

Sustainable Tourism Development in Sundarbans, Bangladesh (A World Heritage Site): Issues and Actions

Mohammad Ruhual Amin*

Abstract: *Efficient management of the visitor economy at any destination not only positively contributes to the visitors' experience enhancement but also augments the opportunities available and guards the environment whilst ensuring the interest of the host community and businesses operating within it. This study is an initiative to effectively develop and manage tourism in Sundarbans, Bangladesh, a world heritage site, using sustainable measures so that a high quality visitor experiences can be ensured and the impact of tourism on Sundarbans' environment and to its host community can be managed. This study started with a destination audit and conducted a situation analysis according to some indicators suggested by the UNWTO (2004) in their guidebook "Indicators for Sustainable Development of Tourism Destination". Based on the destination audit, situation analysis, and in-depth interviews with the industry experts, a set of issues has been identified which Sundarbans is currently facing due to tourism. Since, each of the identified issues is different in terms of their significance and impacts; prioritization of these issues has been prepared to address them. Moreover, the UNWTO (2007, p. 2) stated that "Destination management calls for a coalition of many organizations and interests working towards a common goal". Therefore, this study recommended a multi-level stakeholders approach to achieve the common goal 'Sustainable Tourism development and management in Sundarbans'. Finally, this study finished with an action plan along with the key stakeholders and their contributory roles for ensuring the long-term sustainability and competitiveness of Sundarbans, Bangladesh as a tourism destination.*

Keywords: *Sustainable Tourism, Sustainable Tourism Development, Prioritization Matrix, Sundarbans*

1. Introduction

On a global basis, tourism frequently reaches and surpasses appropriate limit of growth with little notice, planning, or response from related stakeholders. If tourism is not properly planned and managed, it can harm the destination's environment, can create cultural and social conflict, and alienate the communities that host tourism (UNWTO, 2007; Byrd, 2007; Choi and Sirakaya, 2006). However, in recent years, policy makers have begun to advocate sustainable destination planning for tourism with a set of management approaches. This new approach of tourism management also known as

*Associate Professor, Department of Tourism and Hospitality Management, Faculty of Business Studies, University of Dhaka.

Sustainable Tourism (ST) can help to ensure that tourism is not environmentally damaging, contributes to conservation and local community development, and provides opportunities for enhanced conservation and sustainable development (environmentally, socially, and economically). ST development manages the impacts of tourism on the destination's environment, economy and community and maintains and enhances the destination's resources for the present and future needs of both tourists and communities that host them (UNWTO, 2007; p. 12). On the other hand, well managed destinations have a high success probability to incorporate "wise growth" into their visitor economy. Efficient management of the visitor economy at any destination level not only contributes positively to the enhancement of the visitors' experience but also enhances the opportunities available and guards the environment, whilst ensuring the interest of the host community and businesses operating within it (Visit England, 2015).

The Sundarbans forest, located in the south-western part of Bangladesh adjacent to the coastline of the Bay of Bengal, is the world largest mangrove forest that covers an area of 601,700ha (Forest Department (FD), Bangladesh, 2018). There are three wildlife sanctuaries in the Sundarbans: Sundarbans West (71,502ha), Sundarbans East (31,226ha) and Sundarbans South (36,970ha), all were designated as protected areas by the IUCN in 1996 under the criteria Ib (Protected planet, 2018). Moreover, the UNESCO has declared these three sanctuaries (total 139,698ha) as world heritage site in 1997 under the criteria IX and X. The UNESCO's justification for designating Sundarbans as a world heritage site was "one of the largest remaining areas of mangroves in the world, which supports an exceptional biodiversity with a wide range of flora and fauna, including the Bengal Tiger and provides a significant example of on-going ecological processes (monsoon rains, flooding, delta formation, tidal influence and plant colonisation)" (UNESCO, 2018).

The Sundarbans is full with rich flora (334 plant, 165 algae, and 13 orchid species) and fauna (59 reptiles, 08 amphibians, 210 white fishes, 24 shrimps, 14 crabs, 43 mollusks, and 49 mammals species including the largest population (400-450) of the Royal Bengal Tigers (*Panthera tigris tigris*) in the world) (UNESCO, 2018). Moreover, it provides protection to the human settlements at the south-western Bangladesh against cyclone and tidal surges (Begum, 2015). Eastern and northern part of Sundarbans is surrounded by 5 administrative districts: Khulna, Satkhira, Bagerhat, Pirojpur, and Borguna which include 10 Upozilas (sub-districts), 152 Unions and 1,303 villages. The total population of the whole area is about 3.5 million people (BIDS, 2010). The western part of the forest is shared between India and Bangladesh, with separate management authorities. The Southern part of the forest is attached with the shoreline of the Bay of Bengal. Sundarbans is full of natural resources and provide livelihood to approximately 300,000 people who work as fishermen, wood-cutters, honey gatherer, leaves (for roofing) and grass (for matting) gatherer living at the surrounding villages (Islam, 2016).

