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## ECO-TOURISM IN THE SUNDARBANS, WEST BENGAL, INDIA

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### Abstract:

*Eco-tourism is a very recent concept of simultaneous development of economy of the people and preservation of ecosystem of a particular area. The only livelihood of the indigenous people had been forest products and wildlife animals. Besides, reckless and random economic development with complete disregard to ecosystem of each area has caused irreparable damage to the ecological balance. Hence eco-tourism is the perfect way to fulfill the dual purpose of improving economic development and the preservation of ecological balance. Thus to create the awareness about preservation and conservation of the ecosystems and natural areas as well as to open up new avenues for employment opportunities for local people micro level study of different area is very essential and for this purpose here the Sundarbans area of West Bengal is selected. This work based on both primary as well as secondary data. The sundarbans represents a charming misty. Every year innumerable people visit this unique forest. But most of them do not have any sound knowledge about ecotourism. Their actions often harm the environment in many different ways. However, the Sunderbans faces the impending threat of being completely destroyed due to the ravaging effects of climate change. The indicators of this have been seen in increased temperatures of surrounding water bodies, altered course of rivers, sudden and erratic rise in water levels, inundated islands and so on. This has resulted in the destruction of crops and living space, setback in conservation efforts and other irreparable damage to the ecosystem. As a result, we face the grave challenge of saving the ecologically rich heritage of the Sunderbans. The time to act is now. One way to handle such problems is to regulate tourist's visits to each place. Restrictions can be imposed on the number of tourists, and on how they undertake their visit, before a site becomes overcrowded. Without controls, it is obvious that the more tourists visit a place, the more its ecological balance may be threatened or degraded. However, we do not restrict tourism. If we can apply the principles of sustainable development, tourism could be encouraged to grow. More forests could be declared as sanctuaries for tigers, deer, elephants and crocodiles to attract more tourists. The present study critically analyses the ecotourism initiatives in Sundarban from its Strengths, problems, and associated remedial measures.*

### KEY WORDS:

Eco-Tourism , ecosystem , ecological balance.

### INTRODUCTION

Eco-tourism is a very recent concept of simultaneous development of economy of the people and preservation of ecosystem of a particular area. The only livelihood of the indigenous people had been forest products and wildlife animals. Besides, reckless and random economic development with complete disregard to ecosystem of each area has caused irreparable damage to the ecological balance. However, variation laws imposing restriction and prohibitions have been promulgated to protect forests and wildlife.

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But the processing need for the economic progress for the natures of these forest regions cannot be ignored. The growing attraction for scenic beauty of nature and of wildlife animals and the quest for research and development have opened a new avenue for tour and travels. Presently tourism has taken a dimension of separate kind of industry. If this industry covered the developed with due respect and care to the ecological system for its preservation and sustenance. This will go a long way in improving the economic condition of the people. Therefore the idea of eco-tourism has taken a pragmatic shape.

Hopefully, due attention is being given to this concept of eco-tourism for the dual purpose of improving economic development and the preservation of ecological balance. As a result, the UNO declared the year 2002 the year Eco-tourism.

Defining "Ecotourism" has proven to be a difficult task given all the different players attempting to define it. People tend to define things in terms that are beneficial to themselves, hence the variety of definitions. There are however several workable definitions currently in wide use.

The International Ecotourism Society defines Ecotourism as: "responsible travel to natural areas that conserves the environment and improves the welfare of local people".

The Australian Commission on National Ecotourism Strategy calls it: "nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable".

### PRINCIPLES OF ECOTOURISM:

Ecotourism is about uniting conservation, communities, and sustainable travel. This means that those who implement and participate in ecotourism activities should follow the following ecotourism principles:

- 1.Minimize impact.
- 2.Build environmental and cultural awareness and respect.
- 3.Provide positive experiences for both visitors and hosts.
- 4.Provide direct financial benefits for conservation.
- 5.Provide financial benefits and empowerment for local people.
- 6.Raise sensitivity to host countries' political, environmental, and social climate.

