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Ecological Understanding: A Prerequisite of Sustainable Ecotourism

Zahedi Sh.[1]

Abstract

Sustainable ecotourism is a nature oriented tourism that maintains a sound relationship with the natural environment, and contributes to its conservation. Ecological understanding is a prerequisite of sustainable ecotourism. Nature conservation and ecotourism are interdependent. There should be a symbiotic relationship between the two, in which, both derive sustainable benefits in a lengthy period of time. In order to decrease natural deterioration, the present ecotourism economic and financial assessment should be challenged. Sustainable ecotourism demands new managerial methods that can estimate both environmental inputs and outputs in every single ecotourism venture and meets the required criteria of both. Triple-bottom-line accounting approach provides a foundation for assessment of environmental, social, and financial costs and benefits of ecotourism ventures. Ecotourism companies can allocate some of their resources to the nature conservation and people education. This is how they can obtain a positive triple bottom line. Developing environmental management strategies, programs and procedures with measurable objectives, and allocating adequate funds for their effective implementation is recommended in this article. Effective financial management system with capable accounting mechanisms would provide the ecotourism organizations with the necessary foundations for transition towards sustainability.

Keywords: Sustainability, Development, Ecology, Nature Oriented Tourism, Tourism Typology, Diversity & Extinction of Species.

1. Professor of Management, Allameh Tabatabaee University, Tehran, Iran

Introduction

Ecotourism constitutes a viable economic activity within tourism section in many developing countries. While it can stimulate the economy and generate crucially needed foreign exchange earnings, it might be harmful to the natural environment of the host countries. The purpose of this article is to discuss the relationship between ecotourism and ecology, and to address issues that are relevant to ecotourism financial management and accounting mechanism. Following an overall review of the tourism typology, an emphasis is placed upon sustainable development and ecotourism management.

Sustainable tourism

Tourism may be defined as the sum of phenomena and relationships arising from the interaction of tourists, host governments, origin governments and host communities in the process of attracting and hosting these tourists and other visitors (McIntosh et al, 1995, p.10). There appears to be a direct relationship between the emergence of paradigm of sustainable development and sustainable tourism. Sustainable development advocates that people at present time meet their present needs without compromising the ability of future generations to meet their own needs in the future (World Commission on Environment and Development, 1987). Thus sustainable tourism is tourism which is developed and maintained in an area in such a manner and at such a scale that it remains viable over an indefinite period and does not degrade or alter the environment in which it exists to such a degree that it prohibits the successful development and well being of other activities and processes (Butler, 1993, p.29).

Tourism and Typology

There are different categorizations for tourism from different perspectives. In this article tourism is divided into two main categories: Ordinary tourism, and Nature-oriented tourism.

Ordinary tourism is large-scale, highly commercialized tourism which is mostly based on packaged tours, concentrated in dominant markets throughout the world. Nature oriented tourism is forms of tourism that maintains a relationship with the natural environment for their attractions. Nature oriented tourism may be divided into six sub-categories: 3S tourism, adventure tourism, consumptive tourism, captive tourism, health tourism, and ecotourism.

3S tourism: This type of tourism is related to sun, sea, and sand (3S) and is associated with the emergence of a leisure-dominated pleasure periphery occupying a significant portion of the Mediterranean and Caribbean basins, along with the parts of the South-Pacific, South-Eastern Asia and the Indian Ocean basin (Lawton & Weaver, 2000, p.36). 3S tourism has become symbolic of the negative economic, environmental and sociocultural impacts. Although it is more in harmony with unsustainable paradigm, it is very popular and demanded throughout the world (Lawton & weaver, 2000).

Adventure tourism: This from of tourism contains elements of risk, skill, physical exertion and is associated with natural environment which provides challenge and excitement. Related activities include white-water rafting, skydiving, wilderness hiking, sea kayaking, mountain climbing, caving and orienteering (Sung et al, 1996, p.47).

Captive tourism: In this form of tourism some elements of the natural environment are presented under controlled conditions, such as zoological gardens, acquariums, aviaries and botanical gardens. There has been an argument accompanied by accusations that captive tourism is unethical, and this is why in most countries there is a growing tendency to change zoos and the like to national parks with almost similar conditions to the natural settings.

Health tourism: This kind of tourism is related to therapeutic and hygiene activities and is mostly demanded by tourists who seek nature-based methods of therapy. Related activities include medicinal plants,

therapeutic water and mud.

