

# Prospects of Eco-tourism in the Sundarbans of Bangladesh

A dissertation by  
Ripon Kumer Bhadra  
MAGD 8<sup>th</sup> Batch  
ID: 17172003

**Approved as to style and content by**

Professor Dr. Md. Nazrul Islam  
Khulna University, Khulna

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## DECLARATION

In accordance with the requirements of the degree of Master in Governance and Development in the Institute of Governance Studies, I hereby declare that the work submitted in this dissertation is own and based on the results found by the field survey.

I hereby declare that materials of works are used from other researcher that is mentioned in reference.

It is hereby declared that this dissertation or any part of it has not been submitted elsewhere for the award of any degree or diploma.



Ripon Kumer Bhadra

ID: 17172003

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## ABSTRACT

Tourism is an emerging sector for Bangladesh. It is one of the most growing industries all over the world which can play a significant role for the development of Bangladesh economy that generates foreign currency. Eco-tourism is a new form of tourism that has developed very fast in the last few years. It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and their habitats, as well as cultural artifacts from the locality. It is understood as potential management tool for conserving the Sundarbans mangrove ecosystem. This paper represents the key issues of the current tourism practices in the Sundarbans mangrove forest.

The theoretical part of this thesis acknowledge about many aspects of the largest mangrove forest of the world that is very famous for unique ecosystem, river networks, with magnificent scenic beauty and natural resources for its wide biodiversity of mangrove flora and fauna both on land and water. The aim of this paper is to reveal the problems and prospects of ecotourism and to critically investigate ecotourism's relationship to sustainable development in Sundarbans. It is tried to highlight the special attractive tourist spots of Sundarbans. In Sundarbans eco-tourism has been identified as a tool to promote environmental awareness and education and for the pleasure of nature for both international and domestic tourists.

Ecotourism supports in community development by providing the alternative source of livelihood to local community which is more sustainable. The promotional activity of ecotourism in Sundarbans should be enhanced for disseminating biodiversity conservation, climate change mitigation and adaptation, environment and wildlife in social media, electronic and print media. In the empirical part, the author has cited many valuable development ideas and suggestions which has come out from the experience of visitors.

This paper suggests that ecotourism can be a means to attain sustainability in the Sundarbans reserve forest as well as protecting the world heritage sites. Well-developed tourism plan could provide economic and political incentives for proper management and conservation that could bring benefit to local communities and national economies. The paper

also focuses on how to minimize the impact of tourist intervention in the reserve forest through creating awareness to the all levels of stakeholder. The study concludes that the government of Bangladesh should take an integrated strategic plan with sound ecotourism policy with strengthening technical and financial capacities of stakeholders as well as awareness program. Further research on the policy integration, community participation, enterprise development and imposing of conservation tax for ecotourism will unveil more useful management possibilities for ecotourism in the Sundarbans.

## Approval

The dissertation titled “Prospects of Eco-tourism in the Sundarbans of Bangladesh” submitted by Ripon Kumar Bhadra, ID-17172003, MAGD, Batch-8, has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Master of Arts in Governance and Development (MAGD).



Supervisor:

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Professor Dr. Md. Nazrul Islam  
Khulna University

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# INTRODUCTION

## 1.1 Background of the study

Bangladesh is full of natural endowment and beauties. A portion of her parts are secured by Hills and some different parts by the waterways. It has the longest sea shore of the world, the Sundarbans mangrove timberland with incredible biodiversity. Sundarbans is the world biggest mangrove woodland on the planet. The woodland spread a zone of 6017km square, of which 4143km square are landmass and staying 1874km square are submerged bodies in types of waterways, trenches and brooks (Rahman & Asaduzzaman, 2010). The zones 99% secured by the regions of Sathkhira, Khulna and Bagerhat while different zones are in Patuakhali and Barguna regions. The region is spread across Bangladesh and India where 60% exists in the Southern Bangladeshi outskirts and the staying 40% in India (Rahman & Asaduzzaman, 2010). A wide biodiversity offers open doors for generous development, despite the fact that achievement relies upon the powerful commercial center worth, nature of the created items and the foundation of important network private–public associations (Haque *et al.* 2016). Nowadays, environment friendly as well as knowledge-orientated tourism such as nature based tourism, adventure tourism, and cultural tourism has excellent prospects worldwide with improving educational levels where the sightseers are known for their unobtrusive desire in terms of facilities, amenities, service and relaxation (Nevard and Neverd, 2014). The tourism industry in Bangladesh is certifiably not a completely prospered in terms of development. As of late, with the steady advancement of infrastructure facilities and expanding exposition, Bangladesh is quick rising as an enticing place of tourist spot (Alam *et al.* 2010). Furthermore, tourists are prepared to visit these spots and ready to pay. Yet, there are a few issues to this market part. If proper policy can be taken and strategy can be formulated, tourism will likewise get one of the expected sectors to gain foreign currency and add to the economy. Natural freshness ought to be ensured with beauty and facilities ought to be improved for the sightseers that mesmerize them (Hassan *et al.* 2013). The possibility of ecotourism in Sundarbans has been investigated at different tourist places for attracting the sightseers from different regions of the world and the probable economic aspect is additionally depicted in this paper.

Nature based ecotourism that combines ecology and tourism together characterized as earth mindful travel to natural zones, so as to appreciate nature and going with social and cultural aspect, over a significant time span that enhance conservation, have a low tourists affect and provide financial contribution of neighborhood people groups (Alam et al. 2010). Ecotourism is known as a successful concept for making the forest resources and its biodiversity more sustainable. It ensures not only protection but also creates earning opportunities. Conservation process can be played in two different ways: one by keeping intact, and some place by improving, the current forest assets to attract the travelers and besides by including the helpless woodland tenants, who were eliminating trees and other non-timber items for their livings, in various income creating opportunities inside the ecotourism zone (Alam et al. 2010).

Developing the ecotourism sites in Sundarbans will be a great opportunity for earning among the local community, especially for the pro-poor group who are dependent on the natural resources. That will also help to reduce the over exploitation of the natural resources by local community (Iftekhar and Islam, 2004). The resources of the Sundarbans reserve forest have great potential to encourage and develop ecotourism with the involvement of local community located at the vicinity of the forest that have direct interests on the forest (Banerjee, 2014). In turn, the natural and environmental importance of this venue will attract many local and international tourists (Assakeret *al.* 2014). The local poor people can be engaged in different activities, which enable them to earn money and to build environmental awareness to promote the conservation of natural resources (Haque *et al.* 2016).

In 1997, UNESCO declared the Sundarbans a world heritage site in order to protect the unique natural resources, plants, biodiversity and the existing ecosystem (UNESCO, 2017). Nearly 3 million individuals directly or indirectly dependent on the forest. This region provides livelihoods for the local community living in small villages surrounding the area. Here some dangerous work exercises in specific seasons comprise of cultivating tiger prawn seeds in the waters, fishing, gathering nectar, and slicing wood to give some examples (UNESCO, 2017). It is the most extravagant natural surroundings in the lower Bengal Basin for an assortment of faunal animal categories, the last fortress of the Royal Bengal Tiger(Kenny, 2017).The Sundarbans represent the vivid tapestry of Bangladeshi culture and regarded as an UNESCO World Heritage Site for its biological significance and social incentive to South Asia. Ancient community users, for example, fisherman, nectar gatherers

and woodsmen have worked the land for quite a long time and convey with them bountiful generational information on the nature of the forest. However, this information has remained inaccessible to a huge number of biological sightseers, cultural artists and social specialists who visit the forest every year.

The ecosystem of Mangrove is an unconventional kind of environment in the inter-tidal region. Due to its fascinating ecological conditions, it offers a wide scope of outside recreational chances. Normally, mangroves can draw attention to an enormous number of sightseers and be a source of earning through national and foreign tourism. In numerous nations, the tourism in the mangrove regions has been created. In case of Kenya, revenue earned through eco-tourism from one hectare wildlife sanctuary exceeds many times the most optimistic projected return from farming. There is likewise proof that the financial advantages got from nature based ecotourism surpass the earning option from wood harvesting. Note that conservation of forests, particularly mangroves can be viable to the tourism sector if very much arranged. Its excellence lies in its special natural surroundings and environmental factors. A large number of wandering streams, springs, waterways and estuaries have upgraded its beautifulness (Manna *et al.* 2010). It is the natural habitat of the world acclaimed royal Bengal tiger, spotted deer, crocodiles, wilderness fowl, wild hog, reptiles, monkeys and an incalculable assortment of excellent flying creatures (Islam and Gnauck, 2009). Flocks of flying migratory Siberian ducks, sail boats loaded with Golpata (*Nipa fruticans*), nectar, shell and fish further add to the peaceful common excellence of the Sundarbans reserve forest. There is an ample potential for ecotourism spots in the SRF and each one may have special significant characteristics (Haque *et al.* 2016).

The nature of the mangrove plants, the basking of crocodiles along the edge of the springs and gulfs and changing of the water body into a flying creature safe-haven by the great numbers of migratory birds and colorful ducks in the winter, the sharp movements of the spotted deer at the waterholes and seashore, the soft bird calls, and the sudden meeting of flagship species- the Royal Bengal Tiger, will certainly touch the heart of both the native and overseas tourists (Salam *et al.* 2000).

## **1.2 Rationale of the study**

Eco-tourism or tourism sector is a thrusting sector in our countries. It contributes to three important goals of any country such as income generation, employment opportunities, and foreign exchange earnings. At present ecotourism shows as an important matter for the development of our country. A large portion of GDP generates from this sector. There are huge prospects of eco-tourism industry in Bangladesh. This industry will survive for a long time if the industry is properly treated. To continue the growth and sustainability of this industry we need to study about the sites and products of this industry, factors and scope relating with this industry, principles and goals regarding the industry is vital (Ganiet *al.* 2016). This study reveals the potential of this industry by identifying the problems and addressing some recommendations.

The Sundarbans has been considered as the biggest mangrove forest on the planet comprising of group of island having different and rich with natural resources and converged by a network of different streams and channels. The Sundarbans is an exceptionally remarkable habitual and ecosystem that has been perceived worldwide for its significance regarding Biodiversity and assets. The Sundarbans uphold a wide variety of vegetation, both in amount and diversity, some of which are endangered, both locally and around the world. Presence of the Royal Bengal Tiger, estuarine crocodile, an assortment of dolphins, reptiles and a specific number of birds and exceptionally endangered species has made the eco-tourism in Sundarbans.

Moreover, the presence of plentiful tourism attractions for a wide range of sightseers, Bangladesh lingers behind a number of nations in capitalizing tourist assets and improves its foreign reserve in South Asia. Political unrest, strikes, frequent tragedy in garments sectors and the adverse security situation within Bangladesh deterred both domestic as well as foreign tourists from exploring the country. Worldwide sightseers' dreaded heading off to a nation with political vulnerability, and even nearby vacationers thought that it was more secure to wander abroad for tourism, instead of investigate Bangladesh. Two spells of destroying floods in July and September 2007 were trailed by the nation's most exceedingly devastating cyclone, Sidr, in November 2007. These create extensive damage to the nation and had a negative impact on the tourism sector, particularly since the vast majority of the infrastructure in the coastal regions was demolished in the cyclone (Rahman, 2009).



Although, time has not finished and still there are bunches of scopes and openings if Bangladesh endeavors to highlight it as a vacationer location to the potential sightseers appropriately through an effective promotional measure, can take a few activities to build up some infrastructural facilities, encourage easy access to various location, create better scene of Bangladesh and ensure safety and security of tourists and travelers, the nation would be able to acquire higher than the present by attracting more vacationers inside a brief timeframe. However, this sector has remained almost in the dark and failed to draw proper attention to the government and the policy makers. Against this background, research needs to investigate the realities identified with the area for its progressing advancement regarding creating different parts of the tourism industry based on demand not the supply one (Rahman, 2009). Hence, an investigation on this territory is fundamental to find the important realities that advance the ecotourism industry in Sundarbans. This exploration study is an endeavor to uncover that realities.

### **1.3 Objectives of the Study**

This paper is aimed at critically analyzing different issues of ecotourism in Sundarbans analyzing its problems and future priorities. It depicts possibilities and attractions of famous tourist regions in Sundarbans reserve forests and the succeeding areas critically analyze, among others, commitment and interrelationships of the stakeholders and their functions in sustainable tourism development. Along with these, existing strengths, shortcoming, openings, and threats are examined. The article ends with policy implications and concluding remarks with future needs. Furthermore, The objectives of this study is to identify a portion of the key components in the Sundarbans that influence the manageability of ecotourism, for example, the administration's function in advancing ecotourism, and natural calamities in relation to climate change threats. The research objectives are given as follows:

- 1) To identify the potential of ecotourism in the mangrove Sundarbans of Bangladesh.
- 2) To what extent can ecotourism be able to be considered as a successful instrument for Sustainable Development?
- 3) To find out the reasons behind the reluctance of foreign tourists to visit Bangladesh.

#### **1.4 Limitations of the Study**

As this research is directed distinctly only for academic reason, the primary constrain was cost and time. For the inside and out investigative purpose, sufficient time is required. Yet, insufficient time was a significant obstacle to prepare such a top to bottom investigation. This study didn't cover beyond all the visitors thus many of the tourists are being unreached. Another crucial oblige of the investigation was deficiency of data. It is difficult to get customers insight since sightseers are not ready to give enough data. Since the respondents are occupied with their day by day life exchange, therefore they neglected to coordinate and in some cases were hesitant to give the genuine data.

## LITERATURE REVIEW

### 2.1 Ecotourism: Concept and Issues

#### 2.1.1 Concepts of Ecotourism

Ecotourism rose during the 1980s because of the call for alternative models of advancement. It was understood that mass tourism frequently spurred uneven development and added up to high social and ecological costs, in this way elective manageable the travel industry implies must be looked for(Kenny, 2017).

The idea of ecotourism is greatly identified with some different ideas of the tourism like, wild life the tourism or adventure tourism (Afroz and Mahmud, 2017). Various researchers depict the ecotourism as one of the all-inclusive variants of mass tourism sector. Some researcher attempts to show the term ecotourism as responsible tourism (Russell and Wallace, 2004). The term ecotourism went to the spotlight in the course of the most recent thirty years as a choice to mass tourism and as a significance to address the immaculate the tourism considering favorable ecological and social outcomes (Russell and Wallace, 2004). During the time of globalization, both the developed and the developing world facing the difficulties of securing the natural resources around the world. But, the interest for travelling and the tourism sector, particularly in the natural regions is expanding largely. In recent years, the tourism sector has become a multimillion dollar industry, as individuals are more intrigued to invest their recreation energy in various alluring spots the world over (WTTC, 2015). In recent years, ecotourism rose as one of the most financial, compelling and sustainable method of using natural resources and keep up practical improvement in natural reserves (Li and Han, 2001).

Ecotourism, a special subset of the tourism sector is centered the upgrade or support of regular frameworks through the tourism. Ecotourism implies various things to different individuals. To a few, it is the overall term that includes nature-based, adventure, delicate adventure, and cultural tourism (Kiper, 2013). The term ecotourism was authored in 1983 by "Hctor Ceballos Lascurain" a Mexican environmentalist, and was at first used to depict nature based travel to generally undisturbed zones with an accentuation on education. Ecotourism ensures the maintainable utilization of ecological assets, while producing financial open doors for the local individuals (Bhattacharya, *Det al.* 2011).

