a payback period that varies between 6 months and three years (CADDET 1997). The scheme can set the basis for the creation of an individual balanced scorecard through which each hotel will be able to measure and coordinate its financial and physical performance. Simultaneously, it will benefit the local and national economy if coordinated with other local sustainability schemes. Also, it will operate against widely applied black-market practices, since unregistered customers will result to a deterioration of the per capita consumption and pollution indicators (and thus to a loss of relevant benefits) for the tax-evasive hotels.

The training of the managers for the scheme and the credibility and confidentiality of the figures produced are critical issues. Lack of verification of the measures submitted and of the averages produced can lead to the collapse of the whole scheme. The expected accuracy of the submitted measures is not excessive since the whole approach does not emphasize static measurements but rather *incremental changes* from one period to another and since the scheme does not have a costing but rather a managerial emphasis. The wider framework is practical and flexible but problems related to its application cannot be located for as long as the system has not been implemented by a destination. However, the operational prospects are positive since the framework is based on the principles of widely and effectively applied managerial accounting tools (ABC/M) and will use primary input developed by, and for, the destination it was produced to serve.

2.4 Conclusions

The establishment of a local tourism observatory, which will set up and manage a network of hotel SMEs, will result to the collection, organization and dissemination of useful, relevant and timely information on their environmental performance. A local environmental scorecard, based on the principles of ABC/M has been described as the ideal tool to receive, organize and present this information in a way which allows an estimation of the weighted participation of each hotel in the total island resource consumption and waste production. Such a scheme can set the basis for an approach which, coupled with a number of incentives, a code of good conduct and the proper oversight will seriously strengthen the sustainable prospects of the area.

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