Sundarbans is one of the top tourist destinations in Bangladesh. Since 1997, it started to gain immense popularity as a tourist destination for both domestic and foreign tourists after it enlisted as the world heritage site. In 2007, its popularity has increased even

further, after it passed the first round of the New Seven Natural Wonders of the World competition and gained the position within Top 28 finalists out of the 440th competing destinations (New 7 Wonders of Nature, 2018; The Daily Star, 2011). Consequently, both domestic and international visitors increased and more than 100,000 tourists visited Sundarbans in 2016 (Islam, 2018). However, the Integrated Resources Management Plans for Sundarbans 2010-2020 documented that the increased number of tourists at some popular tourists spots could be very alarming for Sundarbans in near future. Moreover, all of these spots crossing the limit of Physical Carrying Capacity (PCC), Real Carrying Capacity (RCC) and Effective Carrying Capacity (ECC) with an alarming margin (Begum, 2015). Furthermore, the unplanned and mass tourism in Sundarbans are making the scenario worsen and creating several environmental, economic and social issues (Helal, 2018; Islam, 2015). Therefore, ST development and management in Sundarbans is very much essential for proper management of tourists and their satisfaction and also for providing the safeguard for biodiversity, wildlife habitat, and cultural and social conflict. To address the aforesaid necessity, the aim of this study was set to effectively develop and manage tourism in Sundarbans using sustainable ways so that a high quality visitor experience can be ensured and the impact of tourism on Sundarbans' environment and to the host community can be managed.

2. Literature review:

2.1 Sustainable Tourism (ST):

ST is not a particular type of tourism rather it is an approach of tourism development and management by embracing the principles of sustainable development thus, its guidelines and management practices are pertinent for all types of tourism in all kinds of tourism destinations (UNWTO, 2013; UNEP and UNWTO, 2005; UNWTO, 2004). Its principles focus on the economic, environmental, and socio-cultural facets of tourism development and asked for an appropriate balance among these dimensions to ensure the long-term sustainability and competitiveness of tourism destinations (UNWTO, 2018). The UNWTO defined ST as "Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities" (UNEP and UNWTO, 2005, pp. 12). The ST should make optimal use of environmental resources, respect socio-cultural authenticity of host community, and provide socio-economic benefits to all stakeholders (UNWTO, 2018; UNWTO, 2013; UNWTO, 2004). Moreover, the UNEP and UNWTO exclusively identified 12 aims for ST and these are: economic viability, local prosperity, employment quality, social equity, visitor fulfilment, local control, community wellbeing, cultural richness, physical integrity, biological diversity, resource efficiency, and environmental purity (UNWTO, 2013; UNEP and UNWTO, 2005). However, the success of ST depends on the committed participation of all the relevant stakeholders and on the bold political leadership. It is not a static state of tourism rather a continuous process that requires incessant monitoring of impacts, and identifying and using necessary corrective measures to address the environmental, economic, and socio-cultural negative impacts of

tourism. It also stresses on achieving and maintaining a high level of tourist satisfaction by providing them better experiences, enhancing their knowledge about sustainability, and promoting sustainable tourism practices to them (UNWTO, 2018; UNEP and UNWTO, 2005; UNWTO, 2004).

2.2 Sustainable tourism and stakeholders:

One of the major prerequisites of ST development and management is the active participation of all relevant stakeholders in the tourism development and management process (UNWTO, 2013; UNEP and UNWTO, 2005). With similar view, other scholars (Byrd, 2007; Briassoulis, 2002; Robson and Robson, 1996; Ioannides, 1995; Gunn, 1994) claimed that, the success and proper implementation of ST in a destination notably depend on the supports from and involvement of the stakeholders. Stakeholder was defined by Freeman (1984) as “any group or individual who can affect or is affected by the achievement of the organizations objectives” (Freeman, 1984; p. 46). Moreover, the stakeholder theory from management view also suggests that, all the related stakeholders should be engaged in the total tourism development process in a destination (Byrd, 2007) and failure to identify and incorporating a single primary stakeholder group may cause the failure of the entire process (Clarkson, 1995). There are many stakeholders in the field of ST however, it is not entirely predetermined and mostly depends on the nature and context of a tourism destination. The following figure (Figure 1) demonstrates the major areas of stakeholders for ST in a typical tourism destination:

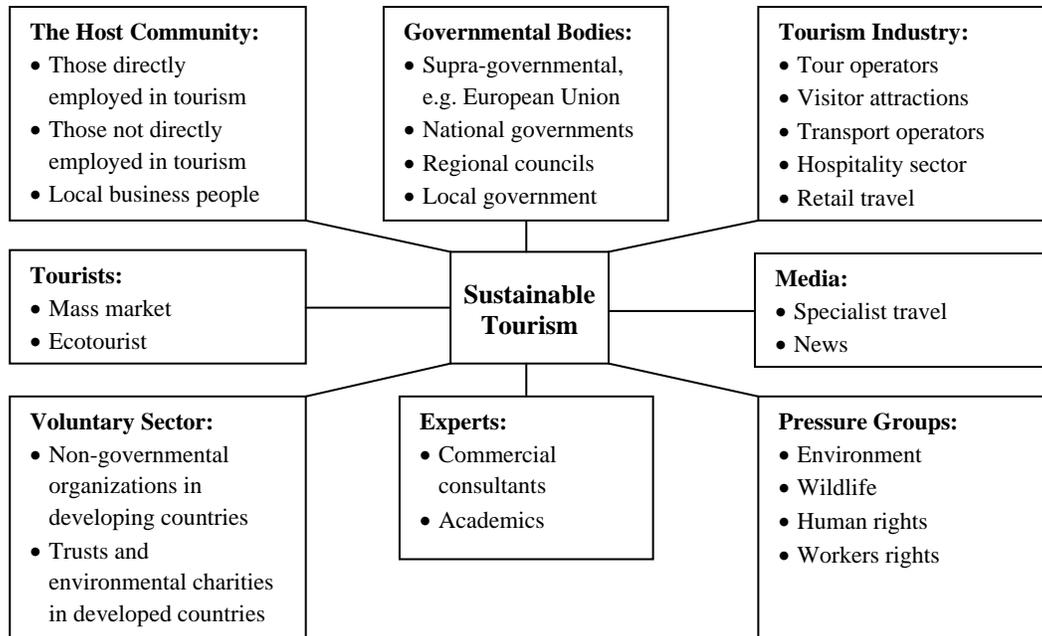


Figure 1: The key stakeholders in sustainable tourism (Source: Swarbrooke, 2010; p. 17)

After the initial understanding of ST and the importance of stakeholders' involvement in the ST development and management process, the following parts of this section would investigate the current state of tourism in Sundarbans. This would help to initially identify the key issues that Sundarbans is currently facing under environmental, economic, and socio-cultural dimensions due to tourism and which demand introducing and using corrective measures (actions) to ensure the long-term sustainability and competitiveness of Sundarbans as a tourism destination.

2.3 Tourist attractions in Sundarbans:

The following table (Table 1) depicts tourist attractions of Sundarbans:

Table 1: Tourist attractions in Sundarbans

Types	Description
Popular spot	Kotka, Karamjol, Hiron point (Nil Komol), Kochi khali (Tiger point), Dublerchar, Harbaria, and Mandbaria. However, about 85% of the total visitors visit Kotka, Kochi khali (Tiger point), Hiron point (Nil Komol), and Dublar Char during their excursion at Sundarbans (see Figure 2)
Channels	Large and small canals spread all over the forest provide great opportunities for tourists to go river cruising and jungle boating (see Figure 2)
Wildlife	Mega biodiversity with a wide range of flora (512 species) and fauna (693 species), largest population of Bengal tiger (400-450), high population of river dolphin, spotted deer, wild boar, birds, and reptiles
Forest	World largest mangrove forest, diversified ecology
Forest trails	Among the many forest trails Karamjol, Kotka, and Kochi khali forest trails are the most popular for tourists.
Beaches	Unspoiled, exotic sandy beach in the southern part (Kotka) of Sundarbans
Culture and Heritage	Diversified lifestyle of forest resource dependent village people and their own customs, traditions, and culture which is unique to Sundarbans
Source: UNESCO (2018), Islam (2016), Begum (2015), FD, Bangladesh (2018), Hassan (2012), Rahman (2010), Rahman (2000), Salam et al. (2000)	

The following figure (Figure 2) portrays the map of tourism spots and water channels in Sundarbans