Ecotourism itself is intended to be a sustainable form of natural asset based tourism. Despite the fact that ecotourism does not have a solid definition, there are many very much perceived definitions that formed a clear picture of its core principles. As indicated by Ceballos Lascurain (1987), 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." International Union for Conservation of Nature and Natural Resources in 1996 to characterize it as follows: Ecotourism is earth mindful travel and appearance to moderately undisturbed regular zones, so as to appreciate and acknowledge nature that advances protection, has low negative visitor impact, and accommodates usefully financial contribution to local populations. Das (2011) describe ecotourism as, "ecotourism, characterized as mindful travel to normal regions, that monitors nature and improves the welfare of nearby individuals, has grabbed the eye of various interests, both as a monetarily beneficial relaxation action, and as a methods for preservation and advancement".

Without any doubt, well-structured and conscientiously implemented policy frameworks for eco-tourism may prompt various positive effects, for example, work liberation of the indigenous populace, promotion of local handicraft industries, chance to self-finance henceforth empowering better protection of natural flora and fauna as well as wildlife, etc. (Sarker and Lupa, 2016). The dynamic financial contribution of local populations is one of the key parts that different ecotourism from other forms of tourism.

### **2.1.2 Principles of Ecotourism**

Ecotourism is about uniting protection, networks, and sustainable travel. This implies the individuals who actualize, participate in and market ecotourism activities ought to receive the accompanying ecotourism principles:

- a)** Minimize the negative impact of nature and culture that can harm a destination.
- b)** Educate the travelers on the importance of conservation.
- c)** Stress the importance of responsible business, which work cooperatively with local authorities and people to meet local needs and deliver conservation benefits.
- d)** Direct revenues to the conservation and management of natural and protected areas.
- e)** Emphasizing the need for regional tourism zoning and for visitor management plans designed for either regions or natural areas that are slated to become eco-destinations.

- f) Emphasize use of environmental and social base-line studies, as well as long term monitoring program, to assess and minimize impacts.
- g) Strives to maximize economic benefit for the host country, local business and communities, particularly people living in and adjunct to natural and protected areas.
- h) Seek to ensure the tourism development does not exceed the social and environmental limits of acceptable change as determined by researchers in cooperation the local residents.

**Source:** The International Ecotourism Society, 1991

### 2.1.3 Goals of Ecotourism

Boo (2001) has recognized four goals of ecotourism, these are:

- **Protection of the environment** - Economies that are experiencing loss of resources due to population growth, hurricanes and extractive industries like fisheries, ecotourism can provide economic support for the protection of the environment.
- **Economic sustainability**- Economies that are facing the loss of revenue in the near future and rely heavily on imports, eco-tourism can provide a ready means of foreign exchange. The goals of eco-tourism are also to benefit residents by ensuring sufficient financial returns and an equitable distribution of costs and benefits.
- **Cultural integrity and enhancement**- The word „ecology“ in eco-tourism implies a two-way relationship between visitors and residents involving cultural exchange, but also mutual respect and reciprocity.
- **Educational value**- This can be seen in the education of both visitors and residents in creating awareness and appreciation of the natural environment and cultures, including what is passed down to the next generation.

### 2.1.4 Factors and Scope of Ecotourism in Bangladesh

According to Gani (2016), some of the factors effects more for developing ecotourism are:

- a) **Natural resources:** Bangladesh is full of natural endowment and beauties. There are a lot of forest sites, rivers, streams, water bodies, public parks and other natural spots are encompassing everywhere over the country. These assets are the main fascination for creating ecotourism in the country.
- b) **Ecological specialization:** Bangladesh has wonderful scene and natural sits. There are a ton of natural and ecological places all around the country, which have the tremendous capacity to draw attention to the eco vacationers.

- c) **Geographical importance:** Bangladesh is the entryway of south-east Asia. It is associated via air and ocean and by surface. It has colossal vital geographic focal points, which can hugely contribute the nation to be an ideal ecotourism destination.
- d) **Topographical advantages:** There are six seasons in Bangladesh, for example, summer, rainy, fall, late autumn, winter and spring in Bangladesh. In each season, qualities decorate her in various and special manners which is exclusive in the world. So the pleasure of nature is an extraordinary hotspot for ecotourism.
- e) **Peoples involvement:** mass people are emerging source for environmental education. Without their spontaneous participation, environmental teaching does not occur properly.
- f) **Government role:** Government has played a crucial role for sustainable ecotourism development. Government formulates necessary laws and regulations for developing ecotourism sector safe and sound.
- g) **Organizational efforts:** Organizational efforts are very effective for environmental awareness of society. Environment and tourism related government and non-governmental organizations have taken initiatives in this regards.
- h) **International organizations:** Some international organizations are working for raising the environmental consciousness to the people. Among them WWF, UNESCO, WCED, WCU, IES are mentionable.
- i) **Media:** Media is a powerful weapon for building the society. Media can take part in ecotourism development and encouraging the people to environmental education.
- j) **Educational program:** Environmental education provides the school with a positive approach to society, because environmental education helps the entire process of education.
- k) **Trained tour operators and guides:** Tour operators and guides are trained up for operating ecotourism in light of environment friendly situation. If they trained up properly, they can ensure the effective ecotourism as well as environmental education.
- l) **Transportation Facilities:** Different private organizations have their own transportation facility to deliver people by maintaining time schedule.
- m) **Hotel & Motel Facility:** Almost in very ecotourism places there are different hotel and motel are available at a reasonable price. The hotel and motels are also providing foods. For foreigners they are also providing different foods as they deserves and demands.
- n) **History and Heritage:** Many historical and archaeological sites are situated in Bangladesh. Ancient mosques, temples, church, pagoda, shrines, historical buildings, different monuments are best examples of them.

o) **Culture and Life Style:** The ethnic life style of indigenous people, various religious and cultural shows are good forms of cultural diversity which might act as a powerful component of eco-tourism.

For many countries, ecotourism is not simply a marginal activity to finance protection of the environment, but is a major industry of the national economy. For example, in Costa Rica, Ecuador, Nepal, Kenya, Madagascar and Antarctica, ecotourism represents a significant portion of the gross domestic product and economic activity. The concept of ecotourism is widely misunderstood and in practice is often used as a marketing tool to promote tourism, which is related to nature. Ecotourism must sensitize people to the beauty and the fragility of nature.

## **2.1.5 Ecotourism as a Tool for Sustainable Development**

### **2.1.5.1 Sustainable development**

The idea of sustainability initially showed up in the public scene in the report put out by the World Commission on Environment and Development (Brundtland Commission) in 1987. The commission report propels the possibility of practical improvement by taking note of that monetary development and ecological preservation are viable as well as they are vital accomplices. One can't exist without the other (Harris et al. 2002). Supportable improvement is high potential for any network inside economic, social, cultural, natural and physical limitations (Bhuiyan et al. 2012). Supportable advancement has been characterized from multiple points of view, however the most regularly cited definition is from "Our Common Future", otherwise called 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 idea of requirements, specifically the basic needs of the world's poor, to which abrogating need ought to be given; and
- The thought of constraints forced by the condition of innovation and social association on the earth's capacity to meet present and future needs."

Sustainable development it is frequently called intergenerational equity, the thought is that we should share natural resources not simply with individuals who are alive on the planet

today yet additionally with people in the future of the world's occupants (Kiper, 2013). Supportable advancement incorporates financial, social with the ecological objectives.

### 2.1.5.2 Principles of Sustainable Tourism:

Numerous groups have proposed sets of rules or standards for supportable the tourism and ecotourism Tourism Concern and the World Wildlife Fund for Nature built up a notable rundown of standards and rules in 1991, which are introduced in Table 1.

Table-1:Principles for Sustainable Tourism

<b>1. Using resources sustainably</b>	The conservation and sustainable use of resources natural, social, and cultural is crucial and makes long-term business sense using resources sustainably
<b>2. Reducing over consumption and waste</b>	Reduction of over-consumption and waste avoids the costs of restoring long-term environmental damage and contributes to the quality of tourism
<b>3. Maintaining Biodiversity</b>	Maintaining and promoting natural, social, and cultural diversity is essential for long-term sustainable tourism, and creates a resilient base for the industry
<b>4.Integrating tourism into Planning</b>	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
<b>5. Supporting local economies</b>	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
<b>6. Involving local communities</b>	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
<b>7. Consulting stakeholders and the public</b>	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
<b>8. Training Staff</b>	Staff training which integrates sustainable tourism into work practices, along with recruitment of personnel at all levels, improves the quality of the tourism product



<b>9. Marketing tourism responsibly</b>	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
<b>10. Undertaking research</b>	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

(Source: Blamey, 2001).

### **2.1.5.3 Ecotourism and sustainable development relationship**

Sustainable development through ecotourism is a concerning issue in the world today. Numerous nations have guaranteed their local advancement by this idea. In this idea, sustainable development might be happened by the ecotourism and local improvement all the while in a zone (Kiper, 2013). Measurements of ecotourism improvement allude to the ecological, financial, and social parts of the tourism industry advancement, and an appropriate harmony between these measurements must be built up to keep up its drawn out supportability (Bhuiyan et al, 2012). The foundations of eco-tourism industry grew from the development to consolidate the safeguarding of our common habitat as a productive objective in any organizational domain, famously known as sustainable development (Sarker and Lupa, 2016).

Sustainable tourism requires the educated investment regarding every single significant partner, just as solid political initiative to guarantee wide interest and agreement building. Accomplishing it requires checking of effects, presenting the vital preventive and restorative measures at whatever point important (Kiper, 2013). Sustainable tourism ought to likewise keep up an elevated level of vacationer fulfillment and guarantee an important encounter to the sightseers, raising their mindfulness about maintainability issues and advancing sustainable tourism practices amongst them (World Tourism Organization, 2001).

Tourism is an exceptionally mind boggling movement and along these lines expects devices to aid successful dynamic to deal with the contending monetary, social, and ecological demands of maintainable turn of events (Fadahunsi, 2011). Table 2 shows some fascinating instances of potential risks from the tourism activities, which are particularly essential in naturel and social territories.

**Table-2:**Potential Risks from Tourism

<b>Element</b>	<b>Examples of risks from tourism activities</b>
<b>Ecosystems</b>	<ul style="list-style-type: none"><li>• The construction of accommodation, visitor centers, infrastructure, and other services has a direct impact on the environment, from vegetation removal, animal disturbance elimination of habitats, impacts on drainage etc.</li></ul>
<b>Soils</b>	<ul style="list-style-type: none"><li>• Soil compaction can occur in certain well-used areas.</li><li>• Soil removal and erosion also occurs, and may continue after the disturbance is gone.</li></ul>
<b>Vegetation</b>	<ul style="list-style-type: none"><li>• Concentrated use around facilities has a negative effect on vegetation.</li><li>• Fire frequency may change due to tourists and park tourism management.</li></ul>
<b>Water</b>	<ul style="list-style-type: none"><li>• Increased demands for fresh water.</li><li>• Disposal of sewage or litter in rivers, lakes or oceans.</li><li>• Release of oil and fuel from ships and smaller craft.</li></ul>
<b>Air</b>	<ul style="list-style-type: none"><li>• Motorized transportation may cause pollution from emissions.</li></ul>
<b>Wildlife</b>	<ul style="list-style-type: none"><li>• Hunting and fishing may change population dynamics.</li><li>• Impacts occur on insects and small invertebrates, from effect of transportation, introduced species, etc.</li><li>• Disturbance can be of several kinds: noise, visual or harassing behavior.</li><li>• Marine mammals may be hurt or killed by boat impacts or propeller cuts.</li></ul>

(Ecotourism – Sustainable Tourism in National Parks and Protected Areas, 2005)

#### **2.1.5.4 Ecotourism and environmental, social and economic impacts**

##### **2.1.5.4.1 Role of ecotourism in Bangladesh economy**

Bangladesh has great prospects in ecotourism industry. The economic impact can increase this industry. Ensuring territories and nature protection for the most part give numerous advantages to society, including conservation of biodiversity, support of watersheds, etc. Notwithstanding, the advantages related with amusement and the tourism sector in secured zones will general be tangible. For example, explorers at the Sundarbans spend money on food dwelling and for different goods and services, along these lines giving work to nearby and non-local residents (Hasan, 2004). Nation like Bangladesh has an immense potential in

the segment of ecotourism. As indicated by the measurements of 2014, travel and the tourism industry has an absolute commitment of 4.1% of the GDP of Bangladesh and predicted to be expanded by 06% inside the year 2025 (WTTC), 2015).

Tourism gives business openings by expanding and expanding salaries that help decrease the weakness of poor people. Ecotourism-related products and enterprises can give nearby individuals extra pay as well as make new openings. It can possibly help the worldwide battle against destitution. Ecotourism is related with the age of incomes sufficiently generous to contribute fundamentally monetary turn of events. Ecotourism revenues also appear to have considerable positive elasticity in that entry fees to protected areas, which constitute a major source of local ecotourism-related revenue.

Tax revenue from ecotourism that give significant budgetary assets to creating framework, vacation destinations and other public facilities and administrations and the tourism industry promoting and preparing required for creating the tourism industry. Ecotourism in Bangladesh may give the methods for strengthening to disadvantaged groups, for example, numerous local individuals including ladies by opening an economic and management role for them in ecotourism. As the eco-tourists tend to cope up with the neighborhood network, the hindered gathering of the nearby network of the distant regions would get more chances to participate effectively in various administrations to the eco-vacationer like arranging food, preparing custom-oriented cloths and different belongings for them, creating the souvenirs to be sold, and many more. One of the primary issues in city regions in Bangladesh is the immense weight of populace because of greater accessibility of business and works with respect to peripheral rural areas. As ecotourism can build open doors for the rural poor in their own networks, it can possibly help reduce rural out-migration to urban areas, increase employment opportunities for the urban poor, give them extra money to accommodate their families in the country regions and, hence, lessen the overburden of populace of large urban areas like Dhaka, Chittagong, and Khulna and so on.

#### **2.1.5.4.2 Environmental Dimension**

In terms of the environment, the biggest benefit ecotourism has to offer is its incentive value for preserving natural environments (Weaver, 1998). A crucial element of ecotourism incorporates environmental education for both residents and tourists (Cheia, 2013). This way,

education helps foster environmentally responsive attitudes and molds eco-tourists into advocates for the visited area upon returning home. According to Honey (2008) in order to minimize the impact of environmental footprint, using environmentally and culturally sensitive architectural design through the use of available local building materials, recycling and disposal of waste is of great importance. Low impact construction through use of available local building material will therefore be added to the framework. Ecotourism usually implies small-scale projects with small groups of tourists (Kenny, 2017).

#### **2.1.5.4.3 Socio-cultural Dimension**

In the Socio-cultural component of ecotourism, Honey (2008) pitch for a network based model of ecotourism as an administration way to deal with achieving local sustainable development. He sees the support and inclusivity of local people as basic to practical ecotourism execution where eco-tourist cabins and projects ought to endeavor to arrange correspondence between the host networks and sightseers, including them in the cycles of the board and arranging. That being along these lines, advancing the support and inclusivity of local people will be added to the structure. Utilizing the contextual analysis case of North Sulawesi Indonesia, it was discovered that the nearby networks were not accepting significant advantages from ecotourism and they saw benefits were accrued by outsiders spurring negative attitudes from the locals to the initiative (Ross and Wall, 1999). This seems to be a common theme among past ecotourism projects and should be countered. Critical to note, ecotourism includes inconsistent force relations among guests and the host a ton of the time, in this manner its part in regarding the nearby culture and cultivating intercultural thankfulness is of incredible significance and will be remembered for the system (Kenny, 2017).

Ecotourism is frequently seen as an instrument for advancing economical advancement in creating nations. Ecotourism helps in network advancement by giving the substitute wellspring of occupation to nearby network which is more maintainable. Many view ecotourism as a suitable method to ensure the indigenous habitat and make social and financial advantages for nearby networks. Ecotourism includes a range of nature-based activities that encourage visitor thankfulness and comprehension of regular and social legacy and are figured out how to be biologically, monetarily and socially practical. Therefore, ecotourism is accepted as an alternative type of sustainable development. It has attracted

expanding 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. If the environment has not at least achieved a net benefit toward its sustainability and ecological integrity, then the activity is not ecotourism.