### FACTORS AFFECTING ECO-TOURISM

- 1.Existence of National Park / Sanctuary / natural environment as a prime, star attraction.
- 2.Should be ecologically, socially, culturally and economically sustainable.
- 3.Should have participation of the local stake-holders (host community).
- 4.Should be a low profile venture.
- 5.Should be capable of dovetailing in the existing tourism of the State.

In India, the tourism industry has lapped the opportunity to showcase its natural wealth to national and international audience. Sundarban, home of the Royal Bengal Tiger, is the ideal destination for nature loving tourists. Sundarban is the largest intertidal area of approximately 26000 sq. kms formed by the meeting of two great river systems, Ganges and Brahmaputra with the Bay of Bengal along India and Bangladesh. It is the largest delta in the world and harbours the largest chunk of mangrove vegetation on earth. The Sunderbans gets its name due to the abundant presence of the 'Sundari' trees. The region is famed for its rich biological diversity, the prime attraction being the expansive mangrove forests; the ecosystem is one of a kind the world over. The Sunderbans consists of an intricate network of tidal waterways, marshy patches, mudflats and numerous islands.

### OBJECTIVE

**The objectives of eco-tourism are:**

- 1.to preserve ecosystems and natural areas (usually already within protected areas) with a high tourism potential;
- 2.to evaluate the challenges facing ecotourism today
- 3.to cultivate environmental consciousness among the local population by educating them about the dangers of overexploiting resources and unrestricted number of tourists;
- 4.to promote new economic incentives, e.g. selling of local (environmentally safe) products, crafts, and

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cultivated medicinal plants thereby create some entrepreneurial skills;  
5.to establish goals and benchmarks for the coming years.  
6.to sensitize the tourists about conservation of nature and natural resources.

### STUDY AREA

The study was conducted in the Indian part of Sundarban. Sundarban is the largest prograding delta on this planet formed at the estuaries phase of the Ganges-Brahmaputra river system. The Indian Sundarbans (Latitude 21° 30'-22° 40'N, Longitude 88° 20'-89°0'E) in the north east coast of India occupy 9630 square kilometer and are bounded by River Hooghly in the West, River Raimangal in the East, Bay of Bengal in the South and Dampier Hodges line in the North. There are 56 islands of various sizes and shapes in Sundarbans and these are separated from each other by a network of tidal channels, inlets and creeks, some of which act as pathways for both freshwater discharge from upland and to and from movement of flood and ebb.



The extent of mangrove reserve forest in Sundarban is around 4260 sq. km, out of which 55 % is under land vegetation cover & balance 45 % is under water body / inter tidal zone. Nearly 40 % of the reserve forest area has been brought under Protected Area networks (PA) as follows:

- 1.Area of Sundarban National Park : 1330 sq.km.
- 2.Area of Sajnekhali Wildlife Sanctuary : 362 sq.km.
- 3.Area of Lothian Wildlife Sanctuary : 38 sq.km
- 4.Area of Haliday Wildlife Sanctuary : 6 sq.km.

Sundarban is spread across both South and North 24 Parganas over 14 blocks of these two districts. These are as follows-



Sandeshkhali I  
Sandeshkhali II  
District: South 24 Parganas  
Kultali  
Canning I  
Basanti  
Gosaba  
Sagar  
Kakdwip  
Namkhana  
Patharpratima  
Mathurapur II  
Jaynagar II

#### **DATA BASE AND METHODOLOGY**

The study is based on both primary and secondary sources of data. Primary sources are – survey, Interview with the respondents. The secondary sources are – Published documents from District planning and Development Office, Forest Office, Statistical Data and Internet.

