We are IntechOpen, the world’s leading publisher of Open Access books
Built by scientists, for scientists

4,500
Open access books available

118,000
International authors and editors

130M
Downloads

154
Countries delivered to

TOP 1%
Our authors are among the most cited scientists

12.2%
Contributors from top 500 universities

WEB OF SCIENCE™
Selection of our books indexed in the Book Citation Index in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com
1. Introduction

Ecotourism is a sub-component of the field of sustainable tourism. Ecotourism’s perceived potential as an effective tool for sustainable development is the main reason why developing countries are now embracing it and including it in their economic development and conservation strategies. Ecotourism, as an alternative tourism, involves visiting natural areas in order to learn, to study, or to carry out activities environmentally friendly, that is, a tourism based on the nature experience, which enables the economic and social development of local communities. It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and their habitats, as well as cultural artifacts from the locality. A symbiotic and complex relationship between the environment and tourist activities is possible when this philosophy can be translated into appropriate policy, careful planning and tactful practicum. Carefully planned and operated ecotourism sites, especially if it is village-based and includes local participation, is able to provide direct benefits that might offset pressure from other less sustainable activities that make use of natural and cultural resources. Eco tourism, natural resources, cultural heritage, rural lifestyle and an integrated tourism is a type of local economic activities. Therefore, ecotourism in naturel and cultural areas was carried out with a number of elements in their natural landscape and cultural landscape (water, vista, topography, vegetation, clean air), as well as in the variety of recreational activities suitable for all kinds of environments. Therefore, ecotourism and its natural assets and raw materials to create, as well as directing people to travel is an attractive force.

Ecotourism helps in community development by providing the alternate source of livelihood to local community which is more sustainable. Its aim is to conserve resources, especially biological diversity, and maintain sustainable use of resources, which an bring ecological experience to travelers, conserve the ecological environment and gain economic benefit. However, achieving the aims in ecotourism depends on whether they are environmentally and ecologically sustainable and economically applicable. Ecotourism
helps in involving local community for the conservation of the ecology and biodiversity of the area that biodiversity in return provides the economic incentives to the local community. Eco-tourism contributes to conservation of biodiversity; sustains the well-being of local people; involves responsible action on the part of tourist and the tourism industry; promotes small and medium tourism enterprises; requires lowest possible consumption of natural resources; stresses local participation, ownership, and business opportunities, particularly for rural people; and above all includes the learning experiences.

In order for ecotourism to encourage patterns of sustainability, which can benefit local communities, protect the environment, and be economically viable, it must be comprehensive and account for the complexity of issues that have been mentioned in this paper.

This chapter has revealed that there is a need for sustainable development in tourism, and the connection between tourism and environment is much stronger than in other sectors. Ecotourism must account for social, economic and environmental implications, in order to succeed. The purpose of this study look at ways in which ecotourism and sustainable development can be evaluated; and suggest ways to improve current ecotourism practices. In parallel with this purpose, it was aimed at looking for an answer to questions of: What is Ecotourism? “What might be the effects of ecotourism?” What are the impacts and challenges of ecotourism? What are the possible benefits that ecotourism can bring? Within this scope, we focused on ecotourism’s definition, its objectives, the reasons of its emergence and development, its principles, its types, its environmental, social and economic impacts; ecotourism and sustainable development and on the examination of approaches to ecotourism in Turkey and Europe.

In this section, the subjects below will be discussed.

- Introduction
- What is ecotourism and its types?
- What is sustainable development?
- Ecotourism and environmental, social and economic impacts
- Ecotourism and sustainable development relationship
- Ecotourism – examples of implementation
- Conclusion

2. What is ecotourism and its types?

Ecotourism, a unique subset of the tourism industry, is focused on the enhancement or maintenance of natural systems through tourism. Ecotourism means different things to different people. To some, it is the general term that encompasses nature-based, adventure, soft adventure, and cultural tourism. The term ecotourism was coined in 1983 by “Hctor Ceballos Lascurain” a Mexican environmentalist, and was initially used to describe nature-based travel to relatively undisturbed areas with an emphasis on education. Ecotourism guarantees the sustainable use of environmental resources, while generating economic
opportunities for the local people (Farrell & Runyan 2001; Bhattacharya, Chowdhury and Sarkar, 2011).

Ecotourism itself is meant to be a sustainable form of natural resource-based tourism. Even though ecotourism lacks a concrete definition, there are many well-recognized definitions that have formed a clear picture of its core principles, which are shown in Table 1.

<table>
<thead>
<tr>
<th>Source (Year)</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceballos Lascurain (1987) (Joshi, 2011)</td>
<td>Ecotourism is defined as travelling to relatively undisturbed natural areas with specific objective of studying, admiring and enjoying scenery and its wild animals and plants as well as existing.</td>
</tr>
<tr>
<td>Conservation International (Ziffer, 1989)</td>
<td>A form of tourism inspired primarily by the natural history of an area, including its indigenous cultures. The ecotourist visits relatively undeveloped areas in the spirit of appreciation, participation and sensitivity. The ecotourist practices a non-consumptive use of wildlife and natural resources and contributes to the visited areas through labor or financial means aimed at directly benefiting the conservation of the site and the economic well-being of the local residents.</td>
</tr>
<tr>
<td>The National Ecotourism Strategy (1994) (QuickStart Guide to a Tourism Business, 2006)</td>
<td>Ecotourism is nature based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable. This definition recognises that ‘natural environment’ included cultural components and that ‘ecologically sustainable’ involves an appropriate return to the local community and long term conservation of the resource.</td>
</tr>
<tr>
<td>McCormick, 1994</td>
<td>Purposeful travel to natural areas to understand the culture and natural history of the environment, taking care not to alter the integrity of the ecosystem, while producing economic opportunities that make the conservation of natural resources beneficial to local people</td>
</tr>
<tr>
<td>World Conservation Union (Brandon, 1996)</td>
<td>Environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature that promotes conservation, has low negative visitor impact, and provides for beneficially active socio-economic involvement of local populations.</td>
</tr>
<tr>
<td>Honey, 1999</td>
<td>Travel to fragile, pristine, and usually protected areas that strive to be low impact and (usually) small scale. It helps educate the traveler; provides funds for conservation; directly benefits the economic development and political empowerment of local communities; and fosters respect for different cultures and for human rights.</td>
</tr>
</tbody>
</table>
Interest in ecotourism, now widespread among tourism planners and marketers, is rationalized by a number of popular assumptions regarding the sector’s potential economic, environmental, and socio-cultural benefits.

