Project evaluation for the accommodation industry in a sustainable development context

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Environmental, social and cultural preservation of the host region makes the sustainable development for tourism a pressing necessity. This aspect is unanimously pointed out as crucial for the prosperity of the industry itself. In Portugal, the role of public institutions concerning the investment in lodging units is exerted at two levels: (i) licensing by the local government and (ii) investment incentives given by governmental agencies. However, in none of the situations the component of sustainable development is evaluated. This leads to the implantation of units with a weak compliance in environmental and social terms. On the other hand, investors need fast decision processes not compatible with an EIA, at least in small/medium size investments located in non-restricted areas.

The research deals with two main questions:

- In an *ex-ante* situation, which criteria must be applied to the evaluation of the investment in accommodation units, regarding the achievement of sustainable tourism?
- What type of decision model is better fitted to the evaluation process?

Sustainable tourism indicators and tourism ecolabels are reviewed, and single-criteria (with special emphasis on CBA) vs. multicriteria approaches are compared. Finally, it is proposed a multicriteria evaluation model based on a checklist of environmental, social and economic criteria, in accordance with eco-efficiency and Corporate Social Responsibility.

Keywords: sustainable tourism, accommodation, project evaluation, eco-efficiency, CSR, multicriteria.

Introduction

The impact of tourism on the environment, as well as the means of its measurement and minimisation, represents a concern that has taken on growing importance for a diverse range of stakeholders. The European Union, like various other states, has drawn up a series of labelling programmes. In terms of local government, there are efforts to integrate the tourism sector into Local Agendas 21. In recent years, the World Tourism Organization has developed indicators on sustainable tourism. The industry and its respective associations have signed up to voluntary practices that aim to improve company performance in environmental field. Some consumers have begun differentiating between services and are prepared to pay an additional premium for those they consider to be more environmentally responsible. Local populations have become involved in campaigns against environmental damage and to demand an active role in the decision making process.

These questions have been approached with significant frequency by academic papers in the last two decades, as Hall *et al*. (2004) bear witness to. However, a good deal of such analysis has focused either on impact analysis or on proposing indicators that enable their monitoring and evaluation be it at the local or regional level. Far less common are works that seek to set out *ex-ante* criteria for evaluating accommodation units and determining whether or not they are in keeping with the principles of sustainable development. In Portugal, such a shortcoming may further be found in operational terms at the level of investment support.

Thus, it is at the micro level of planning that a contribution may be made through highlighting the importance of accommodation units meeting eco-efficiency criteria in an *ex-ante* investment phase. The objectives of this work are:

i) reflect on the importance of concepts of sustainability within the tourism sector and specifically in accommodation unit investment projects;
ii) demonstrate the limitations, from a sustainable development perspective, of cost-benefit analysis as the prevailing investment project evaluation methodology;
iii) identify criteria that appropriately evaluate project sustainability as regards:

- minimisation of any environmental impact, particularly in the sustainable consumption and utilisation of resources (eco-efficiency)
- fostering corporate social responsibility and promotion of local communities;
- regional economic development;

iv) contribute towards the implementation of an *ex-ante* evaluation model for tourist accommodation units that fully incorporates these economic-environmental-social dimensions.

The impact of tourism and specifically the environmental impact of tourism accommodation units are raised in the second section before moving onto the sector's own efforts with special attention to eco-labels. The fourth and fifth sectors deal with the rationale for adopting eco-efficiency criteria and the importance of their integration into an *ex-ante* evaluation model. The approval process for accommodation units in Portugal is focused on in the sixth section before contrasting the two prevailing project evaluation methodologies: CBA and MCDA. The eighth section refers to the criteria to be integrated in the evaluation model and, finally, conclusions are reached.

