

# Impact of Sustainable Tourism on Biodiversity

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## Introduction

High population growth rates and demand for natural resources are posing major threats to pristine biologically rich areas. Integrating biodiversity conservation and sustainable tourism development is the need of the hour which provides a mechanism for bringing a balanced approach to development in biologically sensitive environments. Biodiversity conservation and sustainable tourism are interlinked thus the threats or challenges to biodiversity tend to impact negatively on the tourism sector and vice versa. Stakeholder participation, good governance and education and awareness are keys to successful integration. However, biodiversity is under pressure worldwide and has suffered severe losses as more and more land is converted for human use from a natural state, and as these human uses become more intensive. In 2005, the UN's Millennium Ecosystem Assessment concluded that human activities threatened the Earth's ability to sustain future generation.

## Biodiversity

Biodiversity - is the term given to the variety of life on Earth and the natural patterns of community, interaction with one another and with the air, water, and soil around them, it forms that has made Earth a uniquely habitable place for humans. The biodiversity we are endowed with today is the fruit of billions of years of evolution, shaped by natural processes and, increasingly, by the influence of humans. It forms the web of life of which we are an integral part and upon which we so fully depend.

It is the variety of ecosystems such as those that occur in deserts, forests, wetlands, mountains, lakes, rivers, and agricultural landscapes.

Biodiversity provides a large number of goods and services that sustain our lives. Protecting

biodiversity is the need of the Hour. Biological resources are the pillars upon which we build civilizations. Nature's products support such a large number of industries as agriculture, cosmetics, pharmaceuticals, pulp and paper, horticulture, construction and waste treatment. The loss of biodiversity threatens our food supplies, opportunities for recreation and tourism, and sources of wood, medicines and energy.

These natural services are varied and irreplaceable.

Services provided by ecosystems include:

- Provision of food, fuel and fibre
- Provision of shelter and building materials
- Purification of air and water
- Detoxification and decomposition of wastes
- Stabilization and moderation of the Earth's climate
- Moderation of floods, droughts, temperature extremes and the forces of wind
- Generation and renewal of soil fertility, including nutrient cycling
- Pollination of plants, including many crops
- Control of pests and diseases
- Maintenance of genetic resources as key inputs to crop varieties and livestock breeds, medicines, and other products
- Cultural and aesthetic benefits
- Ability to adapt to change

## Tourism

Travelling for the pleasure of it refers to Tourism. It is encouraged by the ever-progressing globalization. With the world taking an upgrading pace, tourism is marking its importance in building the global economy largely. *Potgieter et al.* (2010), suggests the tourism industry is taking a toll in constructing a highly competitive and dynamic scenario on a global level adding to its nature are the complex features influencing its existence.

Also, tourism has vastly become a term of bilateral significance which deals its importance both with the people take part in touring and those who make provisions for the needs and services of tourists (*Butler, 1993*).

Going by the scenario of the last few decades, the convenience of spending a holiday is directly in proportion with the ease and amount of money being spent on it. Therefore, this has given rise to a sea number of holiday packages keeping in mind the budgets of varying tourists that has had a drastic impact on mass tourism. (*Mowforth and Munt 1998: 82-90*).

## UNWTO

The United Nations World Tourism Organization (UNWTO) is the United Nations agency responsible for the promotion of responsible, sustainable and universally accessible tourism.

## UNWTO Definition of Tourism

*"Tourism comprises the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes."*

## Importance of Tourism

- tourism represents one of the few economic opportunities available to remote communities
- tourism provides a real opportunities to reduce poverty, create employment for disadvantaged people and stimulate regional development
- tourism has proven to revitalize cultures and traditions
- tourism can provide an economic incentive to conserve natural and cultural assets.
- tourism has been shown to foster greater understanding between peoples and a greater global consciousness

Sustainable tourism is an important issue of how best to encourage tourism while minimizing its costs

## Tourism in India

India is very diverse. We have some of the Coldest places in Kashmir, A place that has highest rainfall in world – Cherrapunji, and also one if the driest places on the Earth – The Thar Desert. More than half of Indian boundary is home to beautiful beaches. And last but not least, the Northern part of India hosts Himalayan Ranges snow capped mountains.

There are different cultures and hundreds of Languages and Dialects – A potent mix of diversity.