Ecotourism is a form of tourism that fosters learning experiences and appreciation of the natural environment, or some component thereof, within its associated cultural context.

Table 1. Definitions of ecotourism

| Weaver, 1999 | Interest in ecotourism, now widespread among tourism planners and marketers, is rationalized by a number of popular assumptions regarding the sector’s potential economic, environmental, and socio-cultural benefits |
| Weaver, 2001 | Ecotourism is a form of tourism that fosters learning experiences and appreciation of the natural environment, or some component thereof, within its associated cultural context |

The (International) Ecotourism Society in 1990: Responsible travel to natural areas that conserves the environment and improves the well-being of local people in 1996 by the World Conservation Union (IUCN) which describes ecotourism as: Environmentally responsible travel and visitation to natural areas, in order to enjoy and appreciate nature (and any accompanying cultural features, both past and present) that promote conservation, have a low visitor impact and provide for beneficially active socio-economic involvement of local peoples (Joshi, 2011).

Ecotourism tries to raise environmental consciousness by exploring ecology and ecosystems and by providing environmental type experiences. Taking part in ecology actively and getting first hand impressions of how ecosystems work influence peoples’ ways of thinking, which finally raises awareness of conservation and protection (Ecotourism – Sustainable Tourism in National Parks and Protected Areas, 2005).

According to Patterson (2002), characteristics of an ecotourism business are that it:

- Have a low impact upon a protected area’s natural resources and recreation techniques.
- Involve stakeholders (individuals, communities, ecotourists, tour operators and government institutions) in the planning, development, implementation and monitoring phases.
- Limits visitation to areas, either by limiting group size and/or by the number of groups taken to an area in a season.
- Supports the work of conservation groups preserving the natural area on which the experience is based.
- Orients customers on the region to be visited.
- Hires local people and buys supplies locally, where possible.
- Recognizes that nature is a central element to the tourist experience.
- Uses guides trained in interpretation of scientific or natural history.
- Ensures that wildlife is not harassed.
- Respects the privacy and culture of local people.

According to Chesworth (1995), Ecotourism has six characteristics. These are: a) ecotourism involves travel to relatively undisturbed natural areas and/or archeological sites, b) it focuses on learning and the quality of experience, c) it economically benefits the local communities, d) ecotourists seek to view rare species, spectacular landscapes and/or the unusual and exotic, e) ecotourists do not deplete resources but even sustain the environment.
or help undo damage to the environment, and f) ecotourists appreciate and respect local culture, traditions, etc.

It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and their habitats, as well as cultural artifacts from the locality. A symbiotic and complex relationship between the environment and tourist activities is possible when this philosophy can be translated into appropriate policy, careful planning and tactful practicum (Rahman, 2010).

While the details vary, most definitions of eco-tourism boil down to a special form of tourism that meets three criteria:

- it provides for environmental conservation;
- it includes meaningful community participation;
- it is profitable and can be self-sustained

As shown in Fig 1, there is just a thin line of differentiation between sustainable tourism and ecotourism, which also shows that there is as such no absolute boundary between sustainable and unsustainable tourism (Eriksson, 2003). According to Weaver (2001); Ecotourism exists within the broader classification of tourism types which, at an initial level, can be divided into ‘mass tourism’ and ‘alternative tourism’ (Figure 1). Mass tourism is seen as the more traditional form of tourism development where short-term, freemarket principles dominate and the maximization of income is paramount. The differences between mass tourism and ecotourism are shown in Table 2.

![Figure 1. Conceptual model of tourism (Eriksson, 2003)](image-url)

Ecotourism as a very specific form is part of the broad concept of nature-based tourism, or it can be said that ecotourism describes a nature-based operation in the field of tourism. “The most obvious characteristic of Ecotourism is that it is nature based” Figure 2 (Weaver (2001);
<table>
<thead>
<tr>
<th>Characteristics of mass tourism.</th>
<th>Characteristics of ecotourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large groups of visitors</td>
<td>Small groups of visitors</td>
</tr>
<tr>
<td>Urban</td>
<td>Rural</td>
</tr>
<tr>
<td>Touristic general marketing activities</td>
<td>Eco-marketing activities.</td>
</tr>
<tr>
<td>Average prices for purposes of market penetration</td>
<td>High price with purpose of filtering the market</td>
</tr>
<tr>
<td>Impact on natural environment</td>
<td>Little impact on the natural environment</td>
</tr>
<tr>
<td>Advanced control options</td>
<td>Limited possibilities of control</td>
</tr>
<tr>
<td>Management based on macroeconomic principles</td>
<td>Management based on local economic principles</td>
</tr>
<tr>
<td>Anonymous relationship between visitors and local community</td>
<td>Personalized relationships between visitors and local community</td>
</tr>
<tr>
<td>General development goals</td>
<td>Local development objectives</td>
</tr>
<tr>
<td>Behavior-oriented leisure activities/entertainment, opponents to education and training actions</td>
<td>Loyalty in the process of training and education for appropriate conduct for the natural environment</td>
</tr>
<tr>
<td>Intensive development of tourism facilities</td>
<td>Reduced development of tourism facilities</td>
</tr>
</tbody>
</table>

Table 2. Distinct characteristics between mass tourism and ecotourism (Dorobantu & Nistoreanu, 2012)

**Figure 2.** Relationship of ecotourism to other forms of tourism (Hill & Gale, 2009)
Adventure tourism is defined as: “an outdoor leisure activity that takes place in an unusual, exotic, remote or wilderness destination, involves some form of unconventional means of transportation, and tends to be associated with low or high levels of activity” (Fennel & Dowling, 2003). According to this definition of adventure tourism and to that of ecotourism as previously stated, it seems that there are many overlapping concepts.

