

# Communicating sustainable development options – who evaluates the trade-offs?

Sabine O'Hara, Vivek Shandas and Jose Vazquez

Department of Economics, Rensselaer Polytechnic Institute, Troy, New York 12180, USA

## 1 Introduction

The search for models of sustainable development has not been easy. Some concepts and definitions have taken their cue from the Brundtland report's temporal understanding of sustainability as maintaining the welfare of present generations without endangering the welfare of future generations (WCED 1987); others see sustainability as a spatial concept which implies that sustainable communities or regions stay within their ecological carrying capacity (Wallner et al. 1996); yet others view sustainability as a concept of development that promotes a balance between three interrelated systems – the economy, social systems and ecological systems (Robinson and Tinker 1995, O'Hara 1998).

Given these conceptual ambiguities among theoreticians (Eichler 1996) it is not surprising that there are many questions about what sustainable development might mean for practitioners, or how the concept can best be communicated to those at the forefront of implementing more sustainable development practices. An essential factor in overcoming the ambiguities surrounding sustainable development is improved clarity and communication about what sustainability means to different disciplines and particularly to the core disciplines involved in the sustainability debate – economics and ecology (Norton and Toman 1997, O'Hara 1996). Moreover, improved clarity and communication are also at the center of advancing practitioners' ability to develop and evaluate sustainable development options.

The following article explores the role new information technologies can play in providing local communities and decision makers with the information necessary to evaluate the sustainability of alternative development options. The concept of sustainability underlying this exploration draws on both the notion of maintaining ecological capacity constraints and of recognising the interrelatedness of economic, social and ecological systems. Robinson and Tinker (1995: 19) write:

“Addressing any one of the three imperatives in isolation, without also satisfying the other two, virtually guarantees failure, first because each is independently crucial, second because the satisfaction of each is urgently necessary to remove elements of gross unsustainability from human society, and third because the three imperatives ... are intimately connected”.

Given the complex information necessary to evaluate the economic, social and ecological systems' interactions relevant to assessing sustainable development issues, much of the needed information cannot be readily captured by using one discipline's notion of sustainability or by one commensurate measure of sustainability. Instead, multiple measures may be necessary to assess the environmental, economic, and social effects of various development options and to evaluate their respective trade-offs. In fact, the selection of measures itself raises the question where information ends and evaluation starts, and what criteria selection and evaluation processes might be considered to assess viable development options (O'Hara forthcoming a).

To place this discussion of concepts and implementation of sustainable development into a concrete context, the following discussion is based on a regional example of sustainable development options in the Lake George region of upstate New York. This rural area in the Northeast of the United States has experienced both the economic benefits and the ecological dangers of tourism development. The article starts with a brief historical overview of the Lake George region's development challenges followed by a discussion of the information needs for sustainable development and the implicit and explicit valuation processes that affect selection and assessment of alternative development options.

## **2 Sustainable development – past gains and future limits**

Communicating the need for balanced development that protects a region's ecosystems health as well as its economic and social well-being is often a challenging task. This is true even in regions where residents are well aware of the fact that economic well-being depends on the integrity of the region's environment. One of the problems lies in the different time frames according to which different systems operate. Economic effects tend to be visible in the short run while the effects of pollution on a region's environmental assets may not be visible until twenty-five or thirty years later. Another difficulty lies in linking economic and social systems functions to the quality of a region's environmental assets. Pollutants travel, are absorbed, altered and diluted so that it is often difficult to link pollution impacts to the anthropogenic sources that cause them. A third set of challenges lies in the fact that economic, social and ecological systems follow different spatial boundaries. To analyze a lake's water quality impacts, its watershed or basin may be the relevant spatial dimension. To analyze a region's economic and social factors, political boundaries like counties or towns are the most common dimensions. These political boundaries are generally not consistent with ecologically relevant space.

The lake George region is no exception. Located in upstate New York on the eastern edge of the Adirondack Park, Lake George's natural beauty and