The impacts of tourism

As a human activity, tourism promotes the interaction of visitors with their respective destinations and communities. This generates a series of effects for the local population, for the physical space as well as for the tourists themselves. Research into the impact of tourism began in the late 1970s and suggests that such impact has tended to be predominantly negative. However, while generally used as pejorative terminology and associated with negative aspects or consequences, the reality is that tourism's impact can also prove to be positive. Indeed, in many cases, residents in tourist regions want that destination to be visited in the hope that this creates prosperity with employment and earning opportunities (Wall, 1997). It is such a context that renders analysis of the impact of tourism so complex and due to a whole variety of factors. Holden (2000) outlined such issues, including:

- tourism is a sector that makes up a considerable proportion of a significantly diverse range of activities, which makes it difficult to consider as an homogeneous sector;
- its impact is multifaceted and difficult to compartmentalize;

- research on impact is still in an early phase and no truly multidisciplinary approach has yet been set out;
- the consequences of tourism are studied reactively;
- it is not always possible to precisely ascertain causal responsibility for the impact: whether it is local inhabitants or tourists or whether tourism or other economic activities;
- tourism is an incremental activity but its effects are cumulative;
- different types of impact are measured in different ways making their aggregation difficult;
- the impact of tourism is on occasion characterised by spatial and temporal discontinuity;
- initial impact results in a variable chain of complex interactions that bear repercussions creating secondary and even tertiary impacts.

The impacts, although susceptible to being mitigated through planning and development strategies involving stakeholders, are apparently inevitable. From the perspective of McKercher (1993), this may be attributed to the existence of eight structural realities, that is, the fundamental truths (Fig. 1).

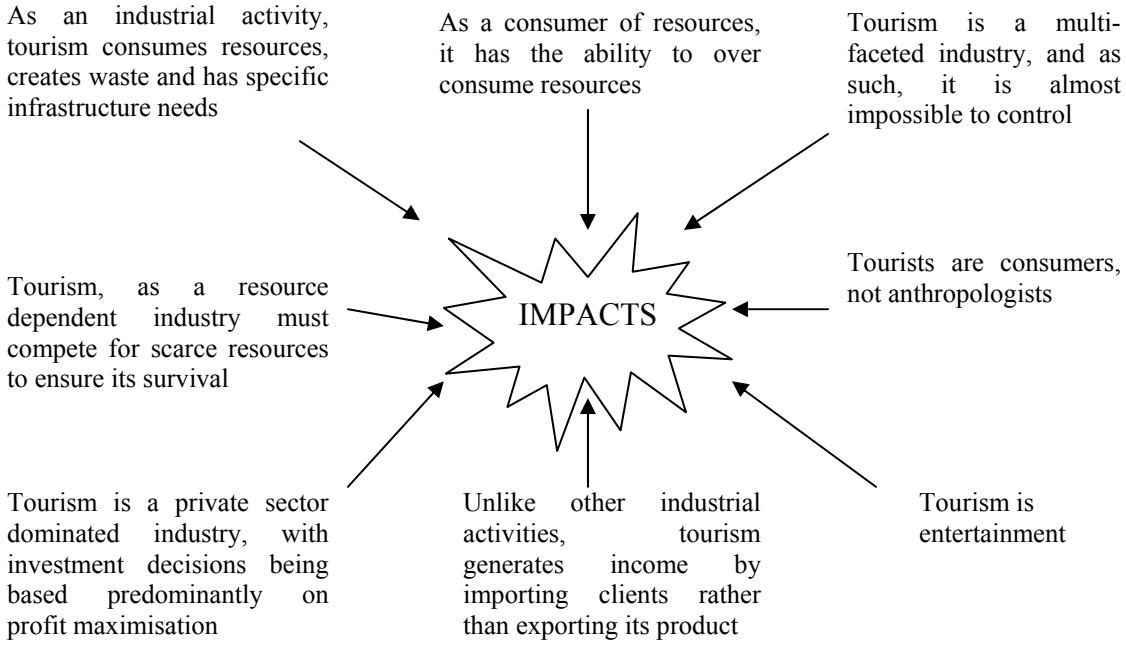

Fig. 1- Tourism structural realities or fundamental truths. Source: McKercher (1993).

In spite of impacts rarely being open to compartments, the literature normally divides them up into three classes: environmental, economic and social. Annexe 1 present a short summary of the most frequent forms of tourism.

Sector initiatives: eco-labels

Eco-labels came about in order to identify those organisations that promote environment friendly tourism. They may be applied by hotel chains, sector organisations, independent organisations or government initiative, taking the form of voluntary codes, awards, accreditation or certification.