Ecotourism is a component of sustainable tourism. In many ways, sustainable tourism exemplifies the relationship between ecotourism and sustainable development (Sâmbotn et al., 2011; Bansal & Kumar, 2011);

Sustainable tourism will focus on three areas:

- Quality – valuable experience for visitors and increased life quality for host communities through cultural identity, poverty reduction and environmental quality;
- Continuity – exploitation is made at the optimum level that allows the preservation and regeneration of the natural resources;
- Balance between the needs of tourism industry, environmental protection, and local communities by an equitable distribution of benefits among stakeholders

Standarts of ecotourism (Weaver & Lawton, 2007):

a. Protection of the Ecosystem
   • Maintenance of the ecosystem where the ecotourism attraction is located
   • Protection and maintenance of wildlife especially endangered species
   • Wildlife live harmoniously with people
b. Maintenance of the physico-chemical conditions of the area
   • Maintenance of the quality of fresh water and marine resources
   • No wastes overflow and contamination of the environment (water, soil and air)
c. Conservation of local culture and history
   • Culture of locality is maintained
   • Historical structures are maintained as part of cultural heritage
d. Infrastructures and signboards blend with the environment
e. Sustainability
   • Maintenance of Carrying Capacity of the environment;
   • Educational education program is part of the ecotourism package;
   • Livelihood must benefit more the local community than outside entrepreneurs;
   • The local government supports the ecotourism project through ordinances and resolutions; and
   • The Management Board (community-based) and appropriate government agencies, e.g. DENR, support the project through strict enforcement of environmental laws
   • Experience and product management should follow principles and practices associated with ecological, socio-cultural and economic sustainability.

Many dimensions clearly emerge from these widely stated definitions including (Matthews, 2002)
1. Ecotourism occurs in natural areas (most often protected areas) and/or places of unique ecological or cultural interest
2. Ecotourism contributes to conservation or preservation of the natural resources and promotes stewardship of natural and cultural resources.
3. Ecotourism should create necessary funds to promote permanent protection of ecological and socio-cultural resources.
4. The local residents accrue economic and social benefits thereby contributing to project’s long-term success.
5. Ecotourism incorporates environmental and cultural education.
6. Ecotourism should be effectively managed for the long-term through minimal negative impacts on the host environment.
7. Ecotourism should provide a quality tourism experience.

These principles and standards must be put in place by those who develop ecotourism products, as well as those who plan the development of an area-based ecotourism. In ecotourism branch a special place is given by the marketing concept. The importance of proper marketing is widely recognized throughout the tourism sector that today tourism market has become increasingly segmented over the methods of communication to reach consumers have multiplied and diversified (Boghean & Boghean, 2006).

3. What is sustainable development?

The concept of sustainability first appeared in the public scene in the report put out by the World Commission on Environment and Development (Brundtland Commission) in 1987. The commission report advances the idea of sustainable development by noting that economic growth and environmental conservation are not only compatible but they are necessary partners. One cannot exist without the other (Harris et al., 2002). Sustainable development is high potential for any community within economic, social, cultural, ecologic and physical constraints (Bhuiyan et al., 2012). Sustainable development has been defined in many ways, but the most frequently quoted definition is from Our Common Future, also known as the Brundtland Report:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts (IISD, 2012):

- The concept of needs, in particular the essential needs of the world’s poor, to which overriding priority should be given; and
- The idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs."

Van der Merwe & Van der Marwe (1999) add that Sustainable development is a program for changing the process of economic development so that it ensures a basic quality of life for all people and at the same time protects the ecosystems and community systems that make life possible and worthwhile.
This was the dominant dilemma addressed by the Brundtland Commission which indicated that sustainable development should, as a minimum, address the following elements (Wall, 2007);

- Maintenance of ecological integrity and diversity;
- Meet basic human needs;
- Keep options open for future generations;
- Reduce injustice; and
- Increase self-determination.

It was further suggested that in order for this to occur, it would be necessary to:

- Revive economic growth;
- Change the quality of growth;
- Meet essential needs such as for jobs, food, energy, water and sanitation;
- Conserve and enhance the resource base;
- Reorient technology and manage risk; and
- Merge environment and economics in decision making.

Defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It is often called intergenerational equality, the idea is that we should share natural resources not just with people who are alive on the planet today but also with future generations of the earth’s inhabitants. Sustainable development integrates economic, social with the aforementioned environmental goals. Sustainability highlights on the resource conservation (Dixon & Pretorius, 2001; Mebratu, 1998; Jaini, Anuar & Daim, 2012). Dixon & Pretorius (2001) cite the International Council for Local Environmental Initiatives (ICLEI), which emphasizes environmental, social and economic concerns as three distinct but interrelated components of sustainable development.

According to Hall (2008) sustainable development and tourism present change which refers to the movement from one state or condition to another. Whether such a transition is positive or negative depends on the original criteria by which change is measured. Sustainable tourism requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving it requires monitoring of impacts, introducing the necessary preventive and/or corrective measures whenever necessary. Sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them (World Tourism Organisation, 2001).

Sustainable development through ecotourism is a concerning issue in the world today. Many countries have ensured their regional development by this concept. In this concept, sustainable development may be occurred by the ecotourism and regional development (Figure 3) simultaneously in an area. Dimensions of ecotourism development refer to the environmental, economic, and social aspects of tourism development, and a suitable balance
between these dimensions must be established to maintain its long-term sustainability (Bhuiyan et al, 2012).

Figure 3. Sustainable development through ecotourism (Bhuiyan et al., 2012)

4. Ecotourism and environmental, social and economic impacts

Tourism can be sustainable if development meets the needs of tourists and local residents while protecting future opportunities. Ecotourism offers benefits for local residents, conservation, development and educational experiences. Ecotourism is a sustainable form of natural resource-based tourism. It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and their habitats, as well as cultural artefacts from the locality (Dowling, 1997; Fennell, 1999).

Ecotourism entails a combination of conservation and tourism (the economics related with it) to benefit local communities, especially focusing on sustainability (Myburgh & Saayman, 2002).

