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# The development of indicators for sustainable tourism: results of a Delphi survey of tourism researchers

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## Abstract

This paper presents the results of a two round Delphi survey conducted into expert opinion on the development of indicators to measure the movement of the tourism product at a company/resort level towards a position of greater or lesser sustainability. This research forms part of a wider project to develop indicators that consumers can use in the selection of their holidays and promote a more sustainable form of tourism. The results of this expert survey show considerable disagreement over “sustainability” and where the borders of the concept exist. In addition, the research identified contrasting views over the use of qualitative versus quantitative indicators and the role that consumer pressure can play. The use of the Delphi technique to address complex and uncertain issues is also explored. © 2001 Published by Elsevier Science Ltd.

*Keywords:* Delphi; Indicators; Sustainability

## 1. Introduction

“It is when the hidden decisions are made explicit that the arguments begin” (Hardin, 1969, p. 1244).

The aim of this research is to develop indicators that can be used by consumers to assist in their choice of holidays and promote a more sustainable form of tourism. This paper presents the results of the first stage of that research. The aim of this paper is to identify what expert opinion believes constitutes sustainable tourism, what criteria are necessary for successful indicators and which indicators can promote a more sustainable form of tourism. Later research will seek to identify industry and consumer opinion.

Hart (1997) simply describes an indicator as “something that helps you to understand where you are, which way you are going and how far you are from where you want to be”, while the Department of Culture Media and Sport (DCMS, 1999) more simply states the “aim of indicators is to produce what is measurable and show us something”. Indicators today have an increasing resonance in politics, with a seemingly endless desire to measure the previously unmeasured and to compare the

performance of different providers of service. Schools are monitored for the value they add, health services for the standard of care they provide, and transport for the punctuality and quality of provision. The increased need for transparency of investment and consumer involvement has fuelled much of the need to measure what may previously have been considered too subjective.

The list of acronymic organisations involved in this development of indicators of sustainable development (ISD) is long and impressive. The European Environment Agency (EEA), United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), The World Bank, World Watch Institute, International Institute of Sustainable Development (IISD), New Economics Foundation (NEF), United Nations Commission for Sustainable Development (UNCSD), WTO (World Tourism Organisation) and nationally Department of Culture Media and Sport (DCMS) and Department for Environment Transport and the Regions (DETR, 1999) are just the main organisations. In addition, industry in non-tourism sectors has increasingly developed indicators for use at all levels, right down to the individual production unit. Yet, the common theme to all indicators, whoever is using them, is that they can be criticised. The EEA concedes of its own indicators “in the view of the agency ... (they) have had little success in arriving at meaningful tourism

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indicators” (quoted in DCMS, 1999). The subject is relatively new, the concept that it is trying to measure is difficult and there are a myriad of perspectives to take. ISD can therefore be classified on any number of alternative bases, yet what is important is how the ISD are selected, Rutherford (1998, p. 156) comments, “... the best indicators conceptually may not be available in practice, either because basic data are not selected or because the methodology to turn available data into indicators of the desired type is unavailable.... On the other hand... indicators that really do catch the attention of policy and decision makers will be chosen not by those who advocate logical frameworks, but rather by the decision makers themselves because they are perceived to be useful for monitoring something that is important”. The essence then, of indicator selection, is to make open and explicit the criteria used for indicator selection and decision taking. The review below seeks to make common criteria more explicit.

## 2. Indicators selection criteria

### 2.1. *Qualitative or quantitative indicators*

The principal criterion for selecting indicators is that the indicators measure the phenomena intended to be measured. However, some phenomena are inherently difficult to measure in a manner satisfactory to the end users. Angrist et al. (1976; quoted in Carley, 1981) observe, “If we have physical and psychological inputs into our lives, then it is axiomatic to measure both in order to determine a quality of life”. Thus, there is agreement that the phenomena needs to be measured, but the contention arises in the manner in which this, or any phenomena, should be measured. Traditionally, quantitative data have been used because these were seen as more rigorous and credible. The US Department of Health, Education and Welfare in its 1969 document “Towards a Social Report” gave the first definition of a social indicator and defined it to be a “statistic of direct normative interest which facilitates concise, comprehensive and balanced judgement about the condition of the majority of a society” (quoted in Carley, 1981). Yet despite the need for indicators selected to be normative, the report recognised the subjective element in determining whether an increase in the number of policemen on the street was a good thing or not. In addition to this subjectivity, Gallopin (1997) recognises the subjectivity in determining which phenomena to measure, determining the target value of that attribute and the weighting of simple indicators in any composite scale. For Dahl (1997) the subjectivity involved with weighting indicators is sufficient that any such approach can be rendered “suspect”. However, Schneider and Donaghy (1975, p. 308) counter, “the

use of objective measures alone as quality of life indicators is ... highly suspect”.

Gallopin (1997) suggests that the reason the majority of ISD selected are objective, quantitative and normative is due to the subject matter, which more naturally lends itself to quantitative measurement. However, he acknowledges that this approach will only perpetuate the over representation of economic data which in turn lends itself more naturally to quantitative measures. Carley (1981) also warns of being seduced and enamoured by the unlikely triumvirate of numbers, statistical procedures and models. Yet, as a selection criteria, UNEP reports how the International Chamber of Commerce (ICC) refer to the need for “appropriate information” while the World Wide Fund for Nature (WWF) require “effective data” (UNEP, 1995) implying that whichever indicators can best perform the task, will be selected. However, the WTO (1995, p. 7) perhaps reveals the true position of many organisations towards qualitative measures, stating, “... indicators of sustainability are not always quantifiable and may necessarily be somewhat subjective. This *limitation*, however, does not in any way detract from their utility as management information in promoting sustainable tourism” (this author’s emphasis added). That the qualitative nature of the indicator does not diminish from its ability to provide information and yet is still seen as a limitation is indicative of the bias against qualitative data. Thus, being quantitative is itself a selection criterion unless choosing a quantitative measure refutes more of the following selection criteria than would using qualitative indicators.

### 2.2. *Policy relevant*

Perhaps the next most important criterion for the selection of ISD is that they are policy relevant. However, this is contentious because of the different beliefs in what sustainable development (SD), and in turn sustainable tourism (ST), is, how it should be achieved, and the extent to which it relates to social goals. While it does seem paradoxical for an instrument to rely on policy relevance when the aim of that instrument is to make policy relevant, Moldan and Bilharz (1997, p. 5) argue, “the very process of developing indicators contributes to the creation of a better definition of SD”. Thus by way of measuring relativity and proximity ISD function as measures of discrepancy between the current and desired positions. What is necessary is that we have a clear understanding of that which is desired.

### 2.3. *Generate public support*

Such a criterion may seem unlikely in developing ISD. Yet, Chapter 8 of Local Agenda 21 (United Nations Conference on Economic Development (Rio Earth Summit) Agenda 21, 1992) states the need to integrate the

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