## **2.2 Sundarbans as a Site for Ecotourism in Bangladesh**

### **2.2.1 Biophysical attributes of Sundarbans**

The Sundarbans is the world's single biggest mangrove forest that stretches out across Bangladesh and the Indian territory of West Bengal. The forest is flat and the most extreme ground rise is 3 meter over the fundamental ocean level (Rahman, 2009). The land has been created through the cycle of sedimentation and down wrapping of sediments. These thick mangrove forests are jumbled by an organization of waterways and springs. One find here tides streaming in two ways in a similar spring and frequently tigers swimming over a waterway or colossal crocodiles lolling in the sun (Rahman, 2009).It has a tropical humid climate with temperature ranging between 26 degrees and 34 degrees Centigrade. The annual rain fall is between 1600 to 2000 mm. It is believed that the name "Sundarbans" comes from the tree named Sundari (*Heritiera fomes*) which are the major plants of the forest. The forest changes its beautification naturally at least 6 times in a day (Bhuiyan, 2011).

Three patches of the forest in the south have been declared as "Wildlife Sanctuaries" are Kachikhali-Katka sanctuary in the Sarankhola range, Neelkamol at Hiron point in Khulna range and Mandarbari in the Burigoalini range. They have been declared by UNESCO in 1997 as the "World Heritage Sites"(Chowdhury 2001).

### **2.2.2 Biodiversity of Sundarbans**

The mangrove eco-framework is considered as the high creating eco-framework since it assumes a fundamental function to keep up the biological equalization. The Sundarbans is a significant spot of bio-assorted variety where one can discover different blends of various plants. The Sundarbans continues its magnificence despite the fact that it has compromised by numerous synthetic cataclysms. It assumes a huge part to clean the climate of the mangrove forests. The forest supports a diversified flora and fauna. The floristic creation of the Sundarbans envelops an assortment of plants including trees, bushes, grasses, epiphyte

and lianas. Being generally evergreen, they have fundamentally the same as physiological and structural adaptations.

### **2.2.2.1 Floral biodiversity**

A total 334 plants, 165 algal, 13 special orchids, 17 fern, 87 monocotyledon and 230 dicotyledon belonging to 245 genera and 75 families from the Sundarbans and adjacent area are found available (Rahman & Asaduzzaman, 2010). The more prominent and important tree species found include sundari, gewa, keora, goran, singra, dhundal, amur, passur and kankra. Golpata palm, commonly found in the Sundarbans, is widely gathered for thatching material. The principal tree species is Sundry (*Heritiera fomes*) which covers about 73% to total landmass and the second species is Gewa (*Excoecaria agallocha*) which covers about 16% of total forest area (Rahman & Asaduzzaman, 2010). Of the 50 true mangrove plant species recorded throughout the globe, the Sundarbans alone contain 35 species (Rahman & Asaduzzaman, 2010).

### **2.2.2.2 Faunal Biodiversity**

Around 289 terrestrial species of 185 and 219 amphibian faunal types of 146 genera have been accounted for as discovered living in the Sundarbans (IFMP, 1998). The heavenly among the creatures ashore is Royal Bengal Tiger, Spotted deer, barking deer and wild pigs are there in plenty. Besides those jungle cats, fishing cat, civet cat, monkey, bengal fox, jackal, water monitor, monitor lizard and snakes are important faunal species (Rahman & Asaduzzaman, 2010). The Sundarbans biological system upholds rich fisheries assorted variety. This environment uphold 53 types of pelagic fish, 124 types of demersal fish, 24 types of shrimps, 7 types of crabs, 8 types of lobster (IFMP, 1998). There are more than 120 types of fish that are regularly trapped in the Sundarbans (IFMP, 1998). The chief reptile's species incorporate the estuarine crocodile, python, regular cobra, gecko, ocean snakes, screen reptile, turtles and others. Of the winged animal species, the sea-going ones incorporate the aides, storks, herons, egrets, little cormorant and others. The other earthbound birds incorporate the kingfishers, doves, pigeons, flycatchers, magpie robin, red wilderness fowls, woodpeckers, owls, rose-winged parakeet and others. The wetlands in the Sundarbans save woodland and beach front waters are additionally reasonable natural surroundings for countless Ganges River dolphins, Irrawaddy dolphins and finless porpoises (USAID, 2010).

### **2.2.3 Attraction of Sundarbans**

The wonderful nature and wildlife are the fundamental attractions of the Sundarbans. Mangroves all through the world draw in a wide assortment of creatures making them an organically rich natural surroundings. The world's biggest mangrove woods is enhanced with biodiversity variety of greenery. It is known as the home of Royal Bengal tigers and delightful uncommon spotted deer. The magnificence of the dark green forests in the early morning and night, the lounging crocodiles along the edges of the streams and channels, the creeks and inlets, the quick, delicate movements of the deer at the drinking pools, just as the delightful beach, will stimulate the hearts of even the most world exhausted explorer (Salam, 2000).

There are six unique seasons, each giving alternate points of view of the forests. In the rainy season, the new green leaves show up loaded with youthful vigor (Salam, 2000). The streams during this period are brimming with fishes and give incredible sport to the angler. Majestic white waves roll in from the Indian Ocean to end their excursion on the staggering shore. Each winter, a large number of migrant birds and colorful ducks change the water body into a bird sanctuary.

From seeing a great many shorebirds wheeling in completely synchronized trip over the water, to the soft calling of myriad's of song-birds as they fly overhead on a pre-winter night, or the ghostly silhouettes of geese seen passing across a full moon, there are hardly any other regular habitats that can contend. Movement incorporates while going in Sundarbans are boat trip, wilderness journeying, watch creatures, riding in observatory tower, nectar assortment, remain for the time being on vessel and photography. A portion of the significant, interesting highlights and positive factors that can profit the improvement of the eco-tourism industry activities in Sundarbans are summed up as follows:

1. The wilderness and condition of one of the largest mangrove forest on the world.
2. The forest and UNESCO sites are protected from encroachment and for conservation purposes.
3. The variety of wildlife (specially birds).
4. The importance of one of the remaining natural habitats of the Royal Bengal Tiger, education and conservation awareness initiatives and studies.

5. Life in the river. The riverine experience and low impact on the natural and physical environment.
6. Understanding of the conservation dilemmas and problematic in the highly populated country as Bangladesh. The human context of individuals living in the impact zone and the exposure of conservation and biodiversity initiatives.

#### **2.2.4 Famous tourist spots**

Bangladesh is magnificent nation on the planet has numerous place of interest. All spots are alluring and notable. Sundarbans is one of them and more excellent spot for the vacationer. The lovely nature and untamed life are the principle attractions of the Sundarbans. The world's biggest mangrove forest is enriched with bio-assorted variety of greenery. Also, other primary attractions are wildlife photography, viewing landscape, river cruising inside the forest, visiting the fisherman village and taste the unadulterated nectar. The couple of particular territories in the Sundarbans that offer the most potential for the tourism, amusement and eco-tourism activities:

##### **Katka-Kachikhali**

Katka is one of the legacy destinations in Sundarban. Katka, a base for safaris and notable spot to see spotted deer and for fledgling viewing. Katka-Kachikhali is generally excellent picture in light of its wonderful khals, vegetation, fauna and closeness to the Bay of Bengal. This khals offers prospects to see deer, monkeys, concealed balance foot, screen reptile, snakes and opportunity to see a tiger crossing a khal. There is a sea shore and a watch tower on the open field where huge number of deer can be seen and now and then tiger can be found. This is the most problematic area of Sundarbans.

##### **Dubla Island**

Dublarchar is an island situated in the greatest single square of tidal mangrove forest Sundarbans. It is well known for fishing and is a spot for the fisherman where eastern side of the island stream Passur streams while on the western side waterway Shibsha. It is the main allowable biggest fishing place particularly for dry fish for winter season. Here spotted deer are typically observed to touch constantly. Consistently Hindus strict celebration Rashmela happens in November.



### **Nill Komol / Hiron Point**

Hiron point is another good potential area for sightseers which are known as the World Heritage Site. Hiron point is an elegant spot, incredible for spotting tiger, deer and other terrific and rare wild animals.

### **Karamjal**

Karamjal is the main passage door to the Sundarbans Reserved Forest where numerous day visitors come consistently. It is a magnificent visiting place in Sundarbans. Karamjal and the stunning characteristic natural world of the Sundarbans natural wildlife sanctuary await the experience for the sightseers. To remain in the greatest mangrove belt the mysterious forest and marsh land and be in the midst of the pleasant wilderness is an experience that will remain for eternity. This ought to be created as a guest's understanding place.

### **Mandarbaria**

It is placed in the south west side of the Sundarbans and it is extremely disconnected and quiet place. Travelers like this spot for restrictive wild.

### **Tin kona island**

Tin Kona island, truly implies three cornered island is another famous spot for wildlife spotting in Sundarbans. It is notable for tiger and deer where one can go over the genuine wildlife. This island has a captivating yet wild excellence converged with wild forest and estuaries.

## ANALYSIS AND FINDINGS

### 3.1 Research Methodology

This chapter describes key methodological segments that are utilized to accomplish targets of the study. Research is making known something which was previously unknown to people (Veal, 2006). A research methodology is an efficiently enquiry that allows the analyst to report the discoveries logically. On the other hand, research method is a planned and systematic approach of investigation that denotes the detail framework of the unit of analysis, data gathering techniques, sampling focus and interpretation strategy and analysis plan (Aminuzzaman and Salahuddin, 1991). In more details, in this part the author tried to discuss on the research strategy, research method, the method of data collection, the selection of the sample the type of data analysis and the empirical study of collected data.

#### 3.1.1 Research approach

Research approach manages the method of formation of new information and improving the scientist's comprehension of a matter of concern. The major forms of research approach are qualitative and quantitative. Qualitative method concerns to achieve in-depth understanding of human behavior in decision making process (Saunders et al., 2007). Qualitative method is also appropriate for this thesis because the researcher want to go deeper in finding answers to the research questions as well as finding out “why are” and “how come”. According to Neuman (2014) qualitative research looks at a particular case in detail that occurs in common progression of social life. Quantitative approach involves collection, storage, systematization, interpretation and analysis of quantitative data. This methodology uses a few measurable apparatuses, procedures and guidelines for surveying the factual legitimacy or criticalness of information gathered from the respondents. This methodology is strong to the positivist way of thinking and valuable during the time spent inspecting social phenomena, for example, emotional perspectives and viewpoints on a large scope (Saunders et al., 2007).

Bangladesh has shown impressive effectiveness in using its natural and artificial assets in creating as a global tourist's destination. In this manner, there is a chance to contrast genuine aftereffects of the investigation and that interpreted from past examination considers.

Moreover, the outcomes have been acquired through quantitative examination methods. Considering this epistemological setting, the current examination study depends on a mix of subjective and quantitative methodologies.

### **3.1.2 Data Collection Method**

Data collection is a significant section of a research. It may be done through overseeing various instruments, interview, perception, field survey through poll or whatever other method which is discovered reasonable and purposive. There are two sources of information. Primary data collection uses studies, analyzes or direct perceptions. Secondary information collection collected by gathering data from a different wellspring of records or electronically stored data that is content investigation.

In this study, researcher attempts to gather information and data from both the essential and auxiliary sources by thinking about these strategies and methods of information assortment. As primary data information assortment, researcher utilizes questionnaire survey utilizing both organized and semi-organized inquiry and perception techniques for experimental examination. Furthermore, the secondary data collection information assortment it is utilized various books, articles and authority archives identified with ecotourism especially to Sundarbans for content examination to the better comprehension of present status and future.

#### **3.1.2.1 Questionnaire Survey**

A questionnaire is a valuable apparatus that encourages to gather information from large, separate and comprehensively sprinkled group of community. As per Malhotra (2004), "A survey just includes a rundown of inquiries that are comparable and ordinarily introduced to respondents similarly or request to guarantee that a similar data is gathered from each individual from the sample". It has been considered as that a questionnaire is a typical instrument for observing data that beyond the physical reach of the researcher. Questionnaire survey is exceptionally compelling instrument to gather and accumulate data and information from the respondents about the focused on issues. The questionnaire can be primarily arranged into two kinds

A. Structured questionnaire: Structured questionnaires gather quantitative information. The survey is arranged and intended to assemble exact data. It additionally starts a proper request, supplements information, checks recently amassed information, and approves any earlier theory.

B. Non-structured questionnaire: It isn't pre-ordinate and during the hour of interview it is utilized as a guide. Unstructured questionnaires gather qualitative information. They utilize a fundamental structure and some branching questions yet nothing that restricts the reactions of a respondent. The inquiries are more open-ended to gather explicit information from respondents.

#### Types of Questions in a Questionnaire:

- (i) Open ended questions: Open-ended inquiries are characterized as free-form survey that permits a respondent to answer in open content configuration with the end goal that they can answer dependent on their total information, feeling, and comprehension. This implies reaction to this inquiry isn't restricted to a lot of choices.
- (ii) Closed ended questions: Close ended inquiries are characterized as inquiry types that ask respondents to look over a particular arrangement of pre-characterized reactions, for example, "yes/no" or among a set different decision questions. In an average situation, close-ended inquiries are utilized to assemble quantitative information from respondent.

A questionnaire survey method is adopted to collect data which is dominantly structured with closed ended questions to get more information and also the variety of respondents. One set of questionnaire with few specific segments are used for this purpose. A clear and smoothly moving questions sequence are set that help and feeling interesting to the respondents. Basic information of the respondents, potentiality of ecotourism in Sundarbans, economic contribution of ecotourism, sustainability of ecotourism and overall impression of the tourist are reflected from the response of the respondents. It is very essential to mention here that the respondents of the tourists are diversified in nature.

### **3.1.2.2 Observation**

Observation data collection technique is named a participatory report, in light of the fact that the researcher needs to immerse himself in the setting where respondents are, while taking notes or recording. Perception is regular in relaxation and the tourism exploration to get the yield by encountering the genuine circumstance as a member. Advantages of observation data collection method include direct access to research phenomena, high levels of flexibility in terms of application and generating a permanent record of phenomena to be referred to later. Simultaneously, observation method is disadvantaged with longer time necessities, elevated levels of onlooker predisposition, and effect of spectator on essential information, such that presence of eyewitness may impact the conduct of test bunch components. Note that perception information assortment technique might be related with certain moral issues. Completely educated assent regarding research members is one of the fundamental moral contemplations to be clung to by specialists. Here, researcher become a participant to observe the tourism activity closely that will help to analyze situation and recommendation.

### **3.1.3 Sample size**

Following to the detail of the information assortment strategies, the subsequent stage is to choose the subjects from whom the information would be gathered. In regard of sample size the focal point of this review was not to have an exceptionally enormous example yet to decide the example size by the quantity of the sub-factors just as time and costs imperatives. Total sample size is 40 (forty) with a variety of respondents that included students, researcher, businessman, service holder. Out of 40 respondents, 33 respondents are male and 7 respondents are female.

After surveys were regulated and gathered information from the respondents under investigation, the author applied the cycle of classification to sum up all the information from the filled-in questionnaires for the purpose of statistical analysis. The nature of exploration and arranging exercises is no in a way that is no better than the quality of information on which these activities are based. The above successive investigation of exploration procedure shows how the significant point of this examination will be accomplished and how they will give directions towards the important conclusions for the possibilities of ecotourism in Sundarbans.

