



# Socio-economic and environmental cost–benefit analysis for tourism products – A prototype tool to make holidays more sustainable<sup>☆</sup>



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## ABSTRACT

A credible socio-economic and environmental cost–benefit tool for tourism products has been lacking, despite many significant potential values, the huge impact of tourism products worldwide, and the increasingly successful application of such tools in other sectors. This paper describes development and trial of a prototype tool for holiday products that could determine the circumstances in which overall benefits of tourism outweigh burdens. Use of the prototype tool indicates that many current flight-based holiday products may have a net negative impact, but significant positive difference could be achieved through choosing shorter-haul or flight-free holidays, hotels with less leakage from the local economy and less non-recycled waste, and fewer but longer holidays with increasing daily discretionary spend. Further development could produce a robust cost–benefit tool for tourism products that could help the industry with ‘choice editing’ and identifying sustainability issues requiring closer attention.

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## 1. Introduction

Tourism, the world’s largest service sector industry directly employing 98 million people globally and indirectly supporting a further 157 million jobs (WTTC, 2012), can bring not only great environmental, social and economic benefits but also great costs.

For example, in 2010 in the Caribbean the economic impact from travel and tourism equalled 14% of GDP, 13% of employment, 12% of investment and 17% of exports (WTTC, 2011). However most overseas tourist visits in the region are by cruise ships, with the cruise industry arguably having a poor record on worker rights and significant environmental impacts, often leaving waste and pollution behind and sometimes culturally overwhelming smaller destinations. Moreover over 20% of tourist arrivals to the Caribbean are from Europe, requiring long-haul flights that may result per passenger in more than a sustainable annual individual allocation of greenhouse gas emissions.

So which are greater, the costs or the benefits, in general or in any given holiday product? Is the industry in a position to say – taking all impacts into account wherever they occur – which holiday has the greatest net positive or negative impact: three weeks in a three-star half-board

hotel in the Caribbean, two weeks in an all-inclusive five-star hotel in Spain, or a week self-catering in Cyprus?

Such questions get right to the heart of the on-going debate about ‘sustainable tourism’. Indeed, being able to answer questions about the relative sustainability of its products is a critically important part of the tourism industry taking ‘sustainable tourism’ seriously.

Various attempts have been made previously to measure whether benefits outweigh damage in tourism, but none have resulted in a practical tool that the tourism industry, or anyone else, can use. For instance, an attempt was made in 2002 when WWF, working with Best Foot Forward, devised a tool to assess the footprint of holidays, and trialled its use with two sample Thomson holidays (WWF, 2002). However their approach critically omitted social costs and benefits and was not taken up. Also, while certification schemes have begun to assess the sustainability of holiday accommodation, the components generally excluded from such schemes, e.g. flight-related emissions, holiday duration, indirect water use, and leakage of benefits, may well be more important than the components included.

The debate has nonetheless continued with recent contributions from, amongst others, the New Economics Foundation (NEF, 2008), the Overseas Development Institute (ODI, 2010), and a joint position paper from civil society organisations at the Durban Climate Change Conference COP17 (Tourism Concern et al., 2011). In this debate, local economic benefits are sometimes suggested as more than sufficient recompense for environmental and social costs. Moreover it is suggested that many people in destinations now depend on tourism for their economic well-being; in other words, the benefits brought by

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tourism may more than balance out the damage. But can this argument be substantiated? Is there even a practical way to make that value-judgement?

A consumer-oriented environmental ranking or assessment system is common in product groups from fridges to houses, but has yet to be devised for holidays. Indeed, tourism products are arguably well behind in such developments. This paper presents the early development of an assessment system for holiday products intended to be simple enough to be usable yet comprehensive enough to be credible. The system is designed for flight-based holidays, but could be used and adapted for any kind of holiday. The intention at this stage is not to produce an assessment tool for public use, but to assess the feasibility of using such a tool to inform and guide the industry.

The approach taken has been first, through a review and initial consultation process, to select the biggest impacts – positive and negative – of an overseas holiday, then to develop a methodology to assess and weight the scale of these impacts, based on real-world data or reasonable estimates, and finally to trial the tool and make a preliminary analysis of the outputs. In the future, additional impacts may be added to the basic, workable assessment tool, and methodology refined. It is possible that tour operators might find that none of their products have a net positive gain, however the tool also provides a means to set targets for improvement, to ‘choice edit’, and to highlight issues requiring attention, all of which would be positive responses that tour operators could adopt if that were to be the case.