#### **RESULT & DISCUSSION**

##### **Infrastructure**

The basic requirement for any tourism destination is proper infrastructure. Records from the hotels, lodges and guest houses revealed that even during the peak season the occupancy rate is slightly more than 80% which shows the basic infrastructure for lodging is adequate in Sundarban. Apart from these, there are tour packages where the stay is entirely on the boats or launches.

Only a few tourists responded that the toilet facilities need improvement in a few of the hotels and lodges in terms of bathing water.

##### **Ecosystem**

The Sundarbans is a unique ecosystem. Its exceptional scenic beauty and rich wildlife can be source of attraction to different levels of people and is convenient for outdoor recreation. So, maintenance of healthy ecosystem for Sundarban is of paramount importance. Rise in the sea level has taken, causing a rise in salinity. As a result the low salinity tolerant mangrove species have gradually dwindled in number. Only the high salinity tolerant species are surviving well. Rise in salinity has also resulted in a drop in the

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fresh water table. The Forest department is taking adequate measures by digging up pot holes so that wild animals can get drinking water. Moreover, driven by poverty more than 2 lakh people resort to tiger prawn seed collection which is very harmful for the natural regeneration of the mangroves as it destroys the mangrove seeds along with other species. All these are responsible for putting the Sundarban ecosystem under threat.

### **Livelihood generation of the local people**

About 50 to 60 thousand people work regularly and continuously for about six months, while the number of people entering the forest in a year can be as high as 3.5 million for minor forest product collection and fishing. Tourism is a seasonal activity in Sundarban. As a result the local communities cannot solely depend on tourism as the only livelihood option. The income from tourism for the local people is mostly from working as cooks and guides. Apart from this, local people also get 25% of the revenue collected from tourists as the entry fees to the National Park. Survey revealed that only a small percentage of the local people are involved in tourism related activities. The income generation from tourism for the local people is also very small.

### **Enabling environment for ecotourism promotion**

For proper development and management of ecotourism conducive environment is require. For that the most important requirement is the local people's participation in bigger number and ensuring that the income generated from this region stays within the community. At present, there are proper guidelines for ecotourism in accordance with the National Ecotourism Policy and Guidelines (1998). But local participation in tourism is a small percentage and only a small percentage of the total income generated from tourists actually percolates into the local community.

### **Tourists' satisfaction**

The success of any tourist destination lies in the satisfaction of the tourist after visiting the place. This is manifested in the number of tourists visiting the place, their feedback, duration of stay as well as their desire to make repeat visits. The number of tourists visiting Sundarban is increasing on year basis. However, most of the tourists are not satisfied since tiger sightings in the wild are rare and destinations are over-crowded. As a result they did not want to make a repeat visit to Sundarban.

### **Endangered Sundarbans**

1. Sea level rise & Global warming: A serious concern of modern mankind and its environs specially in coast-bound countries is the rising sea level accentuated by global warming. India is amongst 27 countries that are most vulnerable to sea level rise caused by global warming. One meter rise of sea level is expected to inundate about 1000 sq km area of the Sundarban deltas. Nearly half of the 102 Sundarban islands in India spreading over 9.5 sq km area are uninhabited due to an abnormal rise in the sea level and massive erosion in the last four decades. About a fifth of the southern part of this delta complex, the heart of the Tiger Reserve, is already submerged. At the current rate of erosion a loss of 15% of farmlands and >250 sq km of the National Park in the next two decades is expected. Agricultural yield too has been falling because of rising salinity of the water and soil. The Sagar Island is being submerged by the rising sea. The Bedford and Lohachara islands are vanishing and have already displaced thousand of climatic refugees who reclaimed mangrove forest following ruthless deforestation. Growing list of rare and highly endangered floral and faunal species of Sundarbans is attributable to these effects. A 2007 report by UNESCO, "Case Studies on Climate Change and World Heritage" has stated that an anthropogenic 45-cm rise in sea level (likely by the end of the 21st Century, according to the Intergovernmental Panel on Climate Change), combined with other forms of anthropogenic stress on the Sundarbans, could lead to the destruction of 75% of the Sundarbans mangroves.