## Topmost Tourist places of India

- Agra
- Jaipur/Udaipur
- Goa
- Kashmir
- Kanyakumari
- Kerala
- Old Delhi
- Ajanta Ellora
- Mysore
- Leh Ladakh
- Gangtok
- Rohtang Pass

## Impact of Tourism

Keyser (2009) has derived a strategical approach in a holistic way giving the three pillars of sustainable development namely, environmental integrity, social justice and economic efficiency. All then mentioned features should be maintained and implemented in order to provide our future generation a reasonable and feasible way to lead a good life.

## Social Impact

It is necessary to develop the plethora of raising hands of friendship and optimistic attitude. It develops a sense of respect and honor for the destination country which imbibes its significance at a greater level. When a tourist visits another place or region, he/she becomes aware of the distinctive

culture and tradition of that particular place and it leads to interaction among people coming and belonging from different walks of life. This creates an ambience of psychological satisfaction. (Mirbabayev & Shagazatova, 2012.).

## Economic Impact

Tourism is that one industry which is immensely growing on an ever-changing and fast pace. Tourism has built large number of employments and has immensely contributed to the taxation further contributing to the economy. The capital acquired from the lodging, transportation and food has had of a great importance to the economy. Thus, directly or indirectly, tourism has generated a wide range of different jobs and has benefitted earnings from foreign exchange. Tourism industry consumes a number goods and services, food and transportation which also include taking care for the privileges and safety of tourists. Tourism encourages entrepreneurship, trade and income. Adding to this is the capital raised by the visa charges and royalty that significantly contributes to the economy (Bista 2006). Many tourists bring back to their homes things bought from the destination countries as souvenir. Exempting a few exception, overall tourism has a positive effect on the growth of a region. As stated in one of the laws of economics, “when the demand for a particular good or service increases, on the other hand it decreases the price value of that good or service” (Bista 2006).

## Environmental Impacts

The perseverance of a tourist spot can be largely maintained by maintaining its natural bounties. Elements of nature signify the attraction of many tourists. Many tourism activities have proved to be hazardous and destructive for the natural environment (Newsome et al, 2002). Most of this destruction is due to the setting up of roads, concrete structures, golf courses, hotels, shops and many such developments (Newsome et al, 2002). Whenever there is a mass emergence of people as visitors, it largely affects not just the culture and traditions of that particular region but also exploits the local resources of that region and leads to environmental