Natural and cultural landscape values form a basis for ecotourism. These values are geographical position, microclimatic conditions, existence of water, natural beauties, existence of natural vegetation, existence of wildlife, surface features, geomorphologic structure, local food, festivals and pageants, traditional agricultural structure, local handicrafts, regional dress culture, historical events and people, heritage appeals, architectural variety, traditional music and folk dance, artistic activities and so on (Gerry, 2001; Lane, 1993, Lanquar, 1995; Soykan, 1999; Brassoulis, 2002, Catibog-Sinha & Wen, 2008; Mlynarczyk, 2002; Drzewiecki, 2001; Kiper, 2006).
Ecotourism operates for one or more of the eco-friendly alternatives for the economic use of natural resources compared with mining, hunting, farming and so on (Li, 2006). Ecotourism promotes an enhanced appreciation of natural environments and environmental education by exposing visitors and locals to nature and conservation (Bob et al., 2008).

Ecotourism is largely perceived to safeguard natural areas and thereby to contribute to the conservation of biodiversity. It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and their habitats, as well as cultural artefacts from the locality. In ecotourism planning the first issue that emerges is the environment and its conservation (Munn, 1992; Ceballos-Lascurain, 1996; Gössling, 1999; Tisdell & Wilson, 2002; Lindsey et al., 2005; Lopez-Espinosa de los Monteros, 2002; Fung & Wong, 2007)

An ecotourism destination must in no way be developed without planning in terms of environmental concern (Rahman, 2010). Within the ecotourism implementation existence of water resources creates advantages in terms of both visuality and utilization. Climatic features of a region influence tourism directly and indirectly and play a crucial role in the development of tourism. Plants drawing interest thanks to their size, age or appearance are other appealing components of ecotourism. Flowering plants are important resources in ecotourism. Historical, natural and folkloric values are important sources for ecotourism. According to Soykan, traditional commercial products are one of the most significant appeals leading to development of ecotourism in a region. This is because whole production process from planting to harvest and processing bear cultural differences, and most of them are performed in traditional ways (Kiper, 2011).

Ecotourism has the potential to seriously impact local communities, largely due to the tendency of ecotourists to have a greater interest in the culture and nature of the areas they visit, as compared to mass tourists (McMinn, 1997).

Ecotourism destinations are always environmentally sensitive because ecotourism activities directly involve various environmental phenomena including bird watching, trekking, mountaineering, horse riding and elephant riding within the forest wilderness trail, staying in natural caves, studying about flora and fauna, simple bush walking, fishing, animal behavior study, ecological studies (Rahman, 2010). Ecotourism always incorporates various activities in nature (hiking, mountain climbing, observing the living beings in their natural habitat, etc.), but it may include cultural activities, too. Ecotourism is an important educational component, it is a chance to learn respect for nature, for the local culture, and for some it is a chance to self-reflection being inspired by the beauty of the surroundings.

5. Ecotourism and sustainable development relationship

Tourism is a highly complex activity and thus requires tools to assist in effective decision making to come to terms with the competing economic, social, and environmental demands of sustainable development (Fadahunsi, 2011). Table 3 indicates some interesting examples of potential risks from tourism activities, which are especially crucial in naturel and culturel areas.
Examples of risks from tourism activities

<table>
<thead>
<tr>
<th>Element</th>
<th>Examples of risks from tourism activities</th>
</tr>
</thead>
</table>
| Ecosystems | • The construction of accommodation, visitor centres, infrastructure, and other services has a direct impact on the environment, from vegetation removal, animal disturbance elimination of habitats, impacts on drainage etc.  
  • Wildlife habitat may be significantly changed (travel routes, hunting areas, breeding areas, etc.) by all kinds of tourist development and use. |
| Soils | • Soil compaction can occur in certain well-used areas.  
  • Soil removal and erosion also occurs, and may continue after the disturbance is gone |
| Vegetation | • Concentrated use around facilities has a negative effect on vegetation.  
  • Transportation may have direct negative impacts on the environment (e.g. vegetation removal, weed transmission, animal disturbance).  
  • Fire frequency may change due to tourists and park tourism management. |
| Water | • Increased demands for fresh water.  
  • Disposal of sewage or litter in rivers, lakes or oceans.  
  • Release of oil and fuel from ships and smaller craft.  
  • Propeller-driven watercraft may affect certain aquatic plants and species. |
| Air | • Motorised transportation may cause pollution from emissions (from plane, train, ship or automobile). |
| Wildlife | • Hunting and fishing may change population dynamics.  
  • Hunters and fishers may demand the introduction of foreign species, and increased populations of target animals.  
  • Impacts occur on insects and small invertebrates, from effect of transportation, introduced species, etc  
  • Disturbance by visitors can occur for all species, including that are not attracting visitors.  
  • Disturbance can be of several kinds: noise, visual or harassing behaviour.  
  • The impact can last beyond the time of initial contact (e.g. before heat-rate returns to normal, or before birds alight, or mammals resume breeding or eating).  
  • Marine mammals may be hurt or killed by boat impacts or propeller cuts.  
  • Habituation to humans can cause changed wildlife behaviour, such as approaching people for food. |

Table 3. Potential Risks from Tourism (Ecotourism – Sustainable Tourism in National Parks and Protected Areas, 2005)

Ecotourism has been regarded as a panacea for solving many of the environmental and economic problems of less developed nations. Yet, regardless of how socially and environmentally responsible ecotourism may be in theory, in practice it remains rooted in
the tourism industry (Wall, 1997). Similarly, tourism activities generally can create various negative impacts on the surrounding environment. Increased human interference in ecologically fragile areas can cause irreversible change in the existing ecological processes. These problems can be reflected in degrading natural resources, vegetation structure and the size of the habitat patch, increasing deforestation and decreasing upstream water flow (Tourism Queensland, 2002).

Ecotourism is rooted in the concept of sustainable development, as defined by the World Commission on Environment and Development’s Brundtland report (1987) (Place, 1995; King & Stewart, 1992; McMinn, 1997; Stem et al., 2003). According to the emergence of sustainable tourism development it is proven that the milestone for its emergence was the Brundtland Report by the WCED in the year 1987. Previously, many ideas in this field had been developed at the IUCN -The World Conservation Union and referenced in the World Conservation Strategy published in 1980 (Ritchie & Crouch, 2003). Ecotourism is often perceived as an tool for promoting sustainable development in developing countries.