The main purpose of these labels is, as Buckley (2002) stated, to help consumers decide, with the key test for such systems being recognition and acceptance by tourists[1]. However, the implementation of such systems has a cost that ends up reflected in the final price paid by the consumer. Hence, the success of any such programme depends on the willingness of consumers to pay more to consume environmentally responsible services. Therefore, for consumers to adhere to these programs it is necessary that they have a deep environmental concern; that this extends to the leisure and vacation periods; that they wish to pay a premium for a service that benefits not only him/herself but the entire community; and that they do it to reduce the impacts in a zone of residence that is not their own. In addition, this is a benefit that only a small minority of consumers are prepared to pay thus ensuring it is diluted across a large group including the great majority that take up non-labelled services. This, thereby, results in a situation in which the greater the number of tourists opting for non-labelled services, the lesser the benefit attained by those paying the premium. The decision to consumer eco-labelled services is therefore rather altruistic in nature.

Reasons for adopting eco-efficiency criteria

Eco-efficiency means the creation of products and services with a reduction in both the usage of resources and in the production of waste and pollution (WBCSD, 2000). From a broader perspective, it falls within the concept of Corporate Social Responsibility (CSR), *"*(…) *according to which companies decide, on a voluntary basis, to contribute*

[1] Another purpose of labelling lies in its utilisation by government departments for awarding licences or subsidies.

towards a fairer society and a cleaner environment"[2]. The adoption of eco-efficient practices stems from both ethical and economic reasons.

i) Ethical Reasons

CSR advocates the principles of sustainable development based on intra-generational equity (a fairer society) and inter-generational equity (environmental preservation for the benefit of future generations). There is an ethical dimension to action taken to achieve such objectives given that cutting environmental impact and encouraging a cleaner environment are considered as ends in themselves.

ii) Economic Reasons

Perhaps due to the ethical motive proving insufficiently convincing and actually able to achieve a better social and environmental performance from the private sector, the WBCSD and the European Commission have stressed the economic benefits derived from adopting such measures[3]. These gains may be generated by the reduction in costs, the opening up of new markets or the preservation of factors required for the business to operate (fig. 2).

Regarding the reduction in operating costs, these are obtained through a reduction in energy and water bills. Investment in equipment enables more efficient consumption of such factors just as any investment in renewable energy has immediate consequences for company operating costs. These are cut as from the moment the equipment enters into operation. Various known cases demonstrate that such investment is significantly profitable because the pay-back period is generally very short[4]. It is on this point that the WBCSD places its approach because, for the related reasons, companies experience no difficulty in accepting this as an interesting investment.

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[2] Rego *et al*. (2003) p. 16, citing the Green Book for the Corporate Social Responsibility, of European Commission.

[3] "Eco-efficiency has so far primarily been used in the context of industrial economics to reduce costs and to create new market opportunities with the bi-effect of decreasing the impact on the environment" in Gössling *et al*. (2004).

[4] Two years, for example, in cases detailed by the Australian Department of the Environment and Heritage, see http://www.deh.gov.au/settlements/industry/corporate/eecp/industry.html#7