**Exposed mangrove roots as sign of beach erosion and retreating mangrove line, Bakkhali**

1. Growing human population and cross-border migration.
2. Growing livestock population.
3. Conflicts over ecospace gain - Growing shortage of wildlife ecospace in Sundarbans is due to spread in anthropological activities. During the last 15 years 111 persons (male 83, female 28) became victims of animal attacks, viz, tiger (82%), crocodile (10.8%) and shark (7.2%) of which 73.9% died. About 94.5% cases the conflict took place in and around the Sundarban Reserve Forest during livelihood activities.
4. Encroachment of land and water.
5. Grazing deep in to wildlife habitats- As the mangrove forest of Sundarbans Tiger Reserve is bounded all through its periphery by streams and creeks, there is no problem of cattle grazing within the reserve.
6. Poaching of fauna and flora
7. Extinct Species: Hog deer (*Axis porcinus*), water buffalo (*Bubalus bubalis*), swamp deer (*Cervus duvauceli*), Javan rhinoceros (*Rhinoceros sondaicus*), single horned rhinoceros (*Rhinoceros unicornis*) and the mugger crocodile (*Crocodylus palustris*) have become extinct in the Sundarbans at the beginning of the last century.
8. Endangered Species: Two amphibians, 14 reptiles, 25 aves and five mammals are presently endangered. The endangered species that lives within the Sundarbans are Royal Bengal Tiger, estuarine crocodile, river terrapin (*Batagur baska*), olive ridley turtle, Gangetic dolphin, ground turtle, hawks bill turtle and King crab (Horse shoe). Two amphibians, 14 reptiles, 25 aves and five mammals are presently endangered. The endangered species that lives within the Sundarbans are Royal Bengal Tiger, estuarine crocodile, river terrapin (*Batagur baska*), olive ridley turtle, Gangetic dolphin, ground turtle, hawks bill turtle and King crab (Horse shoe).

**Faunal Diversity Extinct Species in Sundarban:**

Faunal Diversity in Sundarban	Species that gone extinct in the last hundred years with human invasion
Vertebrate Species = 481	Javan Rhino
Hemichordate Species = 1	Wild Buffalo
Invertebrate Species = 1104	Barking Deer
Protozoan Species = 106	Swamp Deer
Mammals = 58	
Birds = 248	
Reptiles = 54	

**Source-(census data)**

Year wise Population of Tigers:



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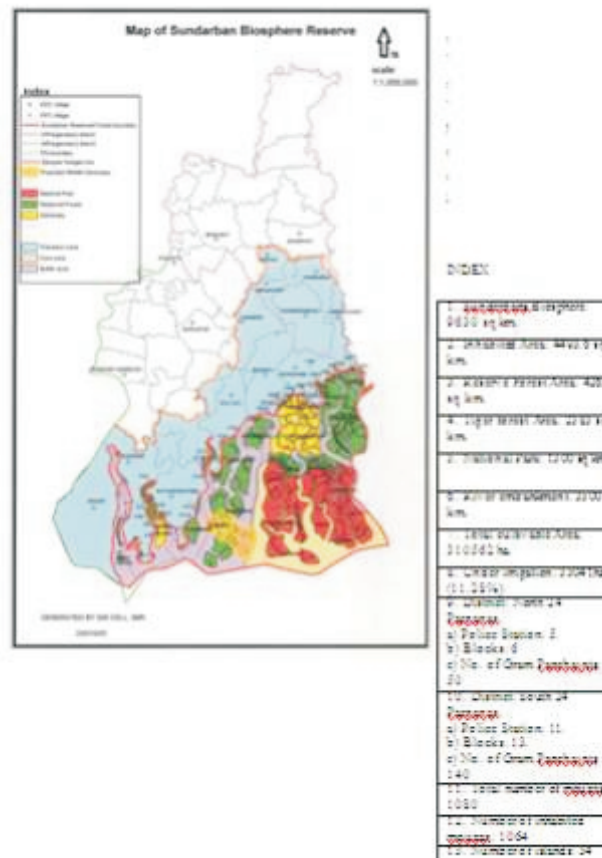
Year	Species	Population
1992	Tiger	251
1995	Tiger	242
1997	Tiger	256-270