### 3.2 Result and Discussion

#### 3.2.1 Demographic characteristics of the respondent

It is necessary to present data on the socio-demographics of the respondents in the study area. It is important to collect personal information about the respondents of the study area in order to draw accurate conclusions. For this, personal information or demographic characteristics of all categories of respondents that is found in the study area was collected. There were about 40 tourists of Sundarbans were selected to participate in this research study. It can be determine the extent to which socio-demographic characteristics have a bearing on making the subjects respond the way they did. The demographic data of the respondents of the study area was analyzed by gender, age, educational level, occupation, and income level and so on as presented in Tables 3.

Table-3: The Demographic characteristics of respondents of the study area.

<b>Variable</b>	<b>Sub-variable</b>	<b>Frequency</b>	<b>Percentage</b>
Gender	Male	33	82
	Female	7	18
Age	Under 18	3	7
	18-30	17	43
	31-40	14	35
	41-50	4	10
	Above 50	2	5
Religious	Islam	31	77
	Sanaton	9	23
Marital status	Single	19	47
	Married	20	50
	Divorced	1	3
Education	Primary	-	-
	Secondary	1	3
	HSC	3	7
	Bachelor	27	66
	Masters or above	10	24
Income level	Less than 15000	9	22
	15000-30000	10	25
	30000-45000	12	30
	45000-60000	6	15
	More than 60000	3	8
Profession	Student	12	30
	Researcher	2	5
	Service	21	21
	Business	5	5
	Others	-	-

### 3.2.1.1 Age distribution of the respondents

During research survey, respondents age distribution was collected to find the relation with tourism activities in the study area. As shown in figure 1 approximately 43% of the tourists are varied between 18 to 30 years whereas, 35% of the tourists are between 31 to 40 years whereas 5% are above 50 years of age. It is interesting that young adult group is the leading respondents. It is mainly because they are more energetic and enthusiastic than the other group.

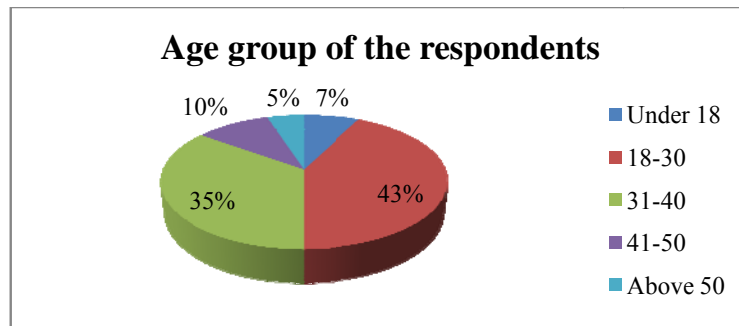


Figure-1: Age group of the respondents

### 3.2.1.2 Gender Distribution

The gender distribution analysis is vital in tourism analysis that males are known to be more involved in tourism activities. In the sample collected majority of the tourist 82% were male in the Sundarbans. Indications are males are to participate and respond more as a tourist than women because women have more social obligation than men.

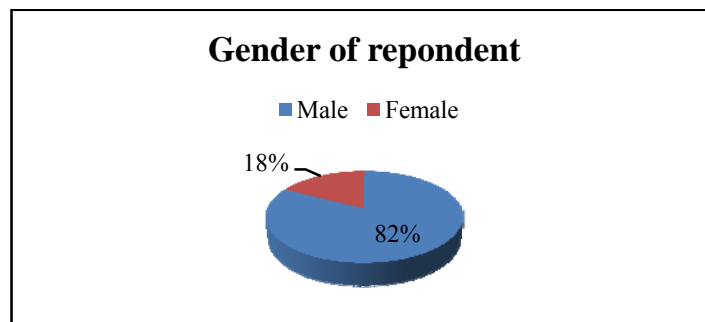


Figure-2: Gender of respondent

### 3.2.1.3 Occupation level of the respondents

It was interesting to note that majority of the respondents interviewed were jobholder as about 50%. The next largest response came from students who were about 30 percent. Only about 12 and 5 percent of respondent were businessman and researcher respectively. It indicates employed persons are more engaged as a tourist, this mostly in case of economic solvency.

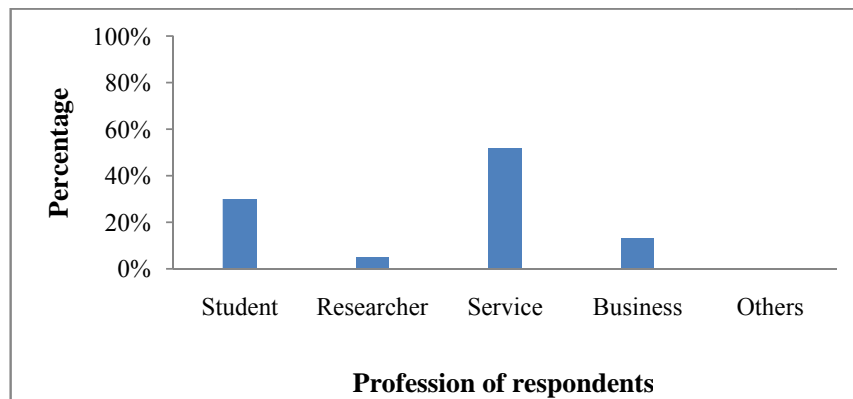


Figure-3: Profession of respondents

### 3.2.1.4 Marital status

By the time of research, the respondents were asked to reveal their marital status with the view of establishing their participation level in tourism activities in the study area. As shown in Figure-4, the marital status of respondents indicated that about 50 percent respondents were married, 47 percent were single and rest of 3 percent was divorced. It would be interesting to establish whether the responses to tourism related issues would be influenced by the both type of respondents married and single.

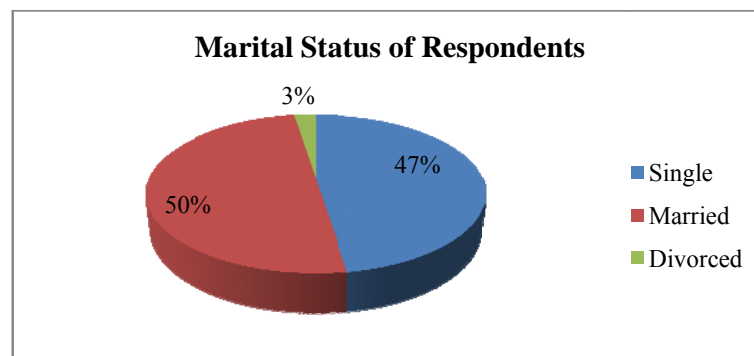


Figure-4: Marital Status of respondents



### 3.2.1.5 Religion

The respondents were asked their religious to identify relation with a tourist place of natural beauty, the figure 5 shows 77% of the respondents were Islam and 23% were Hindu. There was no Christian or Buddhist. It indicates that mostly Muslims were visited Sundarbans as they are majority in Bangladesh followed by Hindus. Actually a little religious impacts on visiting Sundarbans because of holy religious activity in Sundarbans.

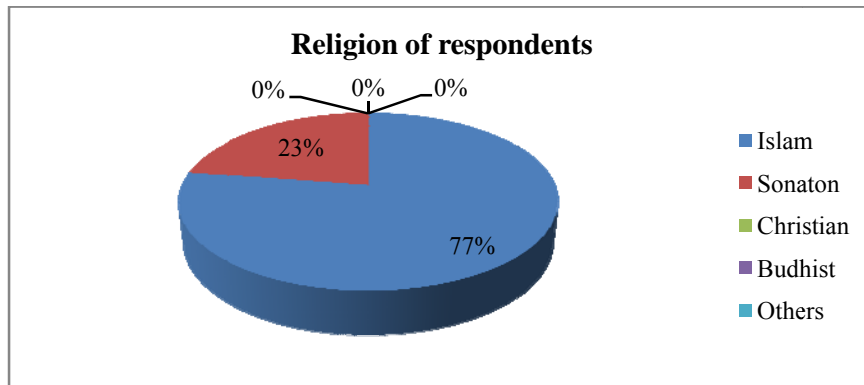


Figure-5: Religion of respondents

### 3.2.1.6 Monthly income level

As reflected in Figure-6 it came to light that the majority 30 percent respondents of Sundarbans indicated that they earn Tk.30001 to 45000 per month. About 25 percent respondents earn up to 15001 to 30000, whereas about 22 percent respondents earns less than Tk.15000 and 15 percent earn between 45001 to 60000. Relatively fewer respondents earn more than 60000. Understandably, income influences the level of participation on tourism activities. This suggests that income plays a great role in people's perceptions and choices regarding tourism related matters and peoples with enough money to spend frequently make tour.

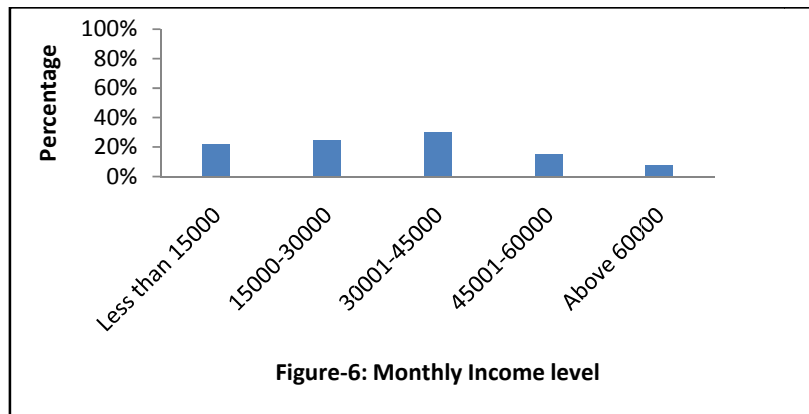
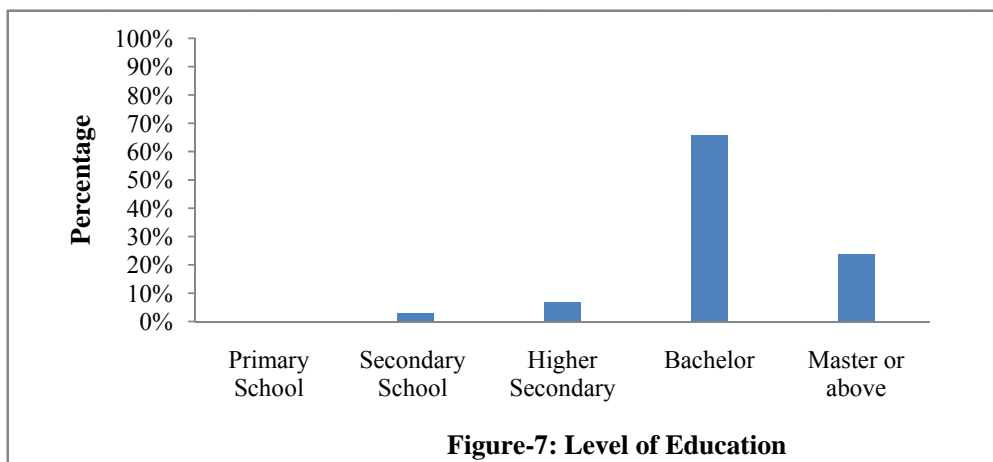


Figure-6: Monthly Income level

### 3.2.1.7 Level of Education

The distribution of the education standards of education of respondents depicted as shown in Figure-7 and described below. The major portion of respondents about 67 percent had acquired graduate standard of education. On the other hand, about 25 percent of respondents had acquired post graduate degree. Only about 7 & 3 percent of respondents had acquired higher secondary and secondary education qualifications. These findings were expected to assist the investigation in determining if education played a role in responding to tourism matters as we find higher educated people are mostly active tourists.



### 3.2.1.8 Nationality

As Sundarbans is a world famous mangrove forest, it is tried to find the status of foreigner visiting the Sundarbans. Among the respondents we find all of the tourists are from Bangladesh. Very few foreigners visited Sundarbans because of less facility and security concern.

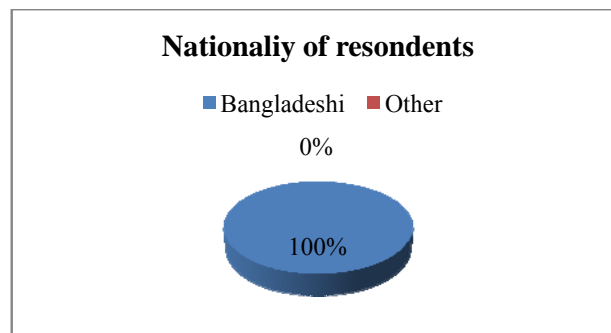


Figure-8: Nationality of respondents

### 3.2.2 Potential of ecotourism in Sundarbans

The Sundarbans has been considered as the biggest mangrove forest in this earth comprising of bunch of island having assorted and rich common asset and met by a combination of streams and channels. It has an extremely special biological system that has been perceived around the world for its significance as far as Biodiversity and assets. The Sundarbans uphold as wide scope of significant vegetation, both in amount and variety, some of which are endangered, both locally and around the world. Presence of the Royal Bengal Tiger, estuarine crocodile, an assortment of dolphins, reptiles and a specific number of birds and profoundly rare and endangered species has created lot of significance to ecotourism in Sundarbans.

#### 3.2.2.1 Interest in selecting Sundarbans as a tourism site

It is obvious to identify the reason to select a place for visiting a tourism site. It is noted that as shown in graph 4, more than 60 percent of the respondents replied leisure is the main reason of visiting Sundarbans. About 20 percent replied for education and 18 percent are for research. Very few were responding for business to select Sundarbans as a visiting place. It is evident that majority of tourists visited Sundarbans for recreation.

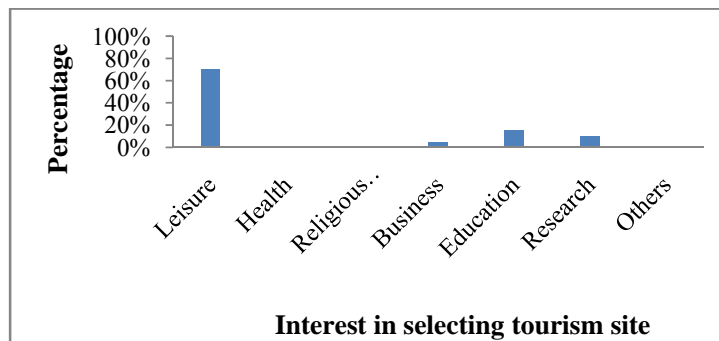


Figure-9: Interest in selecting tourism site

#### 3.2.2.2 Source of knowledge about Sundarbans

A tourism site may exposed and attract to the tourist through different media or various sources. Figure shows that about 43 percent respondents knew Sundarbans from friends and relatives and they rely on them to get information. Whereas 17 percent knew from both television and newspaper, 16 percent knew from internet respectively. Only 13 percent of the respondents knew from travel agency and a few from radio. Maximum tourist gathers

knowledge about Sundarbans tourism from their known person mostly who have prior experience to visit Sundarbans.

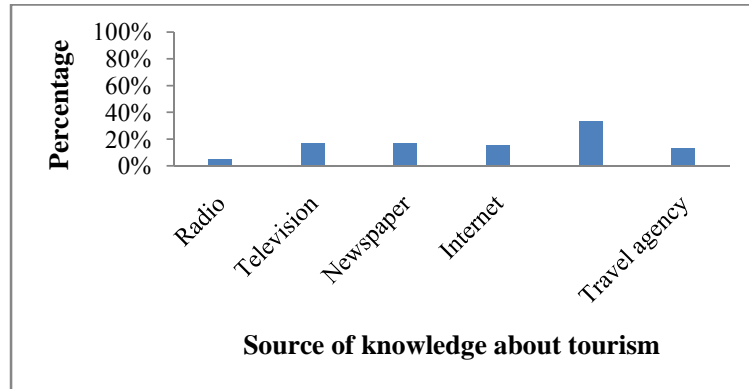


Figure-10: Source of knowledge about tourism

### 3.2.2.3 Affection to travel to the Sundarbans

Tourist spot is a place of intrigue where travelers visit normally for its characteristic or a showed regular or social worth, assembled excellence offering relaxation and delight. It is tried to find out the main attraction in Sundarbans 55 percent of the respondent like to enjoy the nature, 22 percent like mangrove trees and plants, 20 percent like wildlife and a very few like to cruise in river. So it is clear that most of the tourist come to Sundarbans to enjoy natural and calm environment.