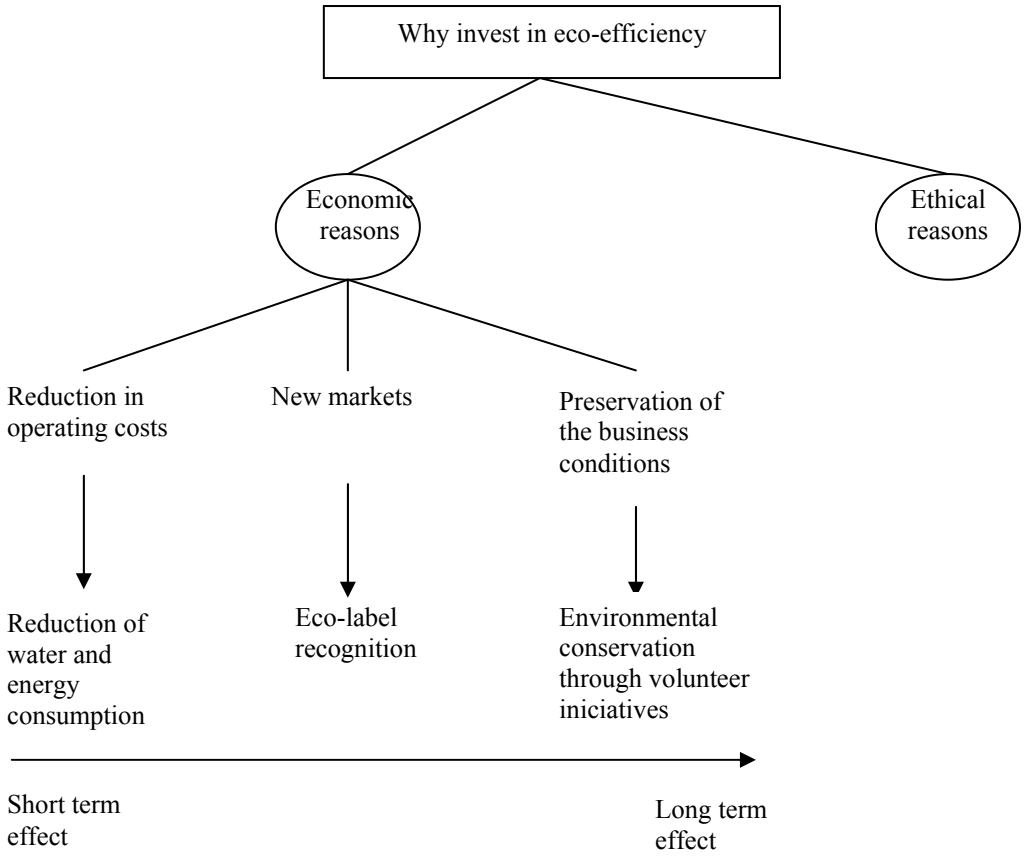

Fig. 2- Reasons for eco-efficient investment.

Increasing business volume is only possible where the company can demonstrate differentiation from the competition, for example, through labelling. However, the demand for such initiatives has been very restricted in the tourist accommodation sector. In terms of demand, there also lacks a mass market of consumers (tourists) that appreciate and opt for eco-efficient accommodation units. Indeed, there is (still) no well-defined "green tourist" sector (Swarbrooke & Horner, 1999, cited by Lima and Partidário, 2002), characterised by its environmental concerns. Only a small number of tourists are aware of such issues, and changing such attitudes is only possible over a significant timeframe though incremental education and the promotion of these concepts. In terms of costs, the implementation of the majority of the measures demanded does not bring about broad reductions in costs (apart from the reduction of water and energy consumption). In addition, companies often refer to the high fee charged by the label managing entity. This situation is reflected in the low number of

labelled units,[5] suggesting that, for the meantime, labelling for marketing motives does not constitute a financially worthwhile investment.

In order to preserve their own operational conditions, business itself has a motive to promote social and environmental quality in order to ensure its own survival into the distant future. However, this perspective raises some questions:

1- In the short term, benefits for the company are nonexistent, which could mean that, in this period, such investment may bring a smaller return than that desired by shareholders.
2- Any company investing in eco-efficiency is encouraging not only the continuity of its own business but the entire sector, including competitors taking a short-term perspective. Hence, the free rider effect comes into play with the benefits of environmental protection policies benefiting all irrespective of whoever invests.
3- Commonly, there is a weak connection between the site/region of the investment on the one hand and the source of capital and company management on the other.

These are some of the reasons for companies not acting altruistically.

Given this, companies opt to meet eco-efficiency criteria where costs are reduced (Demajorovic and Antunes, 2004). A full commitment to eco-efficiency practices, achievable through labelling, may prove to not be economically viable[6].

The importance of *ex-ante* evaluation

It was intended to demonstrate that, from the perspective of the majority of investors, the economic circumstances are not in place for a full commitment to eco-efficient investment. While there is no mass market of tourists willing to pay a premium, only a

[5] Documentation from the Life Project indicates that less than 0.01% of European accommodation units are labelled. Ecotrans (2002) echoes this perspective: "Thus, the take up of eco-labels and certification schemes still remains a drop in the ocean compared to the volume of business conducted in the sector".

[6] For example, take the purchase of "environmentally friendly" products such as organic food, biodegradable disinfectants and detergents, and other products with an ecological label. Such products frequently come with a higher price for a lot of reasons (ranging from their quality through to the pricing in of greater investment in research and development), but particularly because many of the other products produced in the standard fashion include neither environmental nor social externalities in their final price. The commitment by companies to acquiring ecological products and services rarely provides any immediate advantage to turnover.

limited number of units will opt for labelling. Given this situation, it is probable that the consequences of tourist accommodation for the environment will continue to generate noticeably negative impacts.