Consumptive tourism: There is an element of consumption in all forms of tourism, but consumptive tourism refers to the activities which emphasize to attempt to seek out, kill, and remove an organism from its environment, such as hunting and fishing. This form of tourism is often environmentally unsustainable and it has been declining in recent years (Cordell, et al, 1995, p. 35).

Ecotourism: The word "ecotourism" is derived from two other words: ecology and tourism, and ecotourism is supposedly a sustainable form of natural resource-based tourism that focuses primarily on experiencing and learning about nature, and which is ethically managed to be low-impact, non-consumptive, and locally oriented (control, benefits, and scale). It typically occurs in natural areas, and should contribute to the conservation of such areas (Fennell, 2000, p. 43).

This article focuses on ecotourism and the problems related to it from a financial management perspective.

Ecotourism and Sustainability

Responsible ecotourism can offer an alternative form of tourism which is based on the principles of sustainable development and can be viable over time. But although ecotourism is a relatively young industry, there are already well documented cases of negative impacts or mismanagements (Boo, 1991; Lindenberg, 1991). The main cause of the problem is that the principles of financial management and accounting are not incorporated into the practice of ecotourism. Prior to elaborating more on this subject, a brief description of ecology is required.

Ecology

The word ecology is taken from the Greek "Oikos" meaning "house", and thus refers to our environment (Ricklefs, 2001, p. 2). In 1870, the German zoologist Ernst Hackel, described ecology as the body of knowledge concerning the economy of nature-the investigation of the total relations of the animal both to its organic and to its inorganic environment: including above all, its friendly and inimical relation with those animals and plants which it comes directly or indirectly into contact. Thus, ecology is the science by which we study how organisms (animals, plants, and microbes) interact in and with the natural world (Ricklefs, 2001).

Ecological hierarchy: Ecological hierarchy consists of different ecological systems with progressively more complex entities:

- An organism (the fundamental unit of ecology)
- A population (consisting of organisms)
- A community (different populations living together)
- Ecosystems (assemblages of different organisms with their physical and chemical environment)
- Biosphere (all the organisms and environments of the earth).

In the ecological hierarchy every single entity plays a particular role in the functioning of the whole and is related to other entities by exchanging energy and materials. Plants and algae fix the energy of sunlight, animals and protozoa consume biological forms of energy, fungi are able to penetrate soil and dead plant material and so play an important role in breaking down biological materials and regenerating nutrients in the ecosystem (Ricklefs, 2001). Bacteria are biochemical specialists, able to accomplish such transformations as the biological assimilation of nitrogen and the use of hydrogen sulfide as an energy source, both of which are essential components of ecosystem function (Ricklofs, 2001, p. 21). These exchanges contribute to the environment, and cycling of elements in the environment, from the smallest dimension (organism) to

the largest (biosphere). Ecological understanding is a prerequisite of sustainable ecotourism. In order to create new managerial techniques to support our immediate surroundings and oikos – our vulnerable environment – we should have ecological knowledge and insight. Understanding ecological principles and rational application of those would prevent environmental harming and protect our limited resources for the present and future generations.

Ecological principles: Ecological principles are as follows:

Ecological systems are physical entities; life builds upon the physical properties and chemical reactions of matter (Ricklefs, 2001, p.14).

Ecological systems exist in a heomostasis situation. Heomostasis implies the exchange of energy or material with the surroundings and yet maintaining a dynamic steady state (Zahedi, 2000, p.14).

The maintenance of living systems requires expenditure of energy.

Ecological systems undergo evolutionary change overtime (Ricklefs, 2001, p.15).

Diversity and Extinction: Biological diversity is fundamental to ecological sustainability, and the survival of human being depends upon maintaining the existing biodiversity. Biodiversity is often considered at three levels: genetic, species and ecosystems. Genetic diversity is the viability of generic materials within the species. Species diversity refers to the number and range of different species. Ecosystem diversity relates to the variety of habitats, biotic communities and ecological process (Jafari, 2000, p.54).