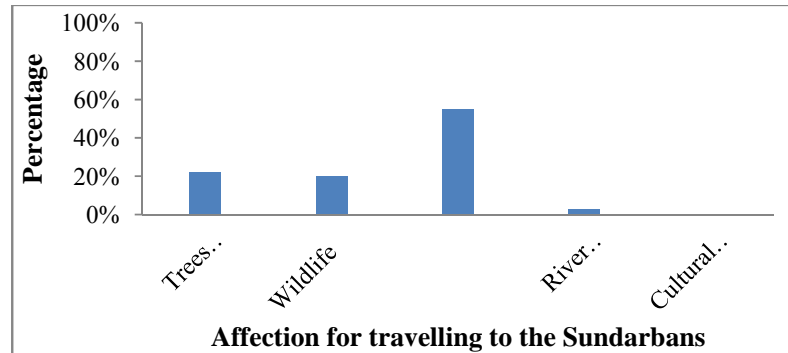


Figure-11: Affection for travelling to the Sundarbans

### 3.2.2.4 Transportation

The most important element of tourism industry is accessibility. It helps a tourist to reach his destination. Without the presence of efficient and effective transport facility tourism sector will not be functioned. A beautiful spot becomes a popular tourist destination only when it is easily accessible. Besides tourism demand can also be responsible for development of

transportation. So satisfaction upon the transportation of tourism destination is important to determine the development of the industry. Among the respondents about 60 percent said that they reached Sundarbans by bus. 20 percent of the respondents said train and bus is their mode of transportation and fewer are by car, ship and engine boat. After reaching the Sundarbans river cruising is the main function and 80 percent responds that they use engine boat for roaming inside the Sundarbans whereas 18 percent said by ship. Mainly day traveler visit short distance that means nearest tourist spot uses engine boat whereas tourist those visited for two or more days by ship. Some people visited by boat without engine, they are mainly tourists of surrounding area of Sundarbans. Around 50 percent of the respondent says well about the quality of transport system followed by 30 percent replied as average.

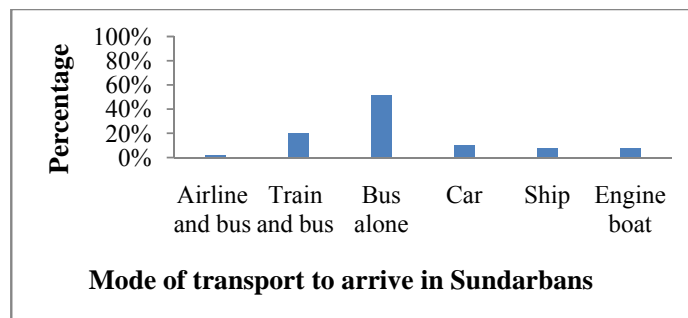


Figure-12: Mode of transport to arrive in Sundarbans

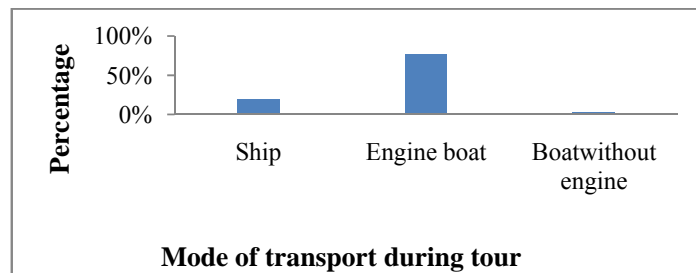


Figure-13: Mode of transport during tour



Figure-14: Quality of transport

### 3.2.2.5 Accommodation

The convenience facility is considered as a main consideration of the bloom of the tourism industry. Convenience facilities make travel helpful and agreeable and furthermore offer a fundamental help administrations to fulfill the inspiration of tourists that brought them again to the location. Quality of accommodation facilities is very poor in Sundarbans as visitors have to stay in ship while visiting two or more days. 88 percent respondent replied that they are not satisfied as there are no hotel facilities inside the Sundarbans. However, more than 50 percent says quality of accommodation is average, around 30 percent says poor and fewer are good. Also all the respondents mentioned about not availability of online booking system.

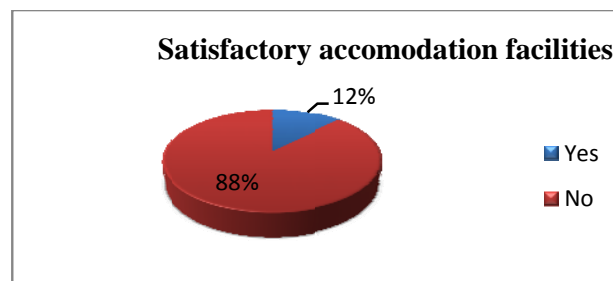


Figure-15: Satisfactory accomodation facilities



Figure-16: Quality of accomodation

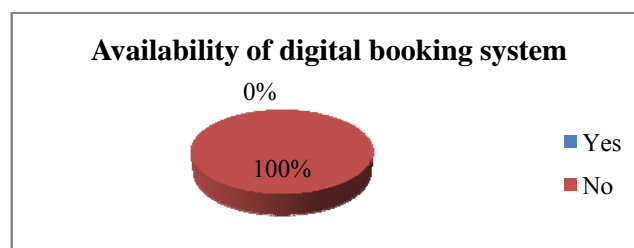


Figure-17: Availability of digital booking system

### 3.2.2.6 Restaurants

Tourists of Sundarbans are not satisfied regarding the issue of quality and variety of restaurant facilities. There is no restaurant in the Sundarbans, food mainly are supplied to the tourist by the travel agency. It is restricted within the ship. More than 50 percent replied as quality and variety of food is poor, 20 percent said good, very few are excellent.

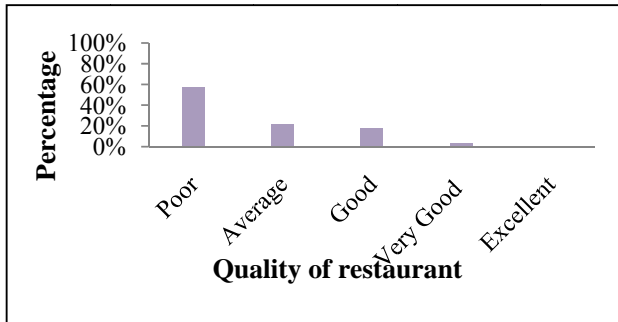


Figure-18: Quality of restaurant

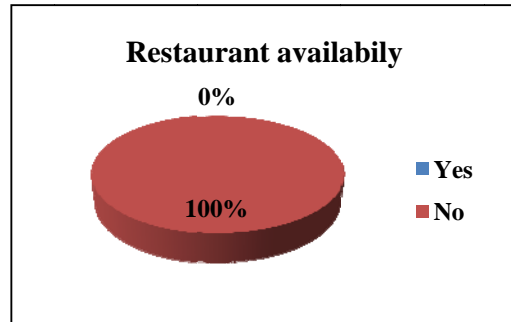


Figure-19: Restaurant availability

### 3.2.2.7 Security

Safety and security has become a vital issue in the development of tourism industry over the last few decades. Sundarbans is a place of interminable measure of characteristic magnificence and assets. However, absence of adequate safety and security of tourists is one of the significant reasons not for developing the business is up to the mark. Security can be considered as one of fascination factors for the tourism industry. Evidence suggests that Bangladesh has failed to create the right image among foreigners. A majority of the respondents are dissatisfied on the factor of feeling of personal safety and security. Maximum tourist think that security level is not enough and about 40% of that mentioned level of security is poor, around 35% think average and fewer are good but none response as good or excellence.

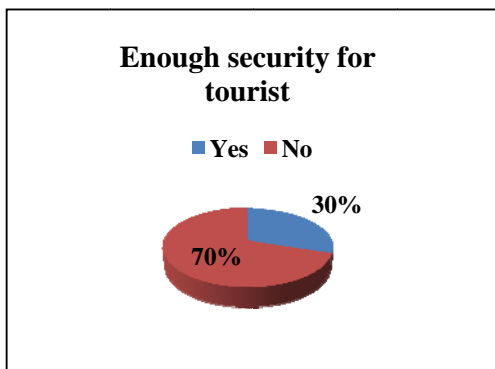


Figure-20: Enough security for tourist

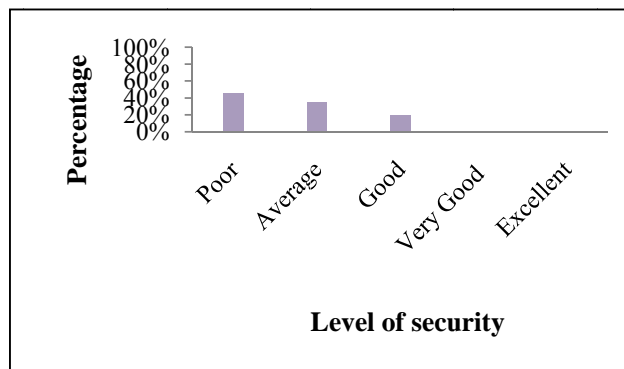


Figure-21: Level of security in Sundarbans

### 3.2.2.8 Cultural activities

Cultural activities have considerable significance for the tourism sector improvement in any country. Tourism service providers should identify more closely with the available cultural activities in order to create a valuable tourists offer that has potential to tourism development. The chart reveals that 90 percent of the respondents were not participated in any cultural activities. It is notable that majority of the tourist are not satisfied regarding of enjoying cultural activities.

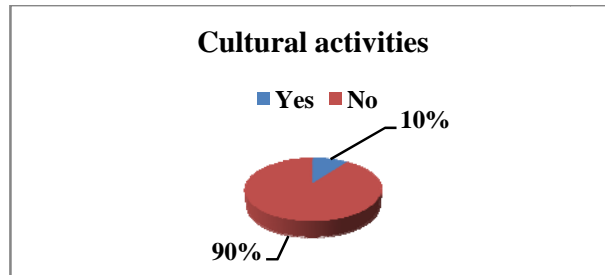


Figure-22: Cultural activities during visiting in Sundarbans

### 3.2.2.9 Favorable Climatic condition

Atmospheric condition and climate are significant elements in tourist decision making and furthermore impact the fruitful activity of the tourism business. Rise of the ocean level and more acidic seas will threaten coastal tourism infrastructure and natural attractions. Therefore, traveler's destination will profit by understanding potential environmental change in their general vicinity and how they may affect on their activities. When people are asked about their opinion that climatic condition is favorable for tourist in Sundarbans figure shows that more than 70% agreed with the opinion and rest of them are disagreed. It is obvious that deep Sundarbans travel for more than one day is prohibited from April to September due to risky weather but day travel occur all the year round to the nearest tourist spot.

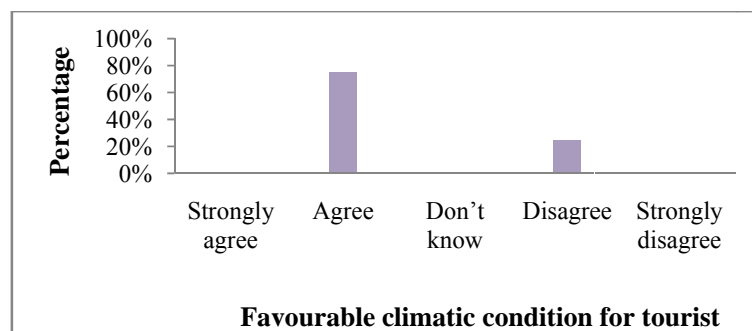


Figure-23: Favorable climatic condition for tourists



### 3.2.2.10 Tourist guide

In this part people are asked about availability of tourist guide and their knowledge of eco-friendly tourism of Sundarbans, figure shows that 30% of the respondent said available and 70% said not availability of guide. But within the response of getting guide they also said that 70% of guide had no eco-friendly knowledge and 30% said they had knowledge of ecotourism. So, availability of quality guide is not satisfactory level in Sundarbans tourism.

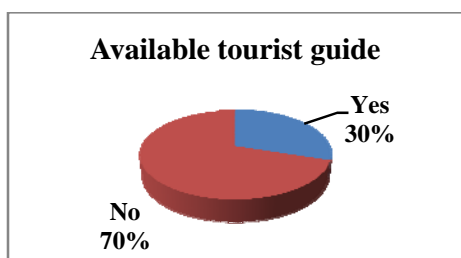


Figure-24: Availability of tourist guide

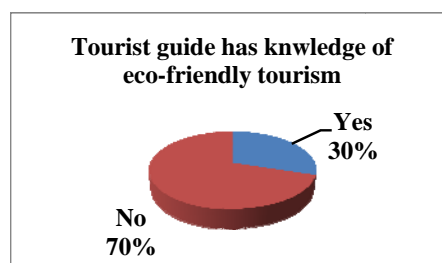


Figure-25: Knowledge of eco-friendly tourism of tourist guide

### 3.2.2.11 Most challenging problem in the Sundarbans

The respondents were asked about the most challenging problem that they faced during tour in the Sundarbans. 47% of the respondent think availability of the drinking water is the main problem for tourist, 22% think for security, 13% think for both accommodation and transportation another 5% think for climatic condition.

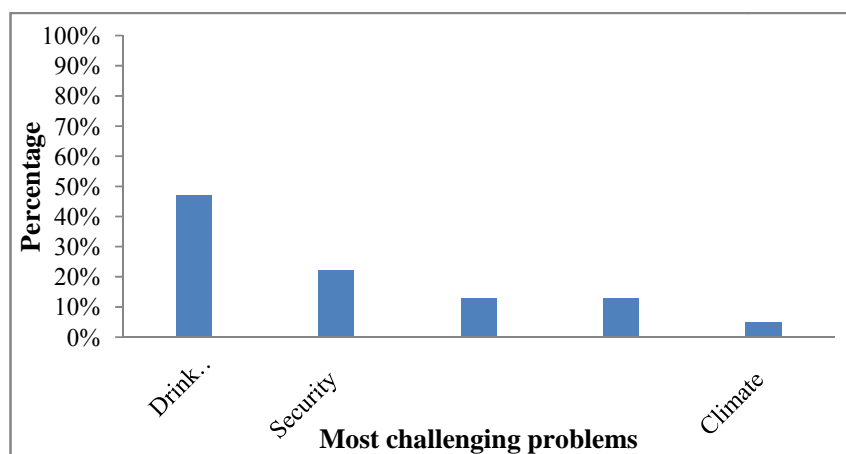


Figure-26: Most Challenging Problems

### 3.2.3 Economic contribution of ecotourism in Sundarbans

The travel industry produces considerable economic advantage for any nation. In developing nations one of the essential inspirations to advance it as a vacationer location is the expected economic advantage. Tourism is vital because of income generated by the utilization of products, government revenue increases by taxes levied on business, created opportunity for employment. So, ecotourism in Sundarbans can play a crucial role for economic development of Bangladesh. In this respect, visiting statistics of tourists in Sundarbans and its contribution to our economy is represented in this part.

#### 3.2.3.1 Number of visit

Tourists are asked about their first visit or not in Sundarbans, 40 percent of the tourists replied their first visit. Within the rest of 60 percent who are visited more than one time, 42 percent said that they visited Sundarbans more than three times; 37 percent said second time and 21 percent for third time.