Thus, legislation and regulation are required to generalise eco-efficient investment. Buckley (2002) stated: "w*hile ecolabels are a valuable tool for the tourism industry, they will likely be most effective if used along with other environmental management tools, as part of an integrated strategy. Environmental legislation and regulations (...) can provide a base level of protection in an equitable way, with minimal-impact ecolabeled products available as an add-on at a relatively small price differential*."

Simultaneously, there are important advantages to be gained from introducing environmental criteria during the project investment phase. A report from the *Centro para a Conservação da Energia*- Centre for Energy Conservation (1999) suggests that "(…) it is important to raise awareness among both those responsible for granting licences and the sector itself as regards the importance of integrating criteria for energy efficiency at the design phase of the building and its energy systems (…)".

In this context, eco-efficiency criteria would be integrated into an evaluation process that further includes both social, under the scope of CSR, and economic criteria. It should be noted that the full integration of these three facets is fundamental to sustainable development. They should be taken into consideration by local entities granting licences to accommodation units, state authorities managing investment support programmes and financial and credit entities, similar to practices already established under the Equator Principles. This would also provide the governing entities with a valid instrument for ensuring planning at the micro level.

The situation in Portugal

In Portugal, granting accommodation unit licenses is a municipal council responsibility that follows on from requesting authorisation from the *Direcção Geral do Turismo* (General Directorate of Tourism), the *Comissões Coordenadoras de Desenvolvimento Regional* (Co-ordination Commissions for Regional Development), the Health and Safety Authorities and the National Fire Service. Only when located away from urban areas or land designated as eligible for urban development, does it become necessary to

carry out an Environmental Impact Assessment (EIA). However, there are very few cases where investment projects actually undertake such a process. As Silva *et al*. (2002) states: "an example of this is the fact that in the Algarve, the most developed of national tourist regions, there is no known case of any hotel establishment, or other form of tourist accommodation project, where the application of the Decree-Law has resulted in the need for an Environmental Impact Assessment". Given that other regions and locations are exempt from EIA, environmental evaluation of investment projects is practically always overlooked.

In terms of tourism investment support programmes (SIME, SIPIE, PITER II and SIVETUR, of which the latter two are specific to the tourism industry), the situation is not significantly more demanding. As Fazenda (2005) explains: "in the financing of tourism sector projects by the various Operational Programmes, the selection/hierarchical ranking of applications does not often consider the utilisation of criteria and/or indicators of sustainability, especially in environmental terms (with the possible exception of Sivetur)."

CBA vs. MCDA

Cost Benefit Analysis (CBA) and Multicriteria Decision Analysis (MCDA) are the two prevailing methodologies applied in evaluating investment projects with a social and environmental impact.

Taking into consideration Pareto efficiency and the Kaldor-Hicks principle, which represent the theoretical foundations of CBA, the methodology may be criticised as regards:

- compensation for individuals affected by the project;
- inequality in the redistribution of the gains generated;
- choice of discount rate;
- risk and uncertainty;
- data collection methods: declared preferences and revealed preferences.

Debate as to the efficiency and equity of CBA is sharply divided. Indeed, proponents of the criteria of efficiency explain that the methodology has a single purpose: the efficient allocation of resources. Equity is to be ensured through the taxation system and other

policies for the redistribution of wealth[7]. This position holds that the shortcomings of Pareto criteria as a means of achieving social justice are a false question. This methodological approach neither answers nor even seeks to answer that question.

Alternative or complementary models should be encouraged in order to improve the quality of both public and private decision making on investment projects.

MCDA has progressively emerged as an alternative to CBA in both academia and public policy making. The two methodologies (or paradigms, according to Joubert, 2002) present decisively differing concepts (Table 1), particularly as regards sustainability.