Diversity has a vital role in stabilizing ecosystem function. The diversity decreases when species become extinct. Extinction is a natural phenomenon and is a normal characteristic of natural systems. It represents the disappearance of evolutionary lineages that can never be recovered (Ricklefs, 2001, p. 486). There are three types of extinction: 1) Background extinction, 2) Mass extinction, 3) Anthropogenic extinction (Ricklefs, 2001, p. 487). As ecosystems change, some species disappear and others take their place. This turnover at a relatively low rate is because of background extinction. Mass extinction refers to the dying off of large numbers of species because of natural catastrophes such as volcanoes, hurricanes, and meteor impacts happen occasionally, and species that are in their way disappear. Anthropogenic extinction is caused by the humans and is similar to mass extinction in the number of taxa affected and its global dimensions and catastrophic nature. But this one can be under control. So far humans usurp more than 40% of biological productivity of biosphere and have caused extinctions by irrational use of energy and resources. They have reproduced too much of wastes, far excess of needs dictated by biological dimensions. This has caused few problems: 1) Disruption of the ecological processes; 2) Extinction of some of the species; 3) Decreasing biodiversity; 4) Increasing environmental stresses and deteriorating environmental well-being; 5) Threatening human life on the earth.

These problems are crying for urgent remedial strategies. In the context of this article, nature conservation and sustainable ecotourism are of important priorities.

Nature conservation: Conservation is managing the resources of the environment – air, water, soil, mineral resources and living species including humans – so as to achieve the highest sustainable quality of life (Jafari, 2000, p.103). Nature conservation and ecotourism are interdependent. Responsible ecotourism must conserve natural areas and decrease risk to the natural environment. This leads to protecting natural areas and thus contributing to the growth of the ecotourism. Ecotourism can either stimulate measurements to protect natural environment or provide basis for

detrimental and harmful damages to it. There should be a symbiotic relationship between ecotourism and conservation of natural environment in which both derive sustainable benefits in a lengthy period of time. This requires an ecoethics, which recognizes the importance of nature preservation, and values the physical and biological natural environment. Moral principles are necessary to deal with those human behaviors that have environmental impact.

New Mechanisms

In order to decrease natural deterioration and environmental exploitation, the present ecotourism economic and financial assessment should be challenged immediately and seriously.

Sustainable ecotourism demands new managerial methods that can estimate both environmental inputs and outputs in every single ecotourism venture, and meets the required criteria of both. According to Buckley (2002), the environmental input is the geographical factor, which has led the tourist to a particular destination. The environmental output is the overall net global cost or benefit of the tour operation to the natural environment. This is an accounting question, which requires the identification, quantification and summation of all costs and benefits through all potential mechanisms (Buckley, 2002, p. 2).

Triple bottom line approach: The most promising approach in which environmental, social, and financial costs and benefits are assessed independently is triple bottom line accounting. In this approach, the company is not in credit unless all three bottom lines are positive. Buckley believes that this is a useful step, which recognizes that sustainability can only be achieved through major changes to human social structure and behaviour, and that social and environmental accounting may be one tool to promote such changes.

The social and environmental reports, if not more than financial reports, at least should attract the same attention, and must demonstrate detailed information regarding their impact.

Every ecotourism venture and activity, in addition to the financial information should have an environmental bottom line. In order to have a positive social or environmental bottom line in any meaningful accounting sense, Buckly believes that ecotourism ventures should identify and quantify all the direct and indirect environmental and social costs and benefits of its entire operations and calculate the difference between the benefits and the costs (Buckley, 2002, p.4).

A positive triple bottom line means a net improvement in conservation of the natural environment and net social benefits for local communities as well as a net profit for shareholders and/or a net gain for national or regional economies (Buckley, 2002).

Thus sustainable ecotourism requires a departure from the present financial management and accounting systems to a precise and accurate system that provides valid information about the triple bottom line for ecotourism ventures.

Ecotourism companies can allocate some of their resources to the nature and to the people, nature conservation and people education. They can do this through establishing funds for the conservation and spending generously on the cultural and social activities. This is how they can obtain a positive triple bottom line and develop a proper accounting system. Through this system they can demonstrate their contribution to the components of ecosystem.

Conclusion

As mentioned earlier, humans are damaging the natural environment in a speed far more than nature can tolerate. They impose on nature far excess of needs dictated by ecological and biological dimensions. According to chaos theory and the role of uncertainty and the butterfly effect, there can be no precise knowledge about the unexpected results of any action (Knill, 1991, p. 52). A harmful behavior in a particular

place and a particular time can have many unknown unexpected results in other places and other times. This implies, damaging the life of the next generations and negating the principles of sustainable development.

Human behavior often violates the principles of sustainability. Developing environmental management strategies, programs and procedures, with measurable objectives, and allocating adequate funds for their effective implementation, is strongly recommended. The author believes that environmental considerations should be incorporated into financial management, accounting system of every single organization in general and ecotourism organizations in particular.

Effective financial management system with capable accounting tools and mechanisms would provide the ecotourism organizations with the necessary foundations for transition toward sustainability.

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