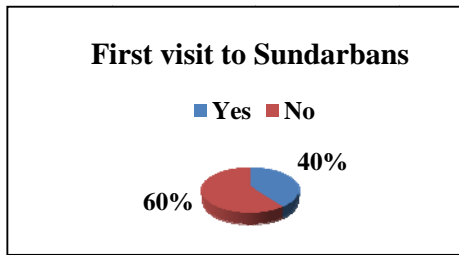


Figure-27: First visit to Sundarbans

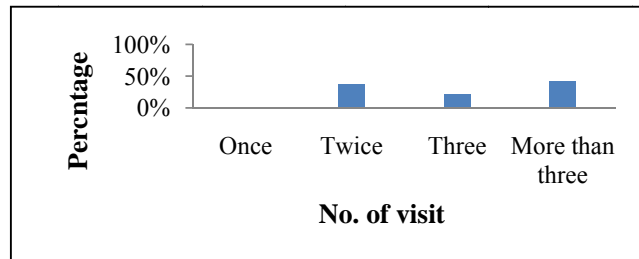


Figure-28: No of visit to Sundarbans

#### 3.2.3.2 Duration of visiting

Many tour operators are engaged in Sundarbans tourism. Their tour packages are mainly of three day tour. A lot of day traveler visit all the year. But some visitor enters to the Sundarbans for research or education purpose and their duration visit depends on their activity. The below graph shows among the respondents 40% visited for less than three days, 20 percent 3 to six days those are basically visited by tour operators, 12 and percent respondents visited more than 7 days those mainly for education and research purpose.

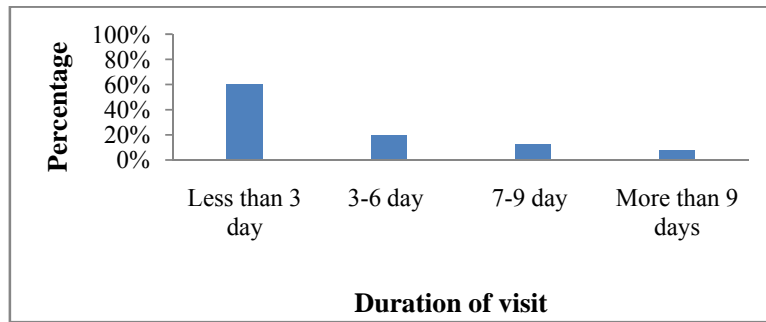


Figure-29: Duration of visit

### 3.2.3.3 Expenditure

The tourism item isn't only one ware commodity but a bundle of goods and enterprises bought by sightseers. It likewise shift since vacationers contrast as far as their socioeconomics, length of stay, kinds of convenience, food propensity, request of various activities, reason for visit and numerous different aspects. These variety prompts contrasts in consumption among tourists.

**Table-4: Average consumption chart for the respondents**

Duration of visit	No of respondents	Total expenses	Average expense per person (in Tk)
Less than three day	24	112800	4700
3 to 6 days	11	101500	9227
7 to 9 days	3	36500	12166
More than 9 days	2	27000	13500

The table 4 shows variation of expenditure on the basis of duration of visit in the Sundarbans. Average expenditure for less than three days of the respondents was 4,700 taka, 3 to 6 days were 9,227 taka, 7 to 9 days were 12,166 taka and more than 9 days were 13,500 taka. It should be mentioned that many day travelers come to visit Sundarbans had to stay in hotel to the nearest city Khulna or Mongla, their expense may rise than many local traveler who visit for more than three days. The expenditure also important because high cost of tourism product sometimes demotivated many tourists but low cost may attract tourists and expand tourism.

### 3.2.3.4 Tourists arrival and revenue income in Sundarbans

Tourism is a prime revenue source of many countries and Bangladesh has struggled a lot to improve the qualities of this sector. According to World Tourism Council report of 2017, the direct contribution of Travel & Tourism to GDP in 2016 was BDT421.4bn (2.2% of GDP). This primarily reflects the economic activity generated by industries such as hotels, travel agents, airlines and other passenger transportation services (excluding commuter services). But it also includes, for example, the activities of the restaurant and leisure industries directly supported by tourists.

The table 5 shows data of no of both national and interational tourist arrival in revenue generation from fiscal year 2001-02 to 2016-17.

Table-5: No of both domestic and foreign tourist arrival in revenue generation from fiscal year 2001-02 to 2016-17.

Economic Year	Number of Tourist			Revenue (BDT)
	Domestic	Foreigner	Total	
2001-02	58737	432	59169	1137839
2002-03	49366	727	50093	1741050
2003-04	46887	1941	48828	2037559
2004-05	69078	2124	71202	1827155
2005-06	92632	1582	94214	3287388
2006-07	94745	1257	96002	2965868
2007-08	83709	1479	85188	2745730
2008-09	97721	1706	99427	4419960
2009-10	117100	2156	119256	5789310
2010-11	130639	2066	132705	7875340
2011-12	223022	4016	227038	11066315
2012-13	150947	4370	155317	18351405
2013-14	97878	2662	100540	10290902
2014-15	96949	3868	100817	11296864
2015-16	123412	4763	128175	13355660
2016-17	181195	2295	183490	13993465
2017-18	219002	2967	221969	19698954

Source: Forest department, Khulna

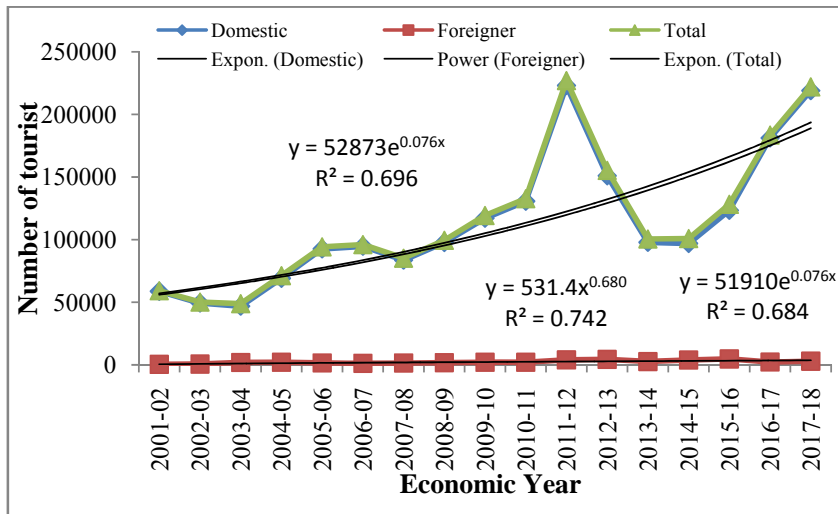


Figure-30: Number of tourist arrival in respective financial year

Figure 30 and 31 shows information about number of tourists are visited and revenue generation respectively in Sundarbans over a 17 years period from fiscal year 2001-02 to 2017-18. Overall there were an increase of both no. of tourists and revenue during this period. But it was not steady growth of no of tourist from 2001-02 to 2007-08 along with foreigners. After that a sharp rise of visitors and it booms in 2011-12. A rapid decline in 2013-14 and it dramatically uptrends from 2014-15 to 2017-18. Revenue income nearly similar trends because it follows or depends on no of visitors. It also notable that in the economic year 2011-12 height no of visitor visited Sundarbans that was 223022 and it starts to decline in 2012-13. But revenue income was at peak in 20112-13 that was 18351405 taka though its start to fall of no of visitors.

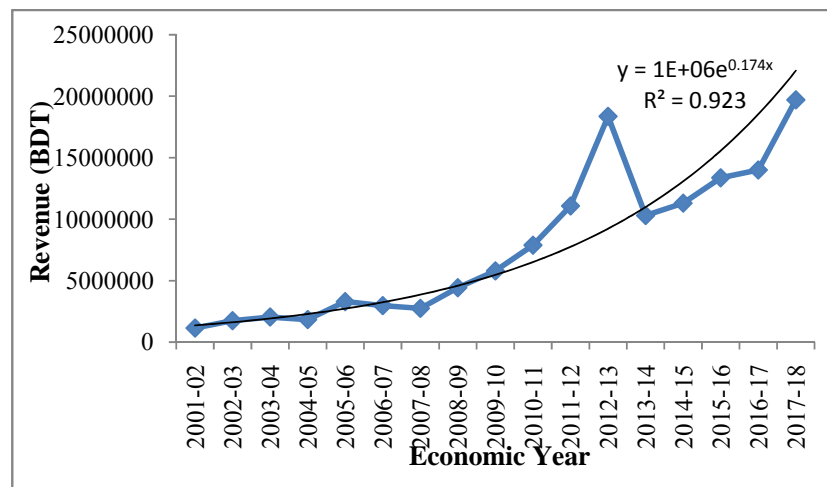


Figure-31: Revenue income in respective financial year

### 3.2.4 Sustainability of ecotourism in Sundarbans

Sundarbans is a naturally affluent biodiversity region and an extraordinary vacationer location in Bangladesh and has the incredible potential to be created and advanced as a significant maintainable the tourism destination in Bangladesh. This part of study elucidates the tourists understanding of concept of sustainable tourism, community development through ecotourism, behavior to wildlife, awareness about environment, waste disposal, marketing of ecotourism and awareness activities of authority and other factors affecting the sustainability of the ecotourism in Sundarbans through perception analysis and other measurements to make Sundarbans as a sustainable tourism destination.

#### 3.2.4.1 Understanding the concept of sustainable tourism

Tourists are asked to know about concept of sustainable tourism, 55% of the respondent informed they are somewhat familiar about sustainable tourism, 30% informed very familiar and rest of 15% are unfamiliar. So most of the tourists visiting Sundarbans are not well known about sustainable tourism and they must be provided information to not disturb environment by tourism activity. Here authority should provide necessary information and the roles and responsibility of tourist while visiting in a nature based place.

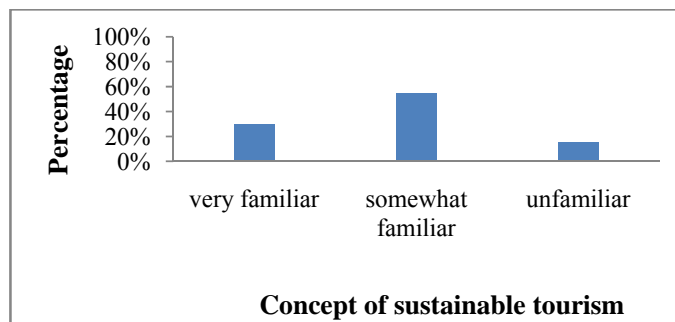


Figure-32: Concept of sustainable tourism

#### 3.2.4.2 Offer food to animals

Forests in Bangladesh are home to many species of indigenous trees, plants, insects, birds and animals, some of them are rare. The forests also ensure a much needed habitat for endangered biodiversity as mentioned. The chart shows 78 percent of the respondent not offer to food to wildlife whereas 22 percent offer food specially monkey and deer while visiting Sundarbans. It is observed that wild spotted deer were being fed junk food from the snack food stand in few spot.

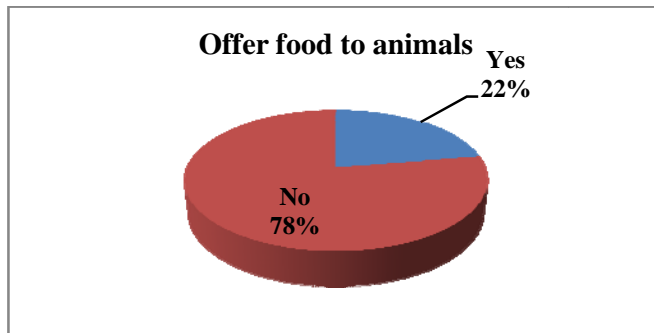


Figure-33: Offer food to animals

### 3.2.4.3 Throwing of wastages

Natural cleanliness majorly affects the picture of the tourism division where the early introduction of the guest is regularly his last. In the question of throwing wastes that was generated by tourist figure 4.10 shows 45 percent of the tourist's response of throwing wastages was to the forest. 20 percent and 15 percent of the tourist response was roadside and river respectively. Only 20 percent of the tourists thrown wastages to the waste box. A conclusion can be drawn that tourists need more awareness about cleanliness of tourist's places like ecologically rich Sundarbans.

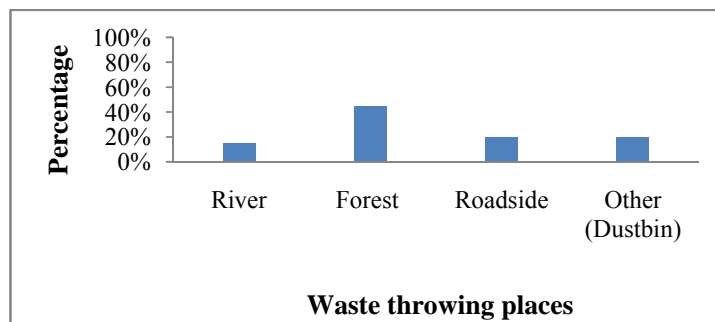


Figure-34: Throwing of wastages by tourists

### 3.2.4.4 Compatibility of natural resource protection and tourism

Ecotourism destination may advantage as upgraded competitiveness from the insurance of value regular assets while the protection of characteristic assets is progressively esteemed on the grounds because the economic benefit drive from the ecotourism industry are associated with symbiotic relationship. There is a good response of perception of people that natural resource can be protected by tourism as 35% agree with the statement, 30% strongly believe and 8% disagree with the statement. 27% of the respondent has no idea about the statement. It

can be said ecotourism can be a way to raise awareness of environmental values and can be used as a tool for financial protection of natural resources.

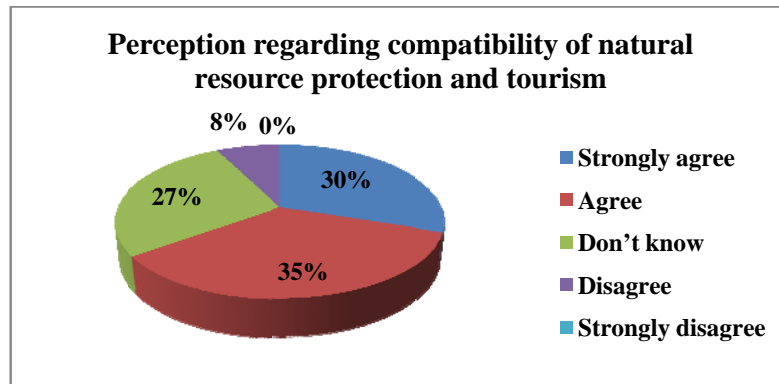


Figure-35: Perception regarding compatibility of natural resource protection and tourism

### 3.2.4.5 Community benefit from ecotourism

Numerous destitute individuals from ecotourism spots like boatman, local area expert, tea slow down or little basic food item retailer, day worker, photographer, little and medium entrepreneurs are engaging in tourism activities find tourism as a stable source of income. It is found that 63% of the people agreed and 37% are strongly agreed that local community is benefited from developing ecotourism in Sundarbans. None were disagreed with the statement. The people adjacent area of Sundarbans is directly and indirectly getting benefits from the tourism activity. So community involvement for the ecotourism action in Sundarbans very satisfactory.