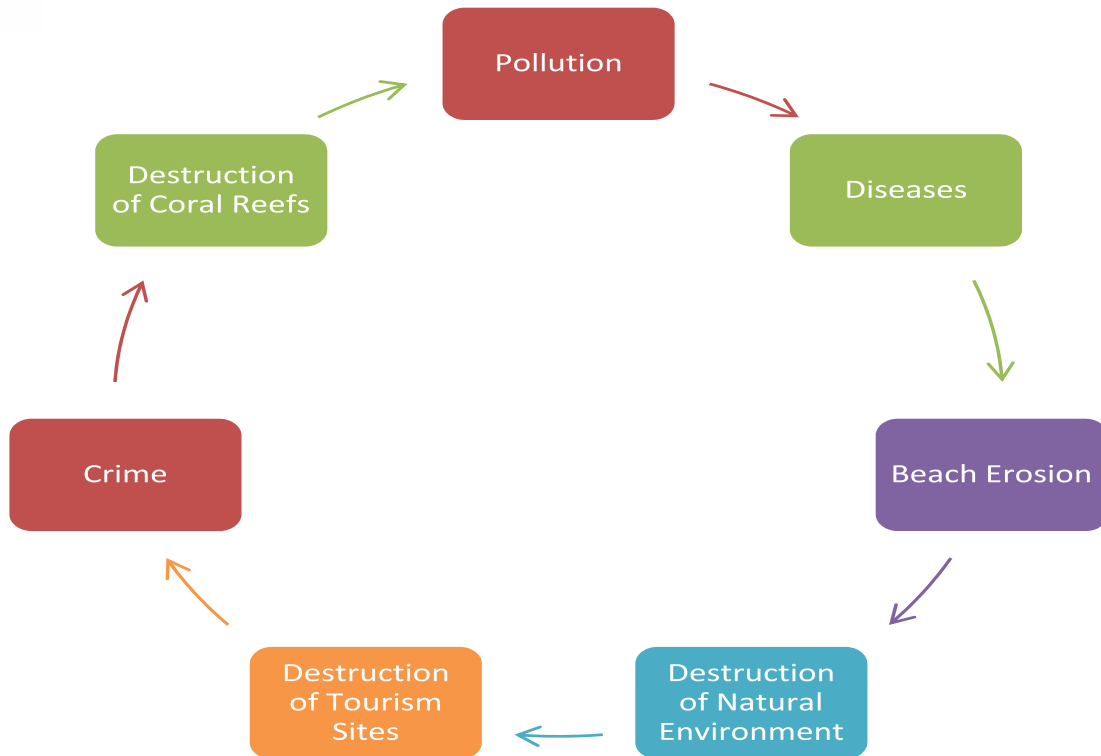


Fig.1: Consequences of Uncontrolled Tourism



Fig.2: Pollution degrading Taj Mahal



Fig.3: Plastic Pollution



Fig.4: Tourism Garbage

degradation due to water pollution, noise pollution, traffic congestion and many other similar reasons (Fig.1) (Hunter & Green, 1995; Liddle, 1997; Newsome et al., 2002; Mason, 2003, Pandey et al. 2010).

## The degradation of Taj Mahal

Agra is turning the Taj Mahal Yellow. One of the major threats to the Taj Mahal is the high level of particulate matter (PM) which is being released into air due to large scale burning of municipal solid waste (MSW) in the city. Agra is among the topmost tourist Destinations of India. Environmentalists have struggled for years to protect the Taj Mahal's white stone from turning yellow because of air pollution (Fig.2 &3). Waste from 52 open drains in the city is poisoning the river. "Industrial waste, solid waste, all this empties into the river (Fig.4).

## Challenges Imposed by Mass Tourism on Biodiversity

### Negative Impacts

1. Loss of biodiversity
2. Loss of natural beauty
3. Loss of nature and natural resources
4. Loss of water resources
5. Loss of land resources
6. Loss of local resources
7. Land degradation
8. Air pollution
9. Water pollution
10. Noise pollution
11. Thermal pollution
12. Marine pollution
13. Other pollution
14. Loss of cultural resources, social disruption
15. Natural hazards

### Positive Impacts

1. Financial Contributions
2. Improved Environmental Management and Planning
3. Environmental Awareness Raising

4. Protection and Preservation
5. Alternative employment
6. Regulatory measures

Regulatory measures can limit the negative impacts on the ecosystem and help maintain the integrity and vitality of the site.

## Sustainable Concept in Tourism Development: A tool for Biodiversity Conservation

Sustainable Tourism provides a tool for Biodiversity Conservation. It is the concept of visiting a place as a tourist and trying to make only a positive impact on the environment, society and economy. Tourism can involve primary transportation to the general location, local transportation, accommodations, entertainment, recreation, nourishment and shopping. The concept of tourism is a well-defined example of sustainable development. Tourism is one of the most active industries that are entirely dependent upon the presence of a healthy environment (Fig.6). Thus it's very important to understand and realize the importance of looking after our natural environment and preserving it not only for the purpose of greater tourism opportunities but also for our future generation which has equal right as us to cherish the gift of nature. It is the need of the hour and a matter of great concern to keep a check on the over-exploitation of resources and raising awareness for the maintenance of the natural gifts of that region especially considering the environment (Butler and Boyd 2000). It is observed in the present scenario that there exists a lack of harmony when there occurs a situation to define the appropriate meaning of sustainability or indeed, the point to relate sustainability to that with tourism (Sharpley, 2000; Tao & Wall, 2008; Wall, 1995).