Ecotourism helps in community development by providing the alternate source of livelihood to local community which is more sustainable. Many view ecotourism as a viable way to protect the natural environment and create social and economic benefits for local communities. Ecotourism encompasses a spectrum of nature-based activities that foster visitor appreciation and understanding of natural and cultural heritage and are managed to be ecologically, economically and socially sustainable. Therefore, ecotourism is accepted as an alternative type of sustainable development. Ecotourism has attracted increasing attention in recent years, not only as an alternative to mass tourism, but also as a means to promote a country’s economic development and environmental conservation. Its aim is to conserve resources, especially biological diversity, and maintain sustainable use of resources, which can bring ecological experience to travelers, conserve the ecological environment and gain (Bansal & Kumar, 2011; Godratollah et al., 2011; Tewodros, 2010). Ecotourism is increasingly being lauded as a sustainable development option for rural communities, one that is able to spur economic development (Vogt, 1997) and instill environmental protection at the same time (Cater, 2002). If the environment has not at least achieved a net benefit toward its sustainability and ecological integrity, then the activity is not ecotourism.

Many groups have proposed sets of guidelines or principles for sustainable tourism and ecotourism. Ecotourism is a sustainable version of tourism in natural areas, including at the same time elements of rural and cultural tourism. Besides subscribing to the principles of sustainable tourism, ecotourism has specific principles: it contributes actively to the conservation of natural and cultural heritage, it includes local communities in planning, development and operation activities, and it contributes to their welfare, it involves complete and interesting explanations for visitors, regarding the natural and cultural resources, it is intended mainly to individual visitors and also to small organized groups (Sâmbotin et al, 2011). According to Buchsbaum 2004; in many ways, sustainable tourism exemplifies the relationship between ecotourism and sustainable development. Many groups have proposed sets of guidelines or principles for sustainable tourism and ecotourism Tourism Concern and the World Wildlife Fund for Nature developed a wellknown list of principles and guidelines in 1991, which are presented in Table 4.
1. Using resources sustainably

The conservation and sustainable use of resources - natural, social, cultural, -- is crucial and makes long-term business sense. Using resources sustainably:

2. Reducing over consumption and waste

Reduction of over-consumption and waste avoids the costs of restoring long-term environmental damage and contributes to the quality of tourism.

3. Maintaining Biodiversity

Maintaining and promoting natural, social, and cultural diversity is essential for long-term sustainable tourism, and creates a resilient base for the industry.

4. Integrating tourism into planning

Tourism development which is integrated into a national and local strategic planning framework and which undertakes environmental impact assessments, increase the long-term viability of tourism.

5. Supporting local economies

Tourism that supports a wide range of local economic activities and which takes environmental costs and values into account, both protects these economies and avoids environmental damage.

6. Involving local communities

The full involvement of local communities in the tourism sector not only benefits them and the environment but also improves the quality of the tourism project.

7. Consulting stakeholders and the public

Consultation between the tourism industry and local communities organizations and institutions is essential if they are to work alongside each other and resolve potential conflicts of interest.

8. Training Staff

Staff training which integrates sustainable tourism into work practices, along with recruitment of personnel at all levels, improves the quality of the tourism product.

9. Marketing tourism responsibly

Marketing that provides tourists with full and responsible information increases respect for the natural, social and cultural environments of destination areas and enhances customer satisfaction.

10. Undertaking research

Ongoing research and monitoring by the industry using effective data collection and analysis is essential to help solve problems and bring benefits to destinations, the industry and consumers.

Table 4. Principles for Sustainable Tourism (Blamey, 2001).

Medina (2005) explains that a criterion for sustainable tourism should include indicators of social and economic sustainability adding up to indicators of environmental sustainability. In addition, Wall (1997) has argued that for tourism to contribute to sustainable development it must be economically viable, environmentally sensitive and culturally...
appropriate, and the forms that this might take are likely to vary with location. The following table 5. develops sustainability goals of ecotourism. Achieving sustainable tourism—defined here as tourism that is ecologically benign, economically feasible and socially acceptable—is thus contingent on environmental protection and reconciling tourism activities with local socio-economic values (Brown et al., 1997).

| A: Environmental sustainability goals of ecotourism | promotes environmental protection (impact assessment and environmental planning, construction methods and materials, visual impacts, water supply, air quality, waste minimisation and litter drainage and stormwater, wastewater, water conservation, energy minimisation — buildings, energy minimisation — transport, minimal impact on wildlife) provides environmenta education -increases public environmental consciousness -fosters healthy attitudes and behaviors towards nature encourages donations to contribute to the protection of local natural resources air quality |
| B: Sociocultural sustainability goals of ecotourism | Promotes local peoples active participation Promotes local ownership Empowers local people -e.g. builds up local peoples confidence/self-esteem Enhances local communitys equilibrium Encourages intercultural appreciation and communication between host communities and tourists |
| C: Economic sustainability goals of ecotourism | Contributes to lasting local economic development Creates permanent jobs for local people Drives the development of other related industries Upgrades local infrastructure Profits esrned retained within local communities Equal distribution of revenues Promotes consumption and production Finances the establishment and maintenance of protected areas Uses natural resources efficiently |

**Table 5.** Three systems of sustainability in ecotourism development (According to Wall 1997; Alexander and Whitehouse 2004; (Jiang 2008).  

These criteria include quantification of environmental performance for most of the key environmental indicators. This allows recognition and encouragement of ecotourism product that makes measured environmental improvements which result in a more

According to Rome (1999); Ecotourism is one strategy for supporting conservation and providing income for communities in and around protected areas. It can contribute to economic development and conservation of protected areas by: a) generating revenues that can be used to sustainably manage protected areas, b) providing local employment and c) inculcating a sense of community ownership. However, without careful planning and management that balance ecological, social, and economic objectives, it may lead to environmental damage. Furthermore, envisioned as a positive approach towards sustainable development, unplanned or poorly planned and implemented tourism can have serious negative effects, offsetting the benefits it was designed to provide. Even the potential local benefits of ecotourism can lead to environmental damage to a protected area.