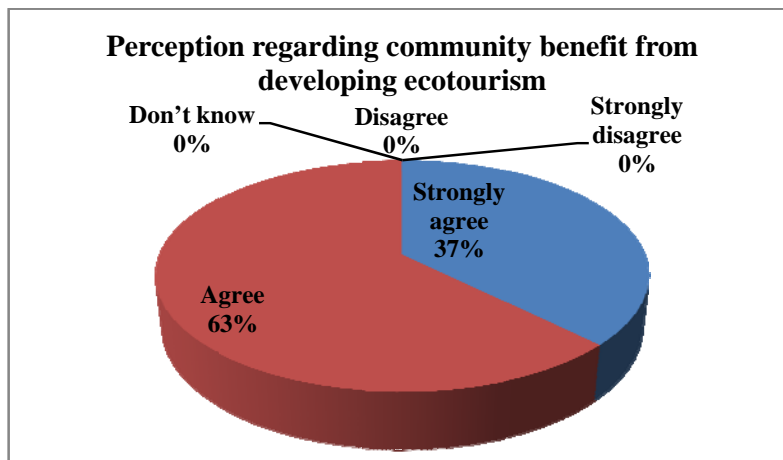


Figure-36: Perception regarding community benefit from developing ecotourism



### 3.2.4.6 Perception regarding well managed attraction

When tourists are asked about their perception regarding well managed attraction to attract ecotourism, below chart 4.11 shows a great positive response as 55% and 27% of the respondent strongly agreed and agreed respectively. 18% have no idea about this. It indicates people's opinion that a well-developed tourists place with all the facilities like infrastructure development, accommodation, restaurants, transportation, washroom facilities and so on with proper marketing is the main pillars of tourist's attraction.

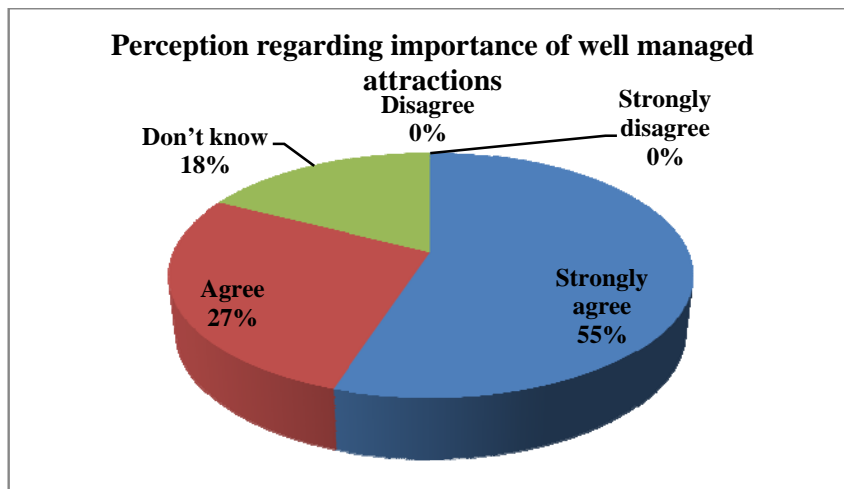


Figure-37: Perception regarding importance of well managed attractions

### 3.2.4.7 Perception regarding marketing tourism in environment

Tourism industry is fully publicity oriented. It needs to promote the tourism items in the neighborhood and worldwide business sectors through customary commercial in nearby and global media, reasonable, production of new film, refreshed data based site, distribution of new organizers, booklets and so on. when people are asked about their opinion that ecotourism in Sundarbans is marketed properly or not, 47% of the respondent agreed with the statement, 17% are strongly agreed, 20% disagreed, 13% strongly disagreed. Ascent of online media or systems administration stages permitting people and tourists to associate and offer their perspectives and views with possibly unlimited virtual networks. It is observed that many local tour operators are now marked Sundarbans tourism through social media like Facebook, YouTube for their business.

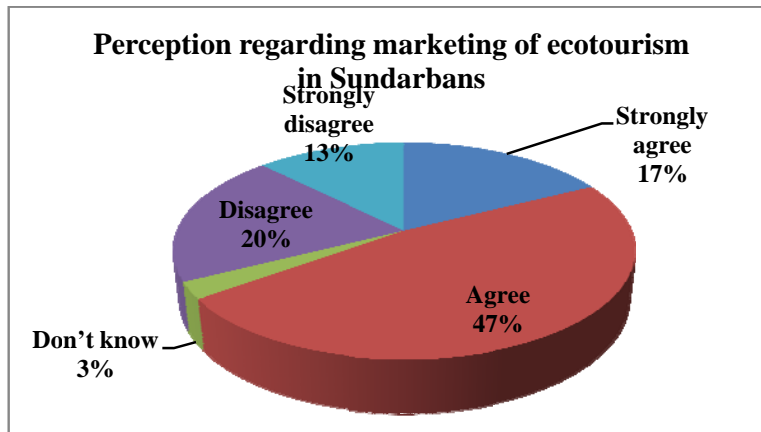


Figure-38: Perception regarding marketing of ecotourism in Sundarbans

### 3.2.4.8 Perception regarding effect of tourism in environmental degradation

Ecotourism promotes environmental education to tourists. This training encourages sightseers to foster ecologically responsive mentalities for Eco travelers into advocates for the visited region after getting back. As a tourists view, below chart 4.10 shows that 35% tourists opinion that environment is degraded by tourism. 22% strongly agreed, whereas, 15% disagree with the statement, 13% strongly disagreed. It means most of the people currently believe that ecotourism has a negative impact on Sundarbans.

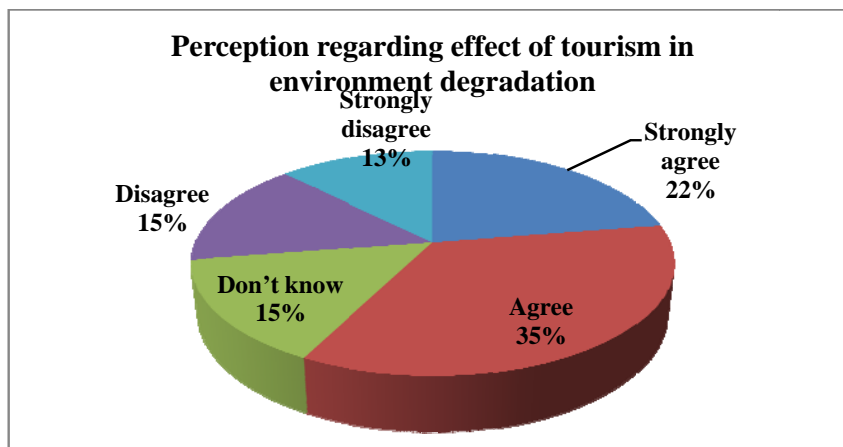


Figure-39: Perception regarding effect of ecotourism in environment degradation

### 3.2.5 Overall impression of the respondents

Tourists fulfillment is a post utilization evaluation of the administrations received and is totally reliant on objective picture. It is critical to consider the manner in which a tourist feels about the destinations they visit. At the hour of visiting each traveler has a few assumptions

regarding the destination, which prompts various degrees of fulfillment and disappointment. Various types of vacationers arrive at a specific location with a particular target and if the goal isn't satisfied the traveler dislike to visit the site again or prescribe the site to other people. Sundarbans is a world famous tourist mangrove forest this segment of this study is to explore overall tourists impression on different tourism produces and services that will further aid stakeholder to create satisfactory ecotourism products.

### 3.2.5.1 Overall satisfaction of tourists in Sundarbans

A tourist location ought to satisfy the desires for the traveler or tourists including the tourism items and market. A complete image is significant since it firmly impacts dynamic conduct of expected travelers and fulfillment level dependent on their tourist experience. When the tourists are asked about overall satisfaction of their visit in Sundarbans as a tourist destination the below graph 4.12 shows 52% of the respondent are satisfied for their tour, 28% are neutral that they are not completely satisfied but not dissatisfied. Very few of the respondents are actually dissatisfied.

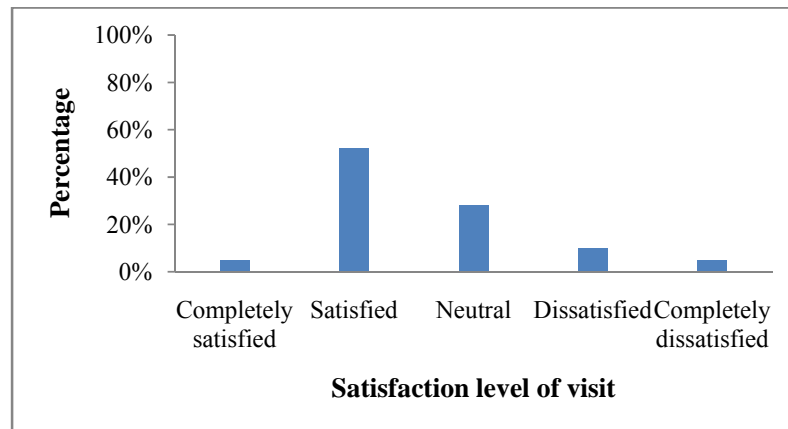


Figure-40: Satisfaction level of visitors in Sundarbans

### 3.2.5.2 Tourist opinion to improve Sundarbans as an ecotourism site

It is very important to identify the lack of facility of a tourist destination and what is needed to develop to improve a destination as an ecotourism site. Tourists opinion here is a must needed activity that can help to develop a tourist destination. From the tourists view while visiting Sundarbans, they think some action needed to develop to attract more tourists in Sundarbans.

**Table-6: Tourists opinion on facilities to develop**

Opinion	No of Opinion	Percentage
Restaurant	18	27%
Transportation	12	18%
Accommodation	10	15%
Drinking water	10	15%
Security	9	14%
Guide	4	6%
Cleanliness	3	5%

Above table 6 shows, tourists are facing lack of restaurants is the major problem in Sundarbans tourism as 27% opinion give for improving the facility. Peoples have no way to take food other than to carry from outside. Harvested rain water and pond water is the only source for fresh drinking water and there should be availability of bottled water. Most tourists are advised to develop restaurant and drinking water facilities, and then transportation is also big concern. Because many tourists are using small risky boat to enter Sundarbans. Increase accommodation facilities only limited by ship cruiser are also recommended by visitors. Security, availability of skilled guide and cleanliness also concern for many visitors.

### **3.3 SWOT Analysis**

A SWOT analysis is an organized planning strategy used to assess the strengths, shortcomings, openings and threats associated with a project or a business venture. The analysis assists the organizers with being practical about what they have, what can accomplish, and where they should focus. Here this technique is applied to understand the problems and prospects of the Sundarbans in terms of tourism perspective.

#### **Strengths**

- Heaven like natural beauty of flora, fauna and river
- Rich biodiversity with fish, birds and animal
- Distinct ecotourism site
- Largest mangrove forest of the world

- Unique archaeological and World heritage site
- Largest estuarine delta of the world
- Existing tourism infrastructure

### **Weaknesses**

- Poor accommodation and restaurant facilities
- Poor safety and security
- Lack of infrastructure facilities required for international tourism
- Difficulty in accessibility
- High frequency of natural calamities like cyclonic storm
- Low involvement of local people

### **Opportunities**

- Diversification of ecotourism products
- Development of infrastructure with tourism port boat station in nearby cities
- Branding Sundarbans ecotourism and expose to world market
- Scope of adopting Private-Public-Partnership model for sustainable development
- Increase involvement of local community
- Establishing new airport in Khulna

### **Threats**

- Deforestation and animal hunter are threat for biodiversity
- Indiscriminate and unplanned growth of population causes tremendous pressure on the ecosystem
- Commercial goods carriage root inside the Sundarbans
- Increasing salinity due to low fresh water flow
- Poor coordination among tourists, local community and policy maker
- Worldwide image of poverty, natural catastrophes and corruption

The findings of this study provides an important contribution to the development of ecotourism in Sundarbans by depth analyzing of strength, weakness, opportunities and threats to enhance policy makers in decision making for better management and in planning process.

### **3.4 Discussion**

Many studies have been done on world heritage site “Sundarbans” of Bangladesh. Many points have been explored on that study such as ecosystems, community participation of tourism, sustainability, protection, sanitation, problems of ecotourism, economic, cultural and environmental impact of Sundarbans. Mangrove ecosystems are susceptible to human use and the negative impacts of visitor can be extreme. These ecosystems are relatively unique and highly productive, which might be disturbed even with a few visitors (Ellison & Farnsworth 2001). Khanomet *al.* (2004) explores some of the limitations related to ecotourism in the Sundarbans that needs to develop ecotourism. The study also identify several threats arising from tourism including inadequate facilities for accommodation, sanitation, garbage disposal, noise pollution, personal security, medical facility and logistic problem. The research also suggests a conservation tax for the management of ecotourism and conservation. The authors also comments further research on the policy integration, community participation, and microenterprise development for ecotourism that will promote ecotourism in the Sundarbans. The forest can be safely enjoyed by tourist without ever having to land. Guidelines or regulations that address the behaviors and activities of tourist on the Sundarbans can dramatically decrease the negative impacts of tourism without affecting beneficial contribution (Tershy et al. 1999). In a study by Islam et al (2011) argues that there is a need to improve the infrastructure such as cottage, training should be given to the community people involved in tourism activities due to enhance their capacity to deal with the tourists and tour operators whether government or non-government, should be encouraged to involve the local people in the tourism business. They also prescribed that local people should create aware of the prospects of alternative job opportunities in ecotourism which not only increases their earnings but also reduces their dependency on the Sundarbans and thereby helps environmental conservation. They analyze the nature of local community those are involve in tourism activity, their involvement, economic impact on them and impact of ecotourism in the Sundarbans. But the study is only focusing on community benefit on eco-tourism so the overall prospects are not explored in the study.

A dissertation by Rahman (2010) calls for the use of GIS (Geographical Information System) technology to be used as a decision-supporting tool for ecotourism planning in the Sundarbans. The study is useful in that the technology can help audit the environmental conditions of a site including examining the suitability of a location for the proposed development of an ecotourism site and managing visitor flows. While the study identifies the geographical location of tourism facilities, ranger offices, and land mass change, the fact that it is able to show climate change impacts based on this land mass change is a bigger cause to couple this technology with ecotourism development, something which the author touches upon, but does not delve into too deeply. Salamet *al.* (2000) conducted a study on Sundarbans of Bangladesh. The study tried to describe how the ecotourism protect the Sundarbans and maintain a healthy natural environment for the wildlife. The study suggested that, nature oriented tourism can play a vital role to achieve the sustainability in the reserve forests and protecting the world heritage sites as well. The major findings of the study portrait that, the native community, economy of a country and finally the regional economic condition can play a vital role for tourism development.

Islam (2011) argues that the main ecotourism activities undertaken by the local community are selling products of local handicrafts, cultural shows, amusement programs and tour guidance. The study felt that ecotourism has had some impact on the socio-cultural and economic life of their community while the impact on the economic aspect was perceived to be generally positive. The study also suggests that both the government and the non-government agencies involved in the general tourism sector should work together in order to develop community based ecotourism in the Sundarbans. In a case study done by Sumon (2014) recommend that the Sundarbans has only 4-5 spots which people can visit but it can be extended to 10 to 15 spots more and usually visitors stay in the mini ship but there can be floating resorts which will attract the tourists more. Rahman and Shahid (2012) conducted a research on the growing dilemma of tourism specially ecotourism and sustainable development in the context of Bangladesh. The researchers tried to provide an impression of how ecotourism destination appeared as core elements of sustainable development of Bangladesh. Furthermore, to become a major ecotourism destination, they have recommended and pointed out some of the marketing strategies for developing the sector. Das and Bandyopadhyay (2013) claim that currently tourism in the Sundarbans is not eco-friendly and it does not provide tourists with a good variety of activities to participate in.

Banerjee (2014) suggests for Jungle Camps be a promotional and conservational tool for ecotourism to reduce man-tiger conflict in Sundarbans.

Based on the above analysis of literature no works have been found, which analyze directly on problem and prospects of ecotourism in Sundarbans in Bangladesh. Therefore, an initiative has been taken to address the issue. Furthermore, contribute some suggestions for the concerned authority of tourism industry in Bangladesh for developing a sustainable ecotourism destination.