Sustainable tourism can also be termed as a responsible tourism as each individual shares a portion of responsibility that includes respecting not just the local culture and norms but also going by the rules laid for the conservation of local environment. This is also helping in preserving the endangered flora and fauna of the tourism regions. It is the fundamental responsibility of the tourists to take care and judiciously use the water and other energy giving

## Sustainable Tourism



Fig.6: The flow of sustainable tourism and development

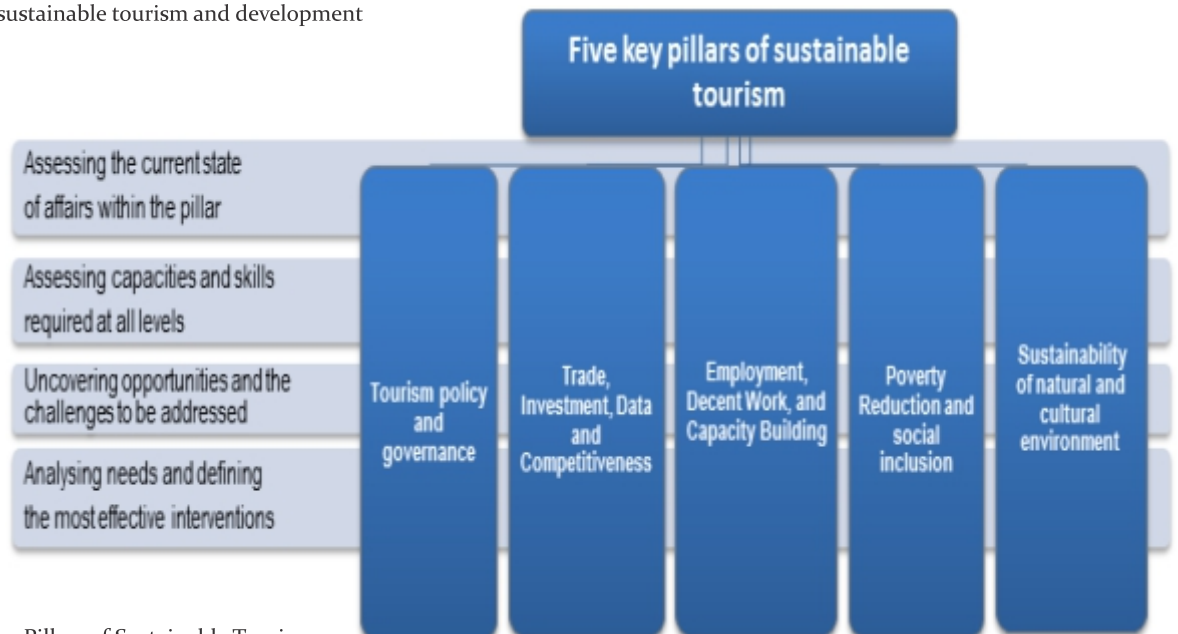


Fig.7: Pillars of Sustainable Tourism



Fig.8: Equitable Tourism

resources so that this will preserve the inherited heritage to take benefit of it further and enjoy the gifts endowed by nature in future.

There should be proper management of the resources in such a way that it not just takes care of the social, aesthetic, cultural and economic conditions of the host region but also keeps in mind the natural processes of support systems, biological diversity and ecological balance (*Wight 2002*).

This is a concept of equality and integrity that believes that the natural resources are not just for those who are alive but also for those who will be a part of the future generation (*Seap, 2010*). The concept in which environmental quality and economic status coexist, the statement of Brundt and Commission that sustainable development refers to that concept of utilizing the resources in a feasible way so that it fulfills the requirements of today without compromising the needs of the future fig.7 (*Brundtland Commission for Sustainable Development 2005*).

Brundtland report on sustainability was prepared by WCED which concluded that it was only due to the manifestation of the judicious use of environmental resources that a nation can achieve its target of the specified economic status (*Fennel and Dowling 2003*). The world conservation strategy was established and presented to people that was based on the sustainability report prepared by the Brundtland Commission along with WCED (*Fig.8*).

## Threat to Wildlife

Wildlife is at greater threat due to adventure tourism. Such activities are creating havoc in their environment by significantly altering their habitats. Examples of hunting are not new to us where man is brutally killing wild animals for his selfish motives let it be for tusks, skin or other kinds (*Fig.9*). As *Coltman (1989)* states that whenever there is a mass influx of tourists at a particular place it tends to disturb the natural environment of that region. This can also lead to extravagant deforestation which would in turn lead to soil erosion thus, ruining the natural beauty of that region. This would disturb the entire vegetation of that place. The influx of population in any region brings along a lot of demands such as demand for drinking water, accommodation and so on. The result is sewage litter, release of waste from fuel engines, polluting lakes and rivers which would directly impact the flora and fauna of this typical region. Fuel engines in water crafts will adversely affect the population of sea creatures and fishing and hunting will drastically disturb the ecological balance of that place (*Fig. 10*). Disturbance can be of various forms let it be visual, noise or immoral behaviour (*Chitrakar 2009*). Human communities developing in the wilderness can cause animals attacking the humans. (*Eagles, McCool and Haynes 2002*).