Table 1- Contrast between CBA and MCDA methodologies

	CBA	**MCDA**
Methodology	Standardized	Diversity of approaches
Flexibility	Weak	Strong
Method of analysis	Complex and objective	Simple and subjective
Tools to deal with uncertainty	Risk Premium, probabilities, sensitivity analysis	Utility models, probabilities, sensitivity analysis
Selection criteria	Net Present Value	Global Value of the Alternative
Inputs	Quantitative data	Quantitative and qualitative data
Strength	Uses only monetary values	Allows qualitative data
Weakness	Data collection dificulties, all trade-offs are possible	Subjectivity
Theoretical backgrounds	Pareto efficiency and Kaldor-Hicks principle	Depends of the model
Ethical backgrounds	Utilitarism	Any socio-economic ethical approach

[7] "*After all, any policy that passes the cost-benefit test but creates net losses for the poor can be transformed into a Pareto improvement by simply making the tax system more progressive. Rich and poor alike have an interest in making the economic pie as large as possible. Any policy that passes the cost-benefit test makes the economic pie larger. And when the pie is larger, everyone can have a larger slice*". In Frank (2000).

CBA represents a reductionist model in its adoption of a single measurable indicator (unit of currency), one dimension (economics) and one objective (maximisation of economic efficiency). In contrast, multicriteria models demonstrate characteristics that allow for:

- consideration of a highly diverse set of quantitative and qualitative data;
- the incorporation of inputs from different fields (a multi-disciplinarily approach);
- work in the framework of strong sustainability, preventing undesirable trade-offs between some dimensions (a factor only possible in non-utility based models)[8];
- the existence of other ethical perspectives beyond utilitarianism.

These characteristics represent conclusive arguments in favour of the primacy of multicriteria models. However, both methodologies pose limitations as regards their applicability as decision making support tools. March and Simon quoted by Olson (1996) sets out how certain features of decisions have be taken within a limited time frame: decision makers do not have the (perfect) information that is a theoretical assumption to the models; they neither know everything that they would like to know nor understand everything that would wish to.

Little research has been done into *ex-ante* project evaluation of tourism accommodation within a context of sustainable development. One approach consists of a selection of indicators/criteria to make up a checklist. This is the methodology followed by, to take examples, Partidário *et al*. (1993) and the *Groupe Développement* (2000), as well as the majority of labelling programmes. The second approach involves a forecast of consumption levels (water and energy) and the demand that new establishments achieve lower levels than those already in operation. This method has been adopted in the work of Silva *et al*. (2002) and in the benchmarks promoted by the IHEI. Both methodologies have their strengths and weaknesses. The consumption forecast approach demands a lesser volume of information from the project management entity when compared with the checklist method. However, it in turn requires statistical data on already operational units and their respective levels of consumption. A significant percentage of hotel

[8] "*Some critics of multi-criteria evaluation often say that to compute some kind of "utility" requires making trade-offs and thus there is no real difference between multi-criteria methods and conventional cost-benefit analysis. I share this opinion, but I would like to stress that this applies only to utility based compensatory multi-criteria methods"*. In Munda (2002).

industry environmental impact can indeed be determined through consumption (water, energy, heating fuel and/or propane gas). However, two factors should be highlighted:
(i) this is highly dependent on the accuracy of the consumption forecasts given that they are the only inputs into this model. Erroneous information calls into question the entire validity of this methodology;
(ii) the reference value against which project forecasts are compared is the consumption average of operational units. If these are highly inefficient, there is a risk of approving projects that are almost as inefficient.

For such reasons, the checklist methodology was the preferred option for this work.

Criteria to be integrated into the evaluation model

Much of this type of investment is made in urban areas, is small or medium in scale and needs quick approval. As such, in the project approval process, it is not reasonable to demand the level of complexity of an EIA, particularly because the measurement of impacts is a difficult and lengthy process.

Indicators monitoring this activity are important in the planning context but of little operational relevance when an evaluation of the establishment is required.

Criteria were selected that enable an effective *ex-ante* evaluation (and not merely of intentions) of the environmental, social and economic characteristics of the investment project. Thus, the selected criteria can be verified through documentation provided by the project manager to the licensing entity in accordance with the legislation in effect. It was therefore not difficult to select criteria relating equipment and engineering, such as bioclimatic architecture and eco-efficient equipment (for water and energy consumption saving).

The result is a draft of criteria set out in Annex 2. This checklist contains certain shortcomings particularly as regards the social criteria due to:

- social impacts caused by an establishment on a local population are almost always insignificant and it is very difficult to measure it (generally is the cumulative effect that proves importance);

- the practice of the CSR, such as for example the employment policy, can only be observed after the operational launch.