Source-(census data)

Earlier, the WLII set the figure at 64, while the state forest departments used to claim that there were 274 tigers in the Sundarbans and the tiger population was ever increasing. It is neither 274, nor 64, the exact number of tigers in the Sundarbans is 90. Recently, the Wild Life Institute of India (WLII) has informed this to the state forest department. (source – Times of India)

**There is immense potentiality of the Sundarbans for earning through tourism. Eco tourism spots in this World Heritage site can easily attract the tourist from everywhere. Some of these sites are as following:**

- 1.Katka is an eye catching and Quiet Island located in the north-west part of Sundarbans. Katka is an excellent and favourable spot, where visitors can enjoy bird watching, wildlife especially Royal Bengal Tiger and deer, roaming around by country boat through small creeks and canals and also by walking through the forest. One can also enjoy swimming and sun bathing at Katka's desolate white sand beach.
- 2.Kachikhali is a roaming and breeding ground for the Royal Bengal Tiger and is also known as "Tiger Point". There is a Forest Department resort, which is used by the tourists. Visitors spend their time by walking around the tiger point, Katka-Kachikhali beach and visiting the Egg Island or Dimer Char, a small island close to Kachikhali.
- 3.Nilkamal is a beautiful place along the Bay of Bengal. The World Heritage plaque was unveiled at Hiron Point of Nilkamal. The combined beauty of sea and green mangroves Nilkamal must attract visitors from the watchtower of Keorasuthi another attractive spot there. Thousands of spotted deer, birds and sometimes a Royal Bengal Tiger can be seen from the tower.
- 4.Dublar Char is an island famous for drying fish during the month of November-February in the winter season. This place is also famous for religious festival of Hindu community popularly known as "Rashmela" that takes place at the end of November. Visitors come here to see the life of fisherman and their unique fish drying. These dry fish or 'sutki' is exported to domestic and foreign markets as a delicacy.
- 5.Tiger Reserve: The prime tourist attraction of Sunderbans is its tiger reserve, where the great Royal Bengal Tigers are sheltered. There, nature lovers can catch a glimpse of the day-to-day activities of these tigers, from a distance.\
- 6.Bhagabatpur Crocodile Project: Bhagabatpur Crocodile Project is a hatchery and a sanctuary of Sunderbans. The biggest estuarine crocodiles can be found here, which is the highlighting feature of this tourist attraction.
- 7.Netidhopani: Netidhopani is beautified by the mangroves of Sunderbans and the amazing wildlife. Netidhopani is famous for the ruins of a 400-year-old temple, which attracts tourists coming to Sunderbans.
- 8.Halliday Island: Located south of Sunderbans Tiger Reserve, Halliday Island is thronged by tourists, every year. The last retreat of the Barking Deer can be found here.
- 9.Piyali: Travelers on their way to Sunderbans can stop at Piyali, a beautiful small town, and explore the lifestyle of its inhabitants. It is the best place to chill out, when you are on your way to explore the rich, dense forest of Sunderbans.
- 10.Kanak: Kanak is a safe haven for Olive Ridley Turtles, which thrive in its shallow waters and beaches. These turtles, during their breeding season, approach the beaches of Kanak, from distant places located around Sunderbans.