### **3.5 Findings**

This research represents the findings of an inquiry into the theoretical as well as empirical aspects of upliftment and prospects of ecotourism industry in Sundarbans. This study takes attempts by examining throughout some issues of tourism to uphold the potentiality of development of ecotourism in Sundarbans.

- Sundarbans is a promising tourist destination and becoming popular day by day. Peoples love here natural scenery, wildlife, cruising in river that is the big potential for tourism. Tourism programs are not structured and the volume of tourists entering the Sundarbans is also not very high. The Guide Tours have been taking their cruise ships. Their trips are very structured and involve a variety of different activities for travelers. The Guide Tours who have recognized the potential of eco-tourism in the Sundarbans and they can be used as springboards to further tourism success. Private tour operators is seen as the key to eco-tourism flourishing in the Sundarbans.
- Dhaka is the capital of Bangladesh and accordingly the fundamental takeoff point for most of the visitors, domestic and international. Khulna is the door city to the Sundarbans, where transports, boats and hotels are found for explorers getting ready for takeoff. Khulna is the main departure port for international visitors boarding overnight ships heading to the Sundarbans. Mongla is a small port city where a wide variety of small boats are available for day trips to the most accessible parts of the reserve.
- The current administration methodologies for entrance are not successful and should be reevaluated. Most spots in the Sundarbans are as of now not set with a framework that



will handle the amount of visitation it is currently receiving without harmful impacts. Forest facilities were not planned or located with considering vacationers. Therefore the security of visitors and adequacy of staff is undermined. A portion of the current issues incorporate effects on flora and fauna, waste/littering, sewage, disintegration, noise, absence of sufficient data.

- The study found that there is good scope of tremendous investment to promote ecotourism in Sundarbans. It can be a hub of tourism economy. Currently revenue generation is not too much. It has big prospects of ecotourism markets that can attract more domestic and foreign travelers which can be a dynamic place for national income upliftment through creating employment opportunity and income generation.
- It is found that Tourists has the mix idea of ecotourism. Maximum tourists believe biodiversity of Sundarbans is hampered by tourism activity but they also agreed with natural resource protection and ecotourism can be compatible if tourism activity are maintained and guided properly by authority. Currently, tourism in the Sundarbans is not eco-friendly and it does not provide tourists with a good variety of activities to participate in.
- Safety and security is not sufficient in Sundarbans. It is a big concern for tourists. The sufficient security and safety efforts should be taken to secure the travelers and tourists by the tourism stakeholders are not adequate. Probably it is the main cause to arrive foreign tourists in Sundarbans as well as lack of proper infrastructure.
- Peoples are mostly satisfied after visiting Sundarbans but they mention many problems like poor accommodation, getting food, drinking water, safety and security as well as restroom problems. Satisfaction basically comes from the feeling to get touch of haven like nature. But tourists are recommended to improve all the facility especially supply of drinking water.
- SWOT analysis uncovers the qualities and shortcomings, openings and strings of the tourism sectors of Bangladesh. This investigation will help tourism stakeholders to take a more to more compressive choice for their key arranging measure.

## RECOMMENDATION AND CONCLUSION

### 4.1 Recommendation

In order to achieve the objectives of this study, specific plan and development program or strategies should be created and implemented to promote ecotourism in Sundarbans. The following recommendations are prescribed based upon the findings of the study:

**Tourism products and service development:** Sundarbans is endowed with diverse climatic zone, abundant of wildlife, sandy beaches, archaeological sites and diverse cultures. It should fully exploit this potential for tourism enhancement. There is a need to diversify the tourist attractions to achieve balanced growth and maximize the benefits through tourism industry. It is important and necessary to realize the full potential of existing tourist facilities in Sundarbans which demands developing of new quality and diversified tourist's product that include developing the infrastructure, accessibility to tourist products through legislation and regulations by ensuring through community involvement .

**Marketing:** Positive image of our tourism industry needs to be created that Bangladesh truly becomes a favorite tourist destination. Bangladesh could easily become an attractive holiday destination point if marketing and promotional activities can be done properly by focusing its natural scenery, wildlife especially famous royal Bengal tiger, and river cruising and other product elements. Our diplomats, ambassadors, consular by representing Bangladesh in different countries of the world can play a big role to attract foreign tourists.

Bangladesh Parjatan Corporation may arrange different promotional activities for ecotourism in Sundarbans by publishing special brochures and other promotional materials and distributing abroad through all foreign missions of Bangladesh. They can participate in international tourism fairs, publication of features and advertisements in trade journals home and abroad could also enable the country to promote its ecotourism scope. Marketing strategies also needed in policy including of identifying and locating the target market. Social media can be effective tools for marketing of ecotourism in Sundarbans because through social media like Facebook, YouTube, and different blogs tourism stakeholder can communicate with larger community.

**Information Centre for tourists:** A website could be lunch with available information about Sundarbans, where tourists can get all information about scenic beauty, wildlife, nature of the forest and all tourist's activities and facilities. Moreover, this web site can provide the information exclusively about the Sundarbans, where researcher from home and abroad can get necessary information to conduct research and can protect the endanger species from extinction. Also an information center can be established in nearest city Khulna and capital Dhaka to get necessary information for tourists.

**Infrastructure Development:** Ecotourism attraction largely depends on well-established infrastructure. The existence of well-functioning transportation system, adequate and standard accommodation facilities, food and drinking water facilities are vital for ecotourism in Sundarbans that comforts the accessibility, efficiency and quality services for the benefit of the tourist. A well infrastructure development strategies and plan and its implementation is essential, where all types of facility for tourists with environmental conservation can be ensured.

**Departure and entry Stations:** Currently Khulna and Mongla are mainly used as departure point for overnight cruise trips and day trips and Koromjol is the first entry point. But the departure point and entry station is not well structured. Well-structured departure port for tourists can be established in Khulna and Mongla where all the fees, taxes and levies can be collected in a same point that may help tourists with less harassment. Priorities have to be given Mongla to take off for day use sites and Khulna to take off for overnight cruises. Construction and installment of information board and/or Kiosks will help tourist.

**Jetties and vessels:** Vessels likewise require particular plan for sightseers and engineering to withstand wave and water activity. Design and locate jetties in a way that vessels can tie up securely in both high and low tides also to avoid river bank erosion.

**Cleanliness and hygiene:** Lack of quality and available public toilets is the big problem in our tourism sector. It should be provided quality and clean washrooms separately for men and women for all sites in Sundarbans that allow visitors. Regularly cleaning of washroom and setup of waste box in different places to maintain hygiene in all spots.

**Safety and security:** Satisfactory safety and security of the tourists ought to be guaranteed to eliminate negative scenario. To maintain security for ecotourism in Sundarbans need to eradicate all types of terrorism activity by law enforcing agents. Tourist's police activity can be expanded in Sundarbans along with coastguard. Safety from the point of view of tour operator using lifesaving equipment (life vests, maps etc. should be ensured in ship. Fire protecting equipment's also has to be ensures in hotels and vessels. Unlicensed tourist guide, shops, hotels and restaurants should be restricted for safeties of tourists.

**Development of Human Resource:** Tourism is now a big growing sector for revenue earnings with a high employment creation potential in the world. To compete in this sector we need to train professionals including service provider to worker. Therefore, a requirement for formal and in-administration training, supplemental classes, workshops, seminars, study tours in this arena. Strategies has to take for employment and human resource development investing in training of qualified local personnel to fulfill the necessities and demands of the tourist and developing comprehensive skills to expand ecotourism.

**Awareness building about environmental protection among tourist:** Public awareness need to be raised for conceding the necessities of ecotourism among the tourists. The enormous beauty of the Sundarbans should be preserved for holiday tourists. Environmental importance and need for biodiversity conservation should be disseminated to stakeholders by campaigning through electronic, print media.

**Community engagement:** If local people can be engaged with ecotourism exercises they becomes cautious about the protection of environment, ecosystem and heritages of the Sundarbans, this will shape a major advance toward Sustainable Tourism development in Sundarbans. The local community ought to be urged to offer more in each phase of planning and implementation of policies to brand Sundarbans as a sustainable tourism spots.

## 4.2 Conclusion

Tourism sector turns into a fast lifting developing industry in the world and has achieved the inspiring advancement in terms of foreign currency profit earning. The contribution of the tourism sector in the economy of Bangladesh is extremely insignificant. The world legacy site can be an entryway for the financial improvement of Bangladesh. The largest Sundarbans mangrove reserve forest has high potential of developing ecotourism in terms of tourist attractions, employment, economic benefits and environment conservation. It is connected with numerous elements, for example, infrastructure, accommodation, transportation, facilities and pleasantries. Above all, emphasis has to be given on safety and security of the tourists and travelers, arrangement of hygienic food and beverage. One of the most important matters to establish an airport in Khulna or Bagerhat and good road and rail communication for tourist arrivals. Marketing of ecotourism facilities and activities are also needed globally with a brand name to attract global tourist. An alternative eco-friendly income generating approach would upkeep the sustainability of this globally important mangrove forest. Ecotourism might be a good approach to protect the forest resources by getting these opportunities that will generate money for the local community. Thus, entire community will be aware and motivated to conserve the natural resources of the Sundarbans by sensitizing about the environment because environmental education can best achieved through ecotourism. This attempt will also reduce their dependence on the forest. Government should uphold local tourism advancement projects, plan and execution of sound ecotourism strategy with strengthening technical and financial capacities of tour operators as well as training and awareness program. An integrated strategic plan is vital to attract a great number of foreign tourists as well as the development of this industry. This study will help the stakeholder to take initiatives in the development of ecotourism in Sundarbans. Further studies on the policy formulation, community engagement, enterprise development for ecotourism will reveal better management of ecotourism in the Sundarbans.

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## Appendix

### Prospects of Eco-tourism in the Sundarbans Interview questions for visitors

**Disclaimer:** Your response via this questionnaire will be used strictly for academic/ research purposes. There will not be any commercial solicitation or usage of the response in any kind / form whatsoever.

#### Date and location

Name:	Village:
Upazila:	District:
Name of tourist place:	Date of visit:

#### Basic information of respondent

01. Age  
 Under 18  18-30  31-40  41-50  Above 50
02. Gender  
 Male  Female  others (specify)
03. Profession  
 Student  Researcher  Service  Business  Other  
(specify).....
04. Marital status  
 Single  Married  Divorced
05. Religion  
 Islam  Sonaton  Christian  Budhist  others  
(specify).....
06. Monthly Income level  
 Less than 15000  15000-30000  30001-45000  45001-60000  Above 60000
07. Level of education  
 Primary School  Secondary School  Higher Secondary  Bachelor  Master or above

08. Nationality

- Bangladeshi       Other (Specify).....

### Potential of ecotourism in the Sundarbans

09. What are your main interests in selecting a tourism site in the Sundarbans?

- Leisure  Health    Religious reason    Business    Education    Research    Others

10. How did you know/ hear about the tourism in the Sundarbans?

- Radio  Television       Newspaper       Internet  Friend and relatives  Travel agency  Others

11. What affected you to travel to the Sundarbans?

- Trees and plants    Wildlife  enjoying nature    River cruising    Cultural heritage sites    others (specify).....

12. How did you arrive to the Sundarbans?

- Airline and bus    Train and bus    Bus alone    Car    Ship    Engine boat    Others (specify).....

13. What was the main mode of transportation that you used during the tour in/ and around Sundarbans?

- Ship  Engine boat       Boat without engine  Others (specify).....

14. Please evaluate the quality of your transportation.

1: Poor 2: Average 3: Good 4: Very Good 5: Excellent

15. Do you think an accommodation facility is satisfactory enough in Sundarbans?

- Yes                       No

16. Is there any digital booking system available for accommodation facilities?

- Yes                       No

17. Please evaluate the quality of your accommodation

1: Poor 2: Average 3: Good 4: Very Good 5: Excellent

18. Is there enough security for tourist?

- Yes                       No

19. Please evaluate the quality of security arranged by the authority

1: Poor 2: Average 3: Good 4: Very Good 5: Excellent

20. Is there available restaurant?

- Yes                       No

21. Please evaluate the quality of restaurant where you had your meal

1: Poor 2: Average 3: Good 4: Very Good 5: Excellent

22. Is there any cultural activities?

- Yes                       No

23. What about the friendliness of the local people?

- Friendly                       Very friendly                       Not friendly

24. Are the climatic conditions favorable for the tourist?

Strongly agree     Agree    Don't know     Disagree     Strongly disagree

25. Is there any tourist guide available?

Yes                       No

If yes, does tourist guide has the knowledge of eco-friendly tourism?

Yes                       No

26. What did you LIKE the most during your visit to Sundarbans and the surrounding area?

Ans:

27. What are the most challenging problems that you faced during the tour?

Ans.....

28. What do you think are the strengths different sites of Sundarbans could be exploited to attract more tourists?

Ans.:

<b>Economic contribution of ecotourism</b>
<p>29. Is this your first visit to the Sundarbans?</p> <p> <input type="checkbox"/> Yes                      <input type="checkbox"/> No         </p> <p>If No then how many times have you visited Sundarbans?</p> <p> <input type="checkbox"/> Once                      <input type="checkbox"/> Twice   <input type="checkbox"/> Three   <input type="checkbox"/> More than three         </p> <p>30. How long were you visited Sundarbans</p> <p> <input type="checkbox"/> Less than 3 day                      <input type="checkbox"/> 3-6 day                      <input type="checkbox"/> 7-9 day                      <input type="checkbox"/> more than 9 days         </p> <p>31. Who doyou usually travel with?</p> <p> <input type="checkbox"/> Alone                      <input type="checkbox"/> Friends                      <input type="checkbox"/> Family                      <input type="checkbox"/> as a couple   <input type="checkbox"/> Tour operator         </p> <p>32. How much money you have spent for this tour?</p> <p>Ans: Total.....BDT</p> <p style="padding-left: 40px;">a. Transportation (plane ticket, bus ticket, taxi, etc.). Approx. _____BDT</p> <p style="padding-left: 40px;">b. Accommodation. Approx. _____ BDT</p> <p style="padding-left: 40px;">c. Food (Restaurants and others) Approx. _____ BDT</p> <p style="padding-left: 40px;">d. Souvenirs. Approx. _____BDT</p> <p style="padding-left: 40px;">e. Shopping. Approx. _____BDT</p> <p style="padding-left: 40px;">f. Other expensesApprox. _____BDT</p>

**Sustainability of ecotourism in the Sundarbans**

33. Do you believe you understand the concept of sustainable tourism?  
 Very familiar       somewhat familiar       unfamiliar
34. Have you received any prior information/ instructions from the authority about the roles and responsibilities of tourists?  
 Yes       No
35. Do you offer food to the animals you have visited?  
 Yes       No
36. Where you throw the waste generated by you/ your friends and family during the tour?  
 River       Forest       Roadside       other (specify).....
37. Do you believe natural resource protection and tourism can be compatible?  
 Strongly agree       Agree       Don't know       Disagree       Strongly disagree
38. Do you believe community would benefit from developing ecotourism?  
 Strongly agree       Agree       Don't know       Disagree       Strongly disagree
39. Do you believe well managed attractions are important to attract ecotourism?  
 Strongly agree       Agree       Don't know       Disagree       Strongly disagree
40. Do you think ecotourism in Sundarbans is marketed properly?  
 Strongly agree       Agree       Don't know       Disagree       Strongly disagree
41. Do you think environment is degraded in Sundarbans by tourism?  
 Strongly agree       Agree       Don't know       Disagree       Strongly disagree

**Overall impression of the respondent**

42. What is your overall satisfaction with your visit to this tourist destination?  
 Completely satisfied       Satisfied       Neutral       Dissatisfied       Completely dissatisfied
43. What changes would you like to see in your next visit to Sundarbans?  
Ans:.....