**Fig.9:** Hunting is brutally killing wild animals for his selfish motives let it be for tusks, skin



**Fig. 10:** Negative impacts on Wildlife



*Acid rain  
destroys fish  
life in lakes &  
streams.*

### Ecotourism: A solution

Ecotourism refers to that form of tourism which involves the green alternatives that is a form that deals with providing tourist services but considering the green phenomenon of conservation of natural resources alongside. Thus, the concept of encouraging tourism can be viewed as the consciousness to maintain the right structure of ecology and maintaining a balance in environment. Many people have tried to differentiate the two but it was, (Nagle 1999), which stated that ecotourism can be viewed as that kind of tourism which continues without damaging the environment and also invites the local communities to participate in developing measures for tourism in order to preserve their natural heritage.

Patterson (2002) mentioned certain characteristics for ecotourism business:

- Guidance for tourists in visiting the spots of attraction.
- Involvement of highly recreational yet low impact techniques.
- Local elites can be highly benefited to look for a source of income.
- Involvement of the local communities would help provide the local touch of the place and getting to learn an entirely new environment.
- A boost to the efforts of organizations involved for the conservation of nature.

- Setting a limit to the number of visitors in order to avoid rush.
- Privacy of the local elites must be respected and maintained.
- Guides a boon for this industry as they provide the natural history and environment of that place.
- To ensure not to disturb the wild life and Biodiversity of that region.

Sustainable tourism must ensure that the trip must be meaningful and should be worthy experience and must spread awareness about sustainability (WTO, 2001).

Harris et al. (2002) devised five major principles that must be the guidelines for developing any sustainable tourism namely: It must be a form of sustainable tourism that must not compromise with the basic foundation of the attraction of that spot but with keeping conservation as its objective; It must encourage participation of the local community to maintain its touch of ancient heritage; It should be awareness based tourism trip which should also take care of the services provided to the tourists as appropriate.

Although, the tourism industry will never be hundred per cent sustainable but still the guideline builders must make it in accordance with the norms of