The economic criteria are based on economic-financial project forecasts and broadly rest on an economic evaluation that seeks to measure investment impact in its differing forms (earnings, employment, etc), both upstream and downstream of the activity, designated indirect impacts. However, the calculation of indirect impacts raises a series of difficulties due more to the sheer volume of base information necessary rather than any actual methodological obstacle. The most common method of calculating indirect impact is through recourse to multipliers based on inter-industry matrixes. In Portugal, there are no regional input-output matrixes. In turn, while the Tourism Satellite Accounting (TSA) was recently completed it lacks employment statistics. In a later as yet unscheduled phase, a regional breakdown of some variables is planned. The only regional initiative in this field is the TSA for the Algarve completed by the WTTC which, given that it does not discriminate between the sectors making up the tourism industry, invalidates any analysis of accommodation provision.

The question of statistical information broken down to the regional level is important given the economic impact of a hotel establishment is not identical in different places. This issue is raised frequently by the literature.

The options available are therefore:

- ascertain the multipliers based on national data, even while accepting that these multipliers applied to regions reach erroneous results;
- not to resort to the use of multipliers and rely only on measurements of the direct economic effects.

The option taken was to take only direct project impact into consideration thereby leaving the multipliers out. This is justified by:

- the multipliers regularly provide overestimates of impacts;
- there is no knowledge of the scale of error in applying to different regions a multiplier generated from a national context.

Further research into the appropriate criteria is necessary, with particular attention to the social and economic.

Conclusion

Impacts caused by tourism are diverse and possibly unavoidable in the sense that they are susceptible to being minimised but never eradicated. Sector initiatives to limit such effects may be seen in the voluntary initiatives of which eco-label is a central point of reference. However, such initiatives, incurring additional investment costs, have been limited in scope to recognised market niches or have served primarily to reduce costs. Given these circumstances, there is no economic advantage to a full commitment to building environmentally sound tourism accommodation facilities and, consequently, to social responsibility. The introduction of the environmental, social and economic criteria during the investment project phase, as part of the evaluation model, stands out as a socially and environmentally responsible solution and an important tool in the overall planning process.

However, with the exception of those fostering eco-efficiency, the selection of social and economic criteria raises difficulties that are far from being resolved.

The next steps in this research are to (i) improve economic, social and environmental criteria that guarantee investment quality in such areas; (ii) integrate the criteria in a multi-criteria evaluation model; and (iii) test that model.

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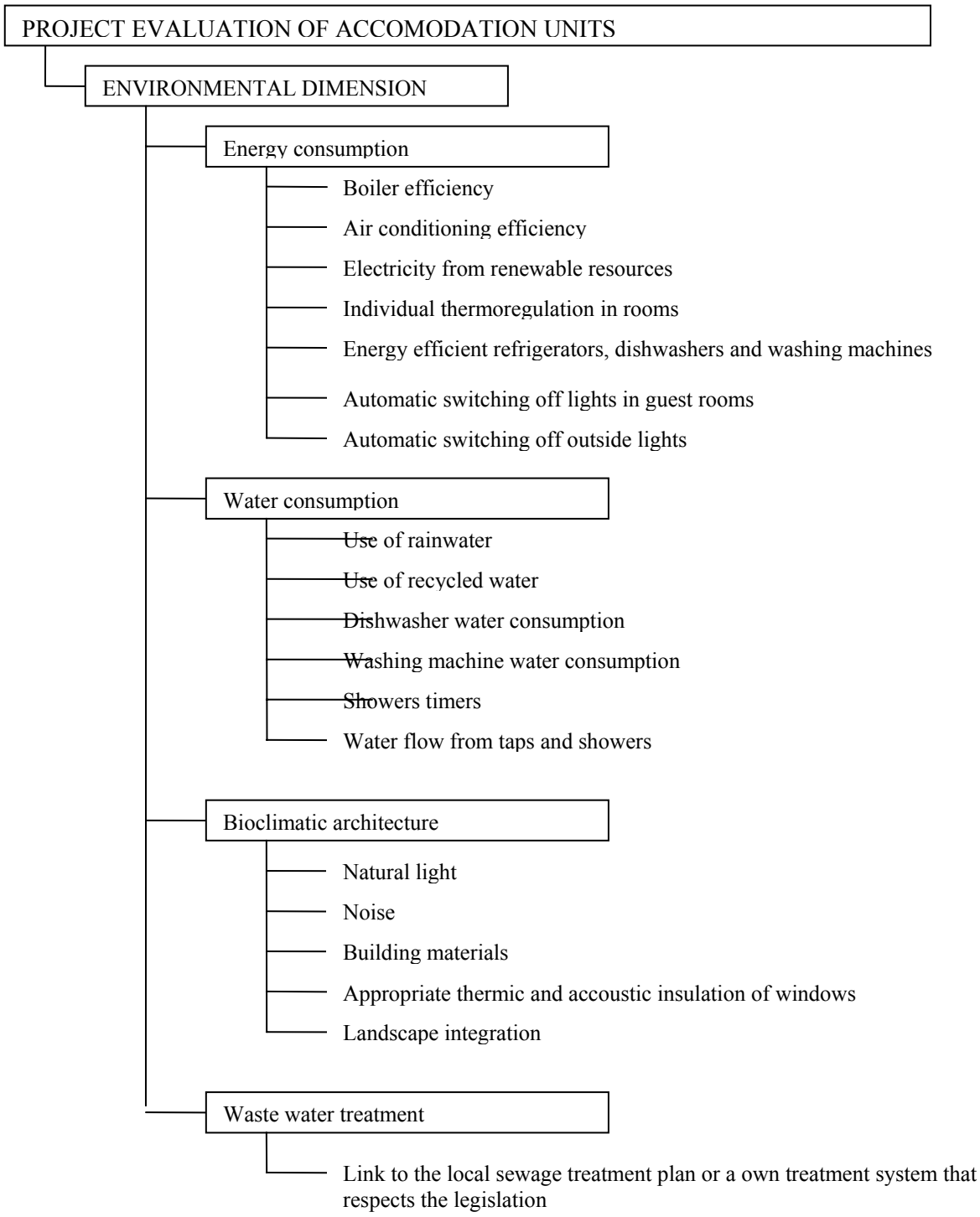
Annex 1- Tourism impacts. Source: Mason (2003)