The core set of eight principles are that ecotourism product should: (The Green Globe 21 International Ecotourism Standard, 2004)

1. Focus on giving visitors the opportunity to personally and directly experience nature (Natural Area Focus);
2. Provide opportunities to experience nature in ways that lead to greater understanding, appreciation and enjoyment (Interpretation);
3. Represent best practice for environmentally sustainable tourism (Environmental Sustainability Practice);
4. Contribute directly to the conservation of natural areas (Contribution to Conservation);
5. Provide ongoing contributions to the local community (Benefiting Local Communities);
6. Be sensitive to, interpret and involve the culture/s existing in the area (Cultural Respect);
7. Consistently meets consumer expectations (Customer Satisfaction); and
8. Be marketed and promoted honestly and accurately so that realistic expectations are formed (Responsible Marketing).

One of the most influential ecotourism documents, the Quebec Declaration on Ecotourism (2002), produced after the World Ecotourism Summit during the International Year of Ecotourism, recognized that not only does ecotourism embrace the principles of sustainable tourism but it also embodies the following specific principles: (1) contributes actively to the conservation of natural and cultural heritage; (2) includes local and indigenous communities in its planning, development and operation, and contributes to their well-being; (3) interprets the natural and cultural heritage to visitors; (4) encourages independent travelers, as well as organized tours for small size groups. TIES’ (2010) asserts that those involved in ecotourism should follow six principles: (1) minimize impact; (2) build environmental and cultural awareness and respect; (3) provide positive experiences for visitors and hosts; (4) provide direct financial benefits for conservation; (5) provide financial benefits and empowerment for local people; and (6) raise sensitivity to hosts’ cultures political, and social climate)(McLaughlin, 2011).
The participants at the World Ecotourism Summit, held in Quebec in May 2002, have acknowledged that ecotourism respects the principles of sustainable tourism referring to the economic, social and environmental impact, with some further specific principles (Sâmbotin et al, 2011);

- Ecotourism actively contribute to the conservation of natural and cultural heritage.
- Ecotourism include local communities in the activities of planning, development and operation, and it contributes to their welfare.
- Ecotourism involves complete and interesting explanations for visitors, regarding the natural and cultural resources.
- Ecotourism is intended mainly for individual visitors and small organized groups.

According to Ramwell and Henry (1996) point out four basic principles of sustainable development and sustainable ecotourism tourism development (Yogi, 2010).

- Holistic and strategic planning
- Conservation of essential ecological system
- Conservation of both human (cultural) and natural heritage
- Long term development and productivity for the future generation.

So both sustainable tourism and sustainable development focuses on the same key issues of ecology, society, and a systemic process of development that is guided by strategic planning (Yogi, 2010).

6. Ecotourism – examples of implementation

More tranquil, natural and original spaces are preferred to ordinary tourism centers. Likewise, individuals have begun to prefer activities, which they can particularly perform in natural and cultural areas and with which they can learn original cultural values and be within the nature, instead of sea-sand-sun tourism. Ecotourism has increased very quickly in recent years especially in developing countries. These are highlighted in Table 6 and pertain to economic aspects, impacts on culture, environmental concerns and development. In the Tourism Strategy of Turkey-2023 and the Ninth Development Plan (2007-2013), it is aimed to utilize natural, cultural, historical and geographical values of Turkey based on conservation-use balance, to increase the share of Turkey from tourism and to promote the attractiveness of regions via alternative tourism types like ecotourism (Tourism Strategy of Turkey-2023, 2007; Ninth Development Plan, 2006).

Ecotourism is implemented differently around the world, and the impacts on native cultures vary similarly. It is universal that tourism is a crucial industry to provide economic support to developing countries. An international pact in 1996 designated the tourism industry as the paramount economic growth strategy within Central America (Moreno, 2005). At this point, “Ecotourism” activities have particularly recently become sectors which can create great changes both in socio-cultural and economic aspects.
<table>
<thead>
<tr>
<th><strong>pros</strong></th>
<th><strong>cons</strong></th>
</tr>
</thead>
</table>
| Environmental | • Low environmental impact  
• Watching landscape, plants and animals, being acquaintance with local cultural activities, observing through directly contacting with nature, obtaining knowledge and assessment will be provided via ecotourism activities.  
• The affective factor of region rises.  
• Natural texture is protected.  
• The opportunities of underwork and bodywork rise. | • Risk of environmental degradation  
• Environmental pollution rises  
• The decays of natural resource happen. |
| Developmental | • Provision for the development of the community  
• Capacity building within the community  
• Provision for health and family planning  
• Extending ecotourism activities year round will prevent to utilize natural landscape assets of the region only in summer and will prevent short time pressure on the sources.  
• New investments come to region  
• The quality of agricultural production rises and in quality production has its real value. | • Failure to meet the community’s perception of development  
• Advantages open to abuse by community members  
• Controversy about the motivation of such programmes  
• Hotel, motel or other usages cause environmental decays.  
• Transportation density rises. |
| Conservation | • Enhancement of conservation objectives  
• Monitoring of habitat and species | • Disturbance to habitats and species  
• Threats posed by dangerous animals |
| Cultural aspects | • Awareness of the local cultures  
• Low cultural impact  
• Internal migration happens with tourism.  
• Festival etc. activities rise.  
• It supplements intersectoral cooperation.  
• Conventional culture is lived by protected. | • Misre presentation and degradation of cultures  
• Visual and noise pollution happen  
• Feasible population rise effects local peoples’ daily life in a negative way.  
• Conventional life style changes. |
| Education | • Education can help reduce “avoidable impacts” such as littering, ad hoc campfires, inappropriate disposal of waste, | • Erosion of traditional values and for the guests |
and damage to vegetation. Much research has been directed toward determining acceptable standards for a variety of social and ecological impacts
- Awareness increase, both for the community

<table>
<thead>
<tr>
<th>Economic</th>
<th>pros</th>
<th>cons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Revenue generation</td>
<td>• Uneven benefit sharing between partners</td>
</tr>
<tr>
<td></td>
<td>• Employment</td>
<td>• Low percentage of community employment</td>
</tr>
<tr>
<td></td>
<td>• Promotion of local micro enterprise</td>
<td>• Risk of failure in small businesses</td>
</tr>
<tr>
<td></td>
<td>• New opportunities for employment can be composed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Diversity can be provided for agricultural product</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Life standards rise.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• It supplements women employment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• The quality of agricultural production rises and in quality production has its real value.</td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Effects of eco-tourism in international countries (Watkin, 2003; Kiper, Özdemir, Sağlam, 2011)

Ecotourism activities have been sorted into the following categories: (Economic Development Branch BC Ministry of Sustainable Resource Management, 2003)

- Marine Ecotourism
  - marine cruising including sailing, yacht and power cruising
  - sea kayaking tours
- Land based Ecotourism
  - Bicycle Touring/Mountain Biking
  - Horseback Trail Riding
  - Hiking/Backpacking/Trekking
  - Freshwater River Rafting, Canoeing and Kayaking
  - Winter Tourism (Back Country /Tour Skiing, Dog Sledding, Snow Shoeing)
- Walking, camping, boating, hunting, sight-seeing, swimming, cultural activities, observing wildlife and nature, skiing, visiting historical places, and horse riding among others.