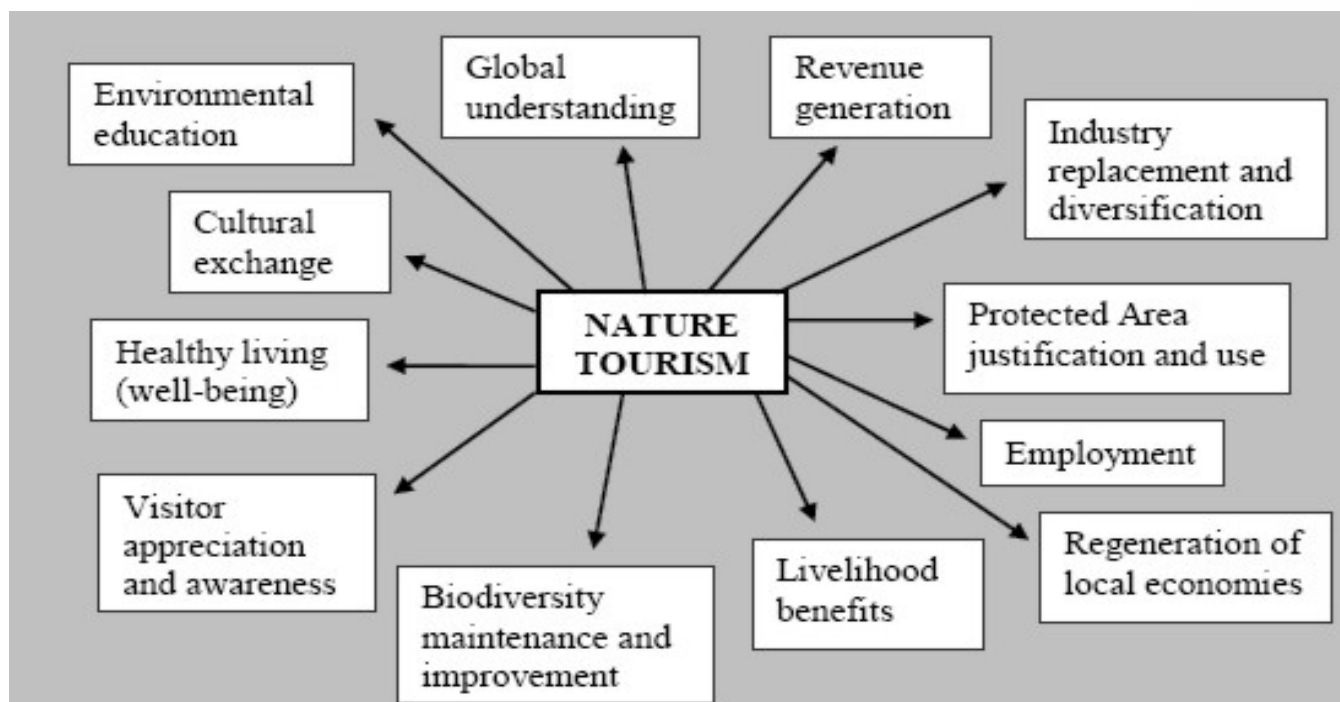


Fig.11: Components of Nature Tourism

sustainability. The impact on environment can be classified into three categories namely:

- Natural
- man-made
- cultural.

The influx of population in a serene region destroys its flora and fauna and disturbs the environment. India has a number of spots and sights for attraction of tourism such as hunting spots, national parks, wildlife sanctuaries etc. But now due to huge amount of visitations, the wild animals tend to evacuate from these places as well (Bista 2006).

Keeping in view all these adversities, a lot of new measures and indicators are in the process of development and implementation to manage the deteriorating environment and maintain sustainability (Fig.11). World Tourism Organisation has assessed and developed certain criteria and set some rules for tourism to be conducted (Collins, 1998; Schianetz, Kavanagh & Lockington, 2007; Twinning-Ward & Butler, 2002; WTO, 2004). Many researches were developed with their ideologies of developing a par-

defined manner of tourism which include Environmental Audit and Logical Footprint (Ding & Pigram, 1995; Hunter & Shaw, 2005; Schianetz et al., 2007). The Environmental Impact Assessment (Ding & Pigram, 1995), Visitor Impact Management and Tourism Impact Management (McCool & Lime, 2001; Moore et al., 2003; Newsome et al., 2002), survey based methods such as Delphi techniques (Green, Hunter and Moore, 1990), and finally, Multi Criteria Analysis regarding the effects of tourism on environment (Schianetz et al., 2007).

### Protected Areas

One way to overcome the deteriorating environment is to build protected areas. Protected areas are tourist spots which are rich in biodiversity, have an extravagant green cover of the ecosystem and fulfil the growing demands of outdoor activities (Chitrakar 2009). Construction of protection areas and conserving the natural environment to attract maximum tourists is a challenging task. As the business of nature conservation is expensive, large amount of capital in the form of revenue is needed to be generated (Fig.12).



It is the ecotourism that builds the consciousness of environment in the minds of the tourists. The progress in the concept of eco-tourism can be well realized by considering the increasing number of ecotourists. This seems to be a great opportunity for the developing nations as ecotourism can bring a great amount of economic boost. Ecotourism has also shown a way to countries to focus on their tourism industry and thus, on sustainable development with a wider prospective rather than investing in the industrial production.

A nation's development is majorly defined by its resources. Also, the concept of sustainable development is greatly rational and feasible in order to protect our heritage and riches bestowed to us by the nature so that our future generations must also extract benefit out of it and experience the wonderful bounties we are endowed with.

Developing the tourism industry of a nation would not only help in the growth of the economic, cultural and social aspects of the nation but will also conserve the natural environment.

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INTERNATIONAL DAY  
FOR BIOLOGICAL DIVERSITY  
Biodiversity and Sustainable Tourism

## Tourism Economic Impact

9.8% Global GDP

Tourism employs **7x** more than the automotive industry

9.5% contribution to total employment in the World

775 bn \$ total investment worldwide



## Sustainable Tourism

Contributes directly to the conservation of sensitive areas and habitats, with government revenues and funds



Increases public appreciation and aids awareness-raising of important issues, as well as, encourages sustainable consumption



Contributes to environmental protection, conservation, and restoration of biodiversity

