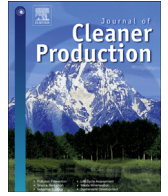




Contents lists available at ScienceDirect

## Journal of Cleaner Production

journal homepage: [www.elsevier.com/locate/jclepro](http://www.elsevier.com/locate/jclepro)

## Challenges and prospects of valuation – cruise ship pollution case

Hrvoje Carić

Institute for Tourism, Croatia

## ARTICLE INFO

## Article history:

Received 30 December 2013

Received in revised form

12 January 2015

Accepted 13 January 2015

Available online xxx

## Keywords:

Pollution

Cruise tourism

Valuation of environmental effects

Environmental and ecological economics

Natural resource economics

## ABSTRACT

Negative externalities and natural resource valuations play an important role in the debate and analysis of sustainable development. However, as yet, they have not been included extensively in tourism research or planning. As a result limited progress has been made to improve environmental management and address resource management challenges. This paper seeks to stimulate the discussion over the advantages, disadvantages, failures and successes of selected economic and development discourses. Valuation methodologies are discussed and placed within a pollution valuation impact model to identify opportunities to assess the impact of pollution and the value of natural capital in the tourism context. Cruise tourism is used to demonstrate the model due to its rapid growth and the potential for intense pollution outputs. It is considered in the context of a developing and transition state, one which sees tourism as a panacea to the problem of accessing international currency. By employing cross disciplinary research and applying valuation logic the paper aims to contribute to the decision making process in tourism.

© 2015 Elsevier Ltd. All rights reserved.

## 1. Introduction

Many local communities struggle to deliver sustainable tourism due to poor access to information, limited knowledge, lack of capacity for good governance, and the absence of the rule of law (Mowforth and Munt, 2003). Tourism is often viewed as a financial panacea for many pragmatic developers (Duffy, 2002) with cruise tourism one of the more favorable development paradigms for transition and developing countries. The last decade has witnessed a new and rapidly growing trend of mega cruise ship tourism that embodies the elements of: a global presence and rapid growth, high pollution intensity, new scales and dimensions of mass tourism, and human exploitation (Chin, 2008; Diedrich, 2010; Sheppard, 2010; Gaouette, 2010; Cohen, 2008; Shah, 2010; Copeland, 2010; Carić, 2010, 2011a, 2011b, 2012; Klein, 2003, 2005, 2008, 2011, 2013). Environmental and ecological economics are the discourses that have tried to influence economic and business practices but as yet have very rarely touched upon tourism. In order to provide an understanding of the evolution of environmental and ecological economics, this paper provides perspectives in valuing environmental impacts through a Pollution Impact Valuation Model (PIVM). In conclusion the need for

redefining sustainability, through an interdisciplinary effort, is discussed.

## 2. Background

In 1776 Adam Smith wrote in *An Inquiry into the Nature and Causes of the Wealth of Nations* where he stated that “the things which have the greatest value in use have frequently little or no value in exchange; on the contrary, those which have the greatest value in exchange have frequently little or no value in use” (in his text he referred to water and diamonds, respectively). This statement, revisited today, could be used as reminder that the allocation of values is crucial not only to economic theory but to other sciences and practices. Nature as a resource (i.e. natural capital) has been brought to the interest of policy making, economics, social and natural sciences with the global increase in population and pressures on the environment. Today, the issues of sustainable resource use and management, especially pollution prevention, are subjects of great concern with regulators, local authorities and international organizations, including the IUCN (*International Union for Conservation of Nature*), UNEP (*the United Nations Environment Programme*), the World Economic Forum, and the Club of Rome (*The Limits to Growth*), to name a few.

In the first half of the 20th century Adam Smith's logic was reviewed by economic theorists such as Gray and Hotteling (Solow, 1974). They warned that the exploitation of un-renewable

E-mail address: [hrvoje.caric@iztg.hr](mailto:hrvoje.caric@iztg.hr).<http://dx.doi.org/10.1016/j.jclepro.2015.01.033>

0959-6526/© 2015 Elsevier Ltd. All rights reserved.

resources must take into consideration that the optimal price of a product should include opportune costs caused by exhaustion, limited availability, or degradation (Solow, 1974). Almost simultaneously, Hardin (1968) describes this phenomenon in his seminal paper “the tragedy of commons”. Subsequently, economists started to discuss negative externalities more intensely and politicians started to consider pollution issues more seriously. The Bruntland commission (WCED, 1987) coined the phrase ‘sustainable development’ as an overarching framework for the consideration of exploitation, pollution and balanced use. However, this vision needed more concrete application and hence economists started placing values on pollution and resources.