The general trend in ecotourism is to increase experiences by encouraging activities such as long-distance walking, camping, boating, hunting, sight-seeing, swimming, cultural activities, bicycling, observing wildlife and nature, skiing, visiting historical places, and horse riding among others. Generally, instructive activities, for example, wildlife observation, participation in festivals, cultural activities and nature landscapes, attract most
attention. Activities like hiking, outdoor sports, picnic, paragliding arranged according to different areas of interest influence the preferences of many visitors (Kiper, 2011; Cengiz, 2007). According to Soykan, for Europeans rural roads are natural and cultural heritages. This is because they have natural, economic and cultural identities. Some give us opportunity to familiarize with local planting patterns by passing through agricultural lands, some lie among virgin natural areas with beautiful views (e.g. forests, rivers, lakes) and some connect the settlements which have unique cultural monuments. Therefore, in many countries in Europe (specifically Austria, Switzerland and France, which have mountainous areas) long distance trekking is well-organized (Kiper, 2011).

In order for ecotourism to have a sustainable development, the analyses for determining land use suitabilities gain importance. It and other similar methods set standards or ranges of acceptable change and describe a methodology for determining these standards, measuring impacts and identifying management strategies for controlling negative impacts. They include in recent years resources assessments have adopted opportunity spectrum methods. Opportunty spectrum this group includes (Fagence, 2001; Rome, 1999);

- ROS (Recreation Opportunty Spectrum)
- TOS (Tourism Opportunty Spectrum)
- LAC (Limits of Acceptable Change)
- TA (Threshold Analysis, and more recently UET-ultimate environmental thresholds)
- ECOS (Ecotourism Opportunty Spectrum)
- Limits of Acceptable Change (LAC)
- Visitor Impact Management (VIM)
- Visitor Experience and Resource Protection (VERP)
- Tourism Optimisation Management Model (TOMM)

The ECOS model (Table 7) has been developed especially to cope with the peculiar needs of planning for ecotourism the capture of ecological base-line data is the important first step.

Refinement to ECOS assesments could include

- Landscape assesments (to differentiate geographical sectors according to their principal ecotourism resources, stages of “naturalness/change, levels of ecotourist interest)
- Attractiveness indices (to differentiate according to uniqueness, international drawing power, primacy-a measure of comparative attraction)
- Resource status (to differentiate according to the degree of disturbance of the natural resource, and any circumstance which might impede its sustainability or cause its attractiveness to be forfeited –a form of carrying capacity assesment)
- Conservation potential (including rehabilitation potential)
- Marketing assesments (combining some of the other assessments according to an aggregation of attractiveness for particular consumer/tourist market segments –to interpret the feasibility of capturing and sustaining tourist interest)

This data is then assessed or measured in terms of the capacity to be used in ecotourism, with the assessment focusing on eight important factors:
### Accessibility
- Tho the ecotourism region
- Tho the site

### Relationship
- Between ecotourism and other potential uses of the same resource
- Complementarity, compatibility, integration, competition

### Attractions
- Types of ecotourism experiences
- IN (Tropical forests, mountain areas)
- OF (birds, tress, wild flowers, mammals)
- BY (watching, filming, collecting)

### Infrastructure
- Support infrastructure
- Support services

### User pre-requisites
- Prior knowledge
- Prior skills
- Equipment

### Social interaction
- Level of interaction sought, achieved
- Level of interaction with local/host community sought, achieved

### Visitor impacts
- Consequences of visitor access
- Controls on visitor access, use

### Management
- Stakeholder involvement
- Decision process

#### Table 7. ECOS models (Fagence, 2001)

Also, “Multi-Criteria Decision-Making Methods” are used widely in detecting land use suitabilities. The integration of ELECTRE, to give the order of precedence of uses, with GIS, a quite important means in spatial planning studies, will enable to reach successful results. Studies for determining the suitabilities for use of a land for ecotourism will also determine the development of the land in the following years and the sustainability of its resource values.

In the eco-tourism plans, diversifying economic and ecologic activities by starting and developing organized eco-tourism practice, enhancing the life quality of the locals with the economic gains provided by eco-tourism, increasing the participation of habitat conservation, improving environmental conscious, conserving natural, cultural and historical landscape values and passing them onto the next generation and popularizing ecotourism planning with the support and participation of responsible and related organizations should be aimed. Good planning of natural and cultural elements that create resources for eco-tourism activities and their management will make important contributions to the local public. (Gültekin, 2010).