**International status of Sunderbans**

Sunderban National Park in India is a World Heritage Site (Well protected by Reserved Forest as Buffer all around) declared by UNESCO in 1987  
 Sunderban region in India is a Global Biosphere Reserve, recognized by UNESCO in 2001  
 Indian Sunderban has been selected for inclusion as Ramsar Site  
 Sunderban Tiger Reserve (1973) is part of Project Tiger of GOI

**Sundarban Eco-development in progress:**

1. Excavation of rain water irrigation channel to increase agricultural production.
2. Provision of pisciculture ponds in the buffer area managed by village co-operative for prawns and sweet water fish.
3. Provision of Solar lights in the villages
4. Provision of smokeless chullahs and alternative fuel to save wood consumption.
5. Raising mangrove plantations on the periphery to meet local fuel wood demand.

**Threats:**

1. Migration of extremely poor landless people to Kolkata in search of job opportunities.
2. Potential negative environmental impacts (damage to mangrove vegetation due to rise in salinity, loss of species due to tiger shrimp cultivation etc)
3. Pollution by sewage, dumping of the wastes in river.
4. Increase in biotic pressure due to increase in mass tourism.
5. Lack of proper management causing negative impact on this fragile ecosystem.
6. Tourists' dissatisfaction after visiting this place.

## FINDINGS AND CONCLUSION

Now days around the world, eco-tourism is very popular. Sunderban can be a major site for eco-tourism. In the same context, the deterioration of the Sunderbans has drawn concern from all corners. Being the largest mangrove forest ecosystem in the world, the Sunderbans is home to an exquisite and enormous number of species, including the Royal Bengal Tiger and the Gangetic River Dolphin. The Sunderbans spreads over a large area, a portion of which lies in Bangladesh, while the rest lies in India.

However, we've made certain compromises with our environment. In our quest for greater economic returns, we have ended up jeopardizing the future of our environment and surroundings. Today, our world is plagued with more problems than before. Instead of achieving an ecologically sustainable growth, we have, instead, ended up bargaining environmental well-being for economic growth. The sundarbans represents a charming misty. Every year innumerable people visit this unique forest. But most of them do not have any sound knowledge about eco-tourism. Their actions often harm the environment in many different ways. Sound pollution is one of them. Many visitors like to enjoy music very loudly, which can be upsetting to the quiet and serene environment. The development of eco-tourism in the Sunderbans should be given top priority both by the Forest Department and the Sunderbans Biodiversity Conservation Project.

However, the Sunderbans faces the impending threat of being completely destroyed due to the ravaging effects of climate change. The indicators of this have been seen in increased temperatures of surrounding water bodies, altered course of rivers, sudden and erratic rise in water levels, inundated islands and so on. This has resulted in the destruction of crops and living space, setback in conservation efforts and other irreparable damage to the ecosystem. As a result, we face the grave challenge of saving the ecologically rich heritage of the Sunderbans.

### Sundarbans Ecotourism: Current Status and Challenges

- 1.Many of the natural areas of sundarbans remain under threat; there has been a further loss of biodiversity and resources for conservation remain inadequate.
- 2.Climate change has increasingly become a major threat affecting the very resources on which ecotourism depends – natural areas and local and Indigenous communities around the world. This has helped raise awareness of the contribution of current and future tourism operations and services to global climate change.
- 3.The role of tourism in supporting sustainable development and the achievement of the Millennium Development Goals, notably the alleviation of poverty, has become recognized as a critical industry responsibility.
- 4.Ecotourism has articulated the core principles of sustainability in the travel and tourism industry and therefore plays a leading role within the industry as a whole.
- 5.Interest in visiting natural areas, experiencing authentic local living, and observing wildlife has continued to grow, bringing opportunities but also pressures, and the increasing need for best practice management.
- 6.More governments have developed ecotourism strategies, but not all have been well integrated into mainstream tourism and environmental policies, or supported by action.
7. Increasing numbers of projects around the world have striven to establish ecotourism enterprises as a means of enhancing sustainable livelihoods and contributing to conservation, yet many remain economically fragile and lack adequate access to markets.
- 8.Stronger leadership and strategies are needed in order to maintain sustainability.
- 9.The ecotourism community is expected to be more inclusive of innovative and socially equitable approaches. This innovative approach must include the active mobilization of Indigenous communities, women, and local professionals and designers as recognized and equal business and sustainable development leaders.