The methodology presented is a prototype, and based on somewhat limited available credible data. Some theoretical and methodological issues inevitably need to be ironed out. This paper is presented as a first iteration of what might be achieved, a call for methodological improvement and better data, and suggests a conclusion that might be drawn should adequate data be unavailable. The results are nonetheless sufficient to assess the overall validity of the approach, and to stimulate discussion and suggestions for improvement of the method and input data-sources.

### 1.1. Objectives

This work aims to develop a ‘ready-reckoner’ rating system of holidays for use by tour operators. The tool allows comparison of individual holiday packages, assuming that a choice is being made between various options. The tool is designed to determine which alternative holidays might have the greater net positive or negative economic, environmental and social impact. As such it is of primary value to tour operators in determining which products to sell. It might in due course be usable by holidaymakers, but would need to be further elaborated for that purpose. Organisations dedicated to promoting sustainable tourism might also have an interest in the tool. Although they might have insufficient information to use the tool by themselves, partnerships between TOs and NGOs might prove successful.

While the work has this ambitious premise, its path is relatively simple: prioritise the greatest impacts, use the best feasible methodology, state all caveats, assumptions and imperfections, and improve as better data and methods are developed. Complete accuracy and agreement in such complex issues are neither expected nor intended; instead, the challenge is to arrive at a system that is sufficiently comprehensive and feasible to be credible, but sufficiently simple to be practicable.

This paper therefore presents:

- a summary of the potential values of a cost–benefit analysis of outbound holiday products,
- a selection of priority impact categories,
- possible cost–benefit methodologies for each, with means for combining or summing impacts.
- results of preliminary trials, and
- observations, analysis and recommendations.

### 1.2. Potential values

The immediate intention of this work is to lead to a comparator between different holiday products, for use by tour operators and those selling holiday packages. Ultimately it might inform consumer-oriented scoring or certification systems.

Further potential values of a cost–benefit tool for holiday products include the following.

- Highlighting and guiding critical thinking on the impact categories that require the greatest attention in moves to improve sustainability, and where choices might be edited. ‘Choice editing’ is a business sustainability tool where less sustainable products or services are removed and (usually) replaced with more sustainable items. Businesses may phase out less sustainable items from sale voluntarily, or in response to government initiatives.
- Assessing an overall sustainability index for a tour operator. This could be achieved by assessing the average score of all the holiday products they offer or, better still, an average score for all the holidays they actually sell. This would then facilitate the setting of sustainability index targets for future years’ product offerings or sales.
- Input to definition of a ‘sustainable holiday’, and by extension a ‘sustainable tour operator’.

### 1.3. Outputs

Two different methodologies have been developed, one which produces an index ‘score’ for each holiday, the other which provides a \$-value cost or benefit. In both cases, the tool allows analysis of how altering a single factor, or combination of factors, influences the overall score or cost or benefit.

## 2. Methodology

### 2.1. Cost benefit analysis

Cost benefit analysis (CBA) is a systematic process that may be used to calculate and compare costs and benefits of a policy, project, or decision, generally from the perspective of society as a whole. For this paper CBA is being used to calculate and compare the environmental and socio-economic costs and benefits of a decision to take a holiday. CBA involves comparing the total expected cost of each option against the total expected benefits, to see whether the benefits outweigh the costs, and by how much. When used to compare options a separate calculation is made for each and the relative net costs or benefits compared.

We all make cost–benefit calculations for every decision we make, although for small decisions the process is largely intuitive. As a defined concept the technique apparently dates back to the mid-19th Century (Dupuit, 1848), and was formalised in subsequent works by Marshall (e.g. Marshall, 1881). It is now commonplace in government and the commercial sector.

Challenges exist with ‘conventional’ cost–benefit analysis, for instance it usually aggregates the ‘utilities’ (as measured by willingness to pay) of individuals. Although there will be winners and losers as a result of most policies, projects or decisions, if winners gain more than losers lose, a net benefit is calculated. Yet if a millionaire gains eleven dollars while a starving person loses ten, can this be considered a desirable outcome or a net benefit? Various techniques, some outlined in Section 2.5, have been developed to deal with some of these challenges, with varying degrees of success. The dual methodology used in this paper, as described in Section 2 and detailed through Section 3, endeavours to deal with these challenges in an equitable way. There is a general lack of literature in the tourism sector on cost–benefit analysis that goes beyond the purely economic, and the methodology proposed in this paper is perforce novel and innovative.

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