### 3. The valuation discourse

Pollution assessment and resource valuation are fundamental for the development of environmental economics, ecological economics, and industrial ecology. Environmental economics emerged from the debates of the leading scholars of neo-classical doctrine of economics during the 1960s and 1970s. They focus on property rights, externalities and policy solutions, which has brought a better understanding of the issues involved in valuing nature. The theoretical shortcomings of environmental economics led to the development of Ecological Economics and Industrial Ecology in the 1980s.

#### 3.1. Environmental economics

Environmental damage caused as a byproduct of the production process or a consumer activity for which the polluter does not pay, and the cost is not included in the price, poses the problem of a negative environmental externality. This is the principal focus of environmental economics. Environmental economics put the issue of the internalization of negative externalities into the spotlight, generating the polluter-pays principle. This later became the framework for many environmental legislative mechanisms, such as tradable permits, or CO<sub>2</sub> emissions quotas. This discourse enabled insights into resource and environmental management, providing the foundation for other concepts in economics, as well as political concepts such as sustainable development (Ruth, 2006). The importance of environmental economics lies in clearly defined and reliable methods, such as green accounting, cost-benefit analysis and similar methodologies. In the 1980s it became clear that focusing on economic methodologies alone would not offset the ever more serious and extensive negative manifestations in the environment (Ruth, 2006; Venkatachalam, 2006). Conversely, as early as 1898, Alfred Marshal formulated a challenge to economics, he put forth the idea that economics should be governed by biological rather than mechanical principles (Marshall, 1898; Penrose, 1952; Brinley, 1991). Since environmental economics has only partly incorporated Marshal's principle, ecological economics emerged in an attempt to consider it more deeply.

#### 3.2. Ecological economics

Developed in response to the exclusion of the biological–physical reality from the economic analyses of resource exploitation (Costanza, 1996). It is based on the fact that products and services provided by nature are not present in the market, and as a consequence unvalued, resulting in degradation and unsustainability (Costanza et al., 1997). The introduction of ecological dynamics into economic processes proved to be challenging. The primary assessment methodology of ecological functions and services is contingent valuation. It focusses on surveying individual values by means of quantifying respondents willingness to pay

(WTP) for the preservation or exploitation of a given resource. The basic theoretical and methodological problems of this and other approaches in ecological economics:

- difficulty in applying analyses or debates in which development ideas are set against nature protection (Turner et al., 1997),
- qualitative methods can be subject to the prejudices of a researcher (Venkatachalam, 2006),
- the marginal value approach, used in mainstream economics for the value of additional product or service units, makes little sense when dealing with unit value of endangered species or habitat (biotope) areas (Ruth, 2006),
- willingness to pay declared in the research does not necessarily equal willingness to pay in practice (Horowitz and McConnell, 2002).

More recently the Ecosystem Services (ES) concept, popularized by the Millennium Ecosystem Assessment (MA, 2005) and The Economics of Ecosystems and Biodiversity initiative (TEEB) have produced valuations using various methodologies. This has contributed to resolving some typical “common pool resource problems” through “green balancing”, i.e. the financial valuation of an ecosystem that is being commercially utilized in fishery and forestry.

#### 3.3. Industrial ecology and environmental management approaches

Appeared in the late 1980s as an interdisciplinary approach focusing on the reduction of environmental impact in production processes by implementing advanced management techniques and new technologies. Many similar or related initiatives simultaneously appeared or followed:

- Cleaner Production that influenced later EU IPPC (Integrated Pollution Prevention and Control) directive,
- Pollution Prevention and Life Cycle Assessments that is strongly promoted by US EPA,
- Eco-efficiency by World Business Council for Sustainable Development,
- Management standards such as EMAS (ECO – Management and Audit Scheme) and ISO 14001.

These approaches attempt to apply Marshal's (1898) biological principles: energy, material, finance flow analysis, and product life cycle assessment. They were designed as indicator based valuations serving concrete mitigation goals to cut pollution. Since many of the approaches were promoted as voluntary, their application has been limited to a few proactive companies or industrial sectors. However, these methodologies have also proved to be effective in the development of individual tourism management of units, such as hotels who have reported successes in cutting environmental impacts and operating costs. Currently the methodology is evolving to encompass tourism destinations. At a broader scale the European Commission has initiated a policy initiative aimed at standardizing sustainability indicators for more proactive and forward thinking destinations (see ETIS – European Tourism Indicator System, EC DG Enterprise and Industry, Tourism Unit).

#### 3.4. The failure of neo-classical economics

Insisting on the Neo-Classical Economics as the main stream and global development paradigm is usually justified by the lack of alternatives. When it was challenged in the 1990s, proponents claimed that this approach had all the methods necessary to respond to the challenges in environmental and resource

Download English Version:

<https://daneshyari.com/en/article/10688129>

Download Persian Version:

<https://daneshyari.com/article/10688129>

[Daneshyari.com](https://daneshyari.com)