The time to act is now. It's late to trace back our steps, but it's not too late to mend our ways. We must alter our lifestyles if we seek to change the destiny of the Sunderbans. Who can save the Sunderbans? All of us. Who will save the Sunderbans? We, the future generation. We, the citizens of tomorrow who shall inherit a bright future, and seek to pass on a rich legacy to the coming generations. We have to mend our erroneous ways if we seek to inhabit this planet in the future. The required success at the individual level can be achieved by following a more sustainable lifestyle. If each of us reduces the environmental impact of our daily activities to a level that cumulatively comes well below the Earth's carrying capacity, then we would have succeeding in preserving our limited stock of natural resources. As far as conserving the Sunderbans goes, we must understand that a number of measures can be undertaken.

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1. First of all, the people of that particular region need to be sensitized about the issue. Like each farmer needs to understand that unsustainable agricultural practices will only aggravate the condition. Similarly, fishermen need to be taught ecologically sound methods of aquaculture.
2. Apart from scientific methods, they need to re-discover and adopt all those indigenous methods that focus of co-existence of man and nature. These include fishing for limited stocks of fish, sowing seeds of native species in order to avoid toxic release by exotic species, letting cattle graze in selected areas, not cutting mangroves for firewood, not hunting tigers or dolphins etc. The Information Technology boon must be utilized to spread increased awareness regarding the issue.
3. Online essay and brochure designing contests must be held so that children are exposed to the perils faced by the Sunderbans.
4. Social networking sites must feature regular advertisements or banners that proclaim the message of saving the Sunderbans.
5. Non-profit Internet sites that accept voluntary donations must also be initiated, under the surveillance of an international authority on environmental issues. Similarly, an online kiosk must be created, which provides enchanting facts about the region and gives links to various volunteer programmes under NGOs. This will ensure active participation of the people from all over the globe, and will result in a whole-hearted effort to save the Sunderbans.
6. Apart from this, efforts in India must be directed towards making the international community aware of the perils faced by the Sunderbans. This includes promotion of scientific study, campaigns and eco-tourism trips in the region.
7. The only way to visit the Sunderbans is by water transport. Adequate water transport and accommodation facilities inside the forests are to be created to attract local and foreign tourists.

Indian government is now trying to promote eco tourism in the Sunderbans. The government has created a forest management plan and eco-tourism plan. Through eco-tourism, the government is planning to raise people's conscious at the same time making money for forest development. Also, NGOs and other governmental bodies must join hands and undertake joint ventures like petitions and peace marches in order to spread awareness about the fragile condition of the Sunderbans, and also to secure effective change in local governmental policies that are found to be inconsistent with the goal of preserving the Sunderbans. Similarly, effective legislative measures should be undertaken by India in ensuring that there is no excessive populace residing in that region. Also, regular patrols and checks must be conducted to ensure that all rules are being implemented appropriately. Neighbouring nations must also contribute in whichever way they can, be it sending funds for research activity or sharing some new, innovative technical design which aims at environmental conservation.

One way to handle such problems is to regulate tourists visits to each place. Restrictions can be imposed on the number of tourists, and on how they undertake their visit, before a site becomes overcrowded. Without controls, it is obvious that the more tourists visit a place, the more its ecological balance may be threatened or degraded. However, we do not restrict tourism. If we can apply the principles of sustainable development, tourism could be encouraged to grow. More forests could be declared as sanctuaries for tigers, deer, elephants and crocodiles to attract more tourists.

What we must remember is that we, as a global community, share the same planet. Thus, there is no such problem that affects only a certain segment of the world. An environmental hazard on one corner of the world can prove to be fatal for the entire global community. Therefore, we all must work together in order to secure a better future for all.

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