	Positive impacts	Negative impacts
Environmental	-may stimulate measures to protect the environment, landscape and wildlife; -can help to promote the establishment of National Parks and Wildlife Reserves; -can promote the preservation of buildings and monuments.	-can contribute to congestion in terms of overcrowding of people as well as traffic congestion; -can contribute to the pollution of water courses and beaches; -may result in footpath erosion; -can lead to the creation of unsightly human structures such as hotels that do not fit in with vernacular architecture; -may lead to damage and disturbance to wildlife habitats.
Sócio-cultural	-creation of employment; -revitalization of poor or non-industrialized regions; -the rebirth of local arts and traditional cultural activities; -the revival of social and cultural life of the local population; -the renewal of local architectural traditions; -the promotion of the need to conserve areas of outstanding beauty which have aesthetic and cultural value; -encouragement of greater social mobility through changes in employment.	-stress for both tourists and residents; -the decline of traditional activities such as farming; -over dependence on tourism; -residents may find it difficult to co-exist with tourists who have different values and who are involved in leisure activities, while residents are involved in work; -when tourism is seasonal residents have to modify their way of life for part of the year; -in countries with strong religious codes, altered social values caused by a tourist invasion may be viewed as nationally undesirable.
Economic	-contribution to foreign exchange earnings; -contribution to government revenues; -generation of employment; -contribution to regional development.	-inflation; -opportunity costs; -over-dependence on tourism.

Annex 2- Structure of the evaluation model



PROJECT EVALUATION OF ACCOMODATION UNITS (cont.)

- SOCIAL DIMENSION
  - Satisfaction of local population
    - Ratio of infrastrutures by the local population
    - Access to natural resources by the local population
  - Sazonal Employment
    - (nº of jobs in high season) / (nº of jobs in low season) or (Permanent jobs created) / (Total jobs)
- ECONOMIC DIMENSION
  - Gross Value Added - GVA
    - Social Internal Rate = $\sum_{0}^{t} \frac{GVA_t - I_t}{(1+SIR)^t} = 0$
  - Employment
    - Distributive effect = (wages to local employees) / GVA
    - Work intensity = Investment / Nº of employees
    - Average Labour Productivity = GVA / Nº of employees
  - Self-financing
    - Equity capital / Investment
  - Public Revenue

MAIN OBJECTIVE

- INTERMEDIATE OBJECTIVES
  - Criteria-objectives
    - Criteria