While envisioned as a positive approach towards sustainable development, unplanned or poorly planned and implemented tourism can have serious negative effects on the environment and on communities, offsetting the benefits it was designed to provide. In order to anticipate negative impacts and to prevent or mitigate them, ecotourism impacts monitoring is required. The sample of potential ecotourism monitoring indicators are shown in Table 8.
<table>
<thead>
<tr>
<th>Indicators</th>
<th></th>
</tr>
</thead>
</table>
| **Environmental** | • Species of special tourism interest – numbers recorded per time or area, breeding sites  
• Endangered species – numbers recorded per time or area, breeding sites  
• Keystone species – numbers recorded per time or area, breeding sites  
• Trail width  
• Trail maintenance required  
• Water quality  
• Vegetation trampled near trails and infrastructure |
| **Experiential** | • Number of other people or groups encountered on trails  
• Number and size of vehicles in parking areas  
• Degree of solitude experienced by visitors  
• Number of repeat visitors  
• Tourist ratings of guides  
• Ratings of food and accommodations |
| **Socio-cultural** | • Quality of historical, cultural sites  
• Knowledge of traditional uses of flora and fauna and rituals  
• Changes in land use near protected areas  
• Quality and quantity of consumption  
• Changes in dress and language  
• Use of free time  
• Community attitudes about tourists and tourism |
| **Economic** | • Number and size of vehicles in parking areas  
• Residents working directly in ecotourism  
• Residents providing ecotourism services indirectly  
• Residents not involved with ecotourism  
• Amount of protected area budget spent on ecotourism-related management  
• Revenue generated by ecotourism for protected area  
• Amount of money spent on community improvements  
• Changes in costs of local goods and services  
• Rate of new construction in the area  
• Population changes  
• Number and volume of new businesses |
| **Infrastructure (or managerial)** | • Number and length of trails  
• Amount of infrastructure development within protected area  
• Amount of time spent in maintenance of infrastructure  
• Lodging capacity in and around the protected area  
• Degree of road maintenance required  
• Methods of communication and transport |

Table 8. A sample of potential ecotourism monitoring indicators (Rome, 1999)
7. Conclusion

Various tendencies also occur in the understanding of tourism upon changing living conditions. More tranquil, natural and original spaces are preferred to ordinary tourism centers. Likewise, individuals have begun to prefer activities, which they can particularly perform in natural and cultural areas and with which they can learn original cultural values and be within the nature, instead of sea-sand-sun tourism. At this point, “Ecotourism” activities have particularly recently become sectors which can create great changes both in socio-cultural and economic aspects. Main purpose is not only ensuring the socio-economic development but also the protection of natural and cultural landscape values to ensure awareness of nature conservation on the other hand.

Ecotourism should be seen in direct relation to nature conservation (protected areas), with preservation of the authentic and involving local communities in all stages of the process. Development process is a lengthy process, which requires a sustained effort from all those involved but can bring major benefits in the long term, contribute directly to the creation of “sustainable existing” target area (Roxana, 2012).

Ecotourism is about (Roxana, 2012);

- environmentally responsible travel to relatively undisturbed natural areas,
- travel in order to enjoy, study and appreciate nature,
- the promotion of conservation,
- combining sustainable development with the natural environments,
- the use of natural assets and resources in ecologically sensitive areas to create unique visitor experiences with minimal impact on the area.

After research we can draw the main conclusions of this work, as it follows: (Sâmbotin, 2011)

- Ecotourism is a form of tourism developed in natural areas, whose goal is to acknowledge and to appreciate nature and local culture, which includes conservation measures and ensures an active involvement, generating benefits for the local population;
- Ecotourism clothes the sustainable tourism principles, but differs from it by aspects related to local community issues, interpretation for visitors to a particular destination, the number of visitors;
- Tourism has a complex impact on the environment, but it is also generating both cost and benefits;
- The interest of tourists for travel in natural areas (land or water) has increased recently;
- Ecotourism contributes to increased revenues from tourism, but also to the positive social effects;
- Worldwide, there are a large number of natural areas associated with a specific cultural diversity, resulting in particular through the perpetuation of the long traditions and customs;
- Tourists have a certain responsibility towards the destination visited and the environment by their choice itself, behavior and activities performed in that space, and therefore it is important to be informed about the quality and sensitivity of destinations.
These principles should be envisaged both for lovers of this form of tourism and service providers of such eco-touristic products.

Basic purposes of ecotourism are to preserve and utilize natural and cultural resources in a sustainable way and to enable economic development of local people. However, achieving the aims in ecotourism depends on whether they are environmentally and ecologically sustainable and economically applicable. In order to achieve these, a participative tourism planning is required (Kiper, 2011). Figure 4 illustrates the multiple and diverse elements essential for ensuring that communities fulfil their role in ecotourism development (Drumm & Moore, 2002).

Figure 4. Essential elements for ecotourism in community setting

Now that ecotourism has reached such stature, it is especially important to scrutinize its effectiveness as a strategy for sustainable development, and search for ways to improve policies and practices. Clearly ecotourism is not a universal remedy; but its potential to promote sustainable development deserves considerable attention.

In conclusion, According to Kiper, Özdemir and Sağlam (2011); ecotourism activities which are not performed according to the purpose, the principles and the characteristics cause the disturbance in environmental, economic and socio-cultural fields due to over-intensification to be occurred especially in sensitive ecosystems like naturel and curtel areas. Therefore, in order to provide sustainability in the ecotourism, it is necessary to know environmental, social and economical effects of ecotourism activities and to consider these effects during the
planning. Tourism planning purposes this relationship between rational resources requirements ensuring the sustainable use of natural (water, vista, topography, clean air, natural vegetation structure, microclimatic features of climate, marine and coastal topographic structure and motion, etc.) and cultural resources (Archaeological heritage, Religious structures, Conventional architecture, Traditional social activities) to the evaluation of the physical planning decisions in the field of ecological planning strategies (Dinç and Kocan, 2012). Additionally, According to Bunruamkaew & Murayama (2012); ecotourism development must promote educational development and create awareness in people of the need to jointly maintain the ecosystem of the area. There is a need to implement development plans and manage natural resources in a way that ensures ecological and environmental integrity. Environmental education and interpretation is the key to creating an enjoyable and meaningful ecotourism experience, and is one of the key points of differentiation between ecotourism and other tourism products. Successful interpretive components of ecotourism products will foster appreciation and support for conservation efforts, local communities and culture.

Author details
Tuğba Kiper
Namık Kemal University, Faculty of Fine Arts, Design and Architect, Department of Landscape Architecture, Turkey

8. References


Chesworth, N. 1995. Ecotourism Seminar paper delivered in the Institute of Environmental Studies and Management. UPLB. College, Laguna


McLaughlin, M.J. 2011. Ecotourism Assessment: Applying the Principles of Ecotourism to Paddle-Based Recreation in St. Lawrence Islands National Park and Environ. A thesis submitted to the Graduate Program in School of Environmental Studies in conformity with the requirements for the Degree of Master of Environmental Studies. Queen’s University, Kingston, Ontario, Canada, pp. 142.