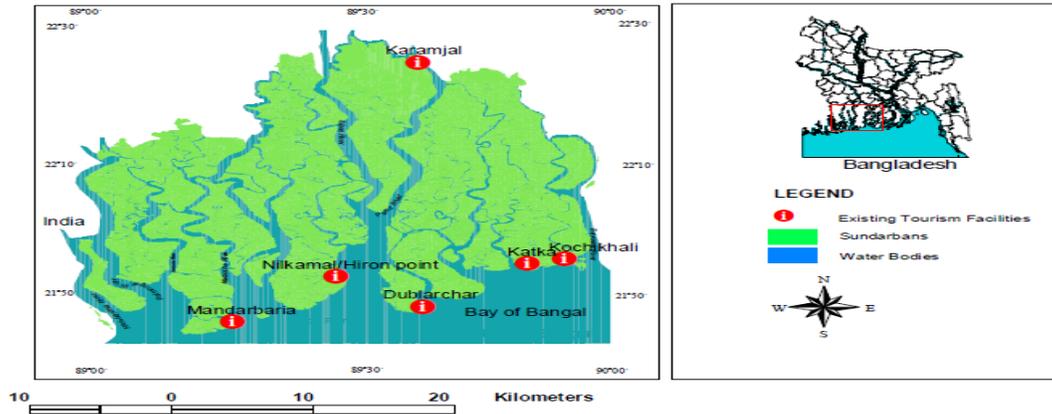


Figure 2: Maps of tourism spots and water channels at Sundarbans

2.4 Current tourism infrastructure and facilities status in Sundarbans:

Popular tourist spots in the Sundarbans experience overcrowding in the season (Nov-Mar) and crossed the limit of PCC, RCC, and ECC (Begum, 2015). The existing infrastructure and facilities are very limited to handle this large flow of tourists. Some of these places don't even have any infrastructure or tourist facilities (Hassan, 2012). Proper infrastructure and facilities are urgently needed for the control development and management of ST at Sundarbans (Hassan, 2012; Rahman, 2010). Uncontrolled visitation due to the lack of tourism infrastructure and facilities can severely damage the environment, whereas too much infrastructure and facilities will change the whole eco system (Davidson and Maitland, 1997) of the Sundarbans. A delicate balance is needed and priorities need to be given to the sites that experience high tourism demand.

2.5 Accessibility to and within Sundarbans:

Entry points to Sundarbans are imperative factor for selecting the tourist spots. Sundarbans is only accessible by water transportation (engine boats, ships, and ferryboats). Sharankhola, Bagerhat; Mongla and Burigoalini, Satkhira are the three major gateways used by tourists to visit Sundarbans. However, Bagerhat, Mongla, Satkhira are well connected with other cities and districts of Bangladesh by road. Most of the tourists select the eastern entry points (Sharankhola, Mongla) to enter the forest (Islam, 2018). Surprisingly, in spite of a large number of tourists (both domestic and international) visit Sundarbans using different water vessels, there are very limited level of safety and security measures available in these vessels for them (Islam, 2018; Helal, 2018; FD, Bangladesh, 2010).

2.6 Visitor numbers:

The visitor numbers in Sundarbans have showed a growing trend. However, the domestic visitor numbers are much higher compared to foreign visitors. About 98% of the total visitors of Sundarbans are domestic. The following table (Table 2) represents the visitor numbers at Sundarbans from 2012-17:

Table 2: Visitor numbers at Sundarbans (2012-13 to 2016-17)

Year	Visitor numbers			Percentage of visitor numbers	
	Domestic	Foreign	Total	Domestic	Foreign
2012-13	97,389	3,968	101,357	96.10%	3.9%
2013-14	100,483	3,185	103,668	96.93%	3.07%
2014-15	112,427	2,965	115,192	97.60%	2.40%
2015-16	123,032	2,770	125,802	97.80%	2.2%
2016-17 (up to January)	99,654	1,228	100,882	98.78%	1.21%

Source: Sundarbans East and West Division, FD, Bangladesh, 2017 (Islam, 2018)

2.7 Economic contribution assessment:

The major direct economic contribution of tourism to Sundarbans is the admission fee charged by the Forest Department (FD), Bangladesh. To visit the Sundarbans, the current admission fee for per domestic tourist is only BDT 150 (about \$2) per day and it is only BDT 1050 (about \$13) for per day per foreign tourist. The following table (Table 3) represents the revenue earned from the admission fee from 2012-17:

Table 3: Revenue earned from admission fee

Year	Revenue earned (BDT)	Revenue earned (\$)
2012-13	11,047,913	138,098
2016-14	11,121,830	139,022
2014-15	12,821,458	160,268
2015-16	14,853,420	185,668
2016-17 (up to January)	10,188,565	127,357

Source: Sundarbans East and West Division, FD, Bangladesh, 2017 (Islam, 2018)

However, the total economic contribution due to the tourism in Sundarbans is much higher and highly significant for Bagerhat, Satkhira, Mongla, and Khulna (gateways to Sundarbans). Groups of visitors (8-20) take the day trip by using boats operated by local fisherman or boatman. These boats charge the price between BDT 2,000 (\$25) to BDT 5,000 (\$62.5) for a day trip. Moreover, day visitors pay for their accommodation by staying at different hotels in the Mongla and Khulna. The price range of these hotels is between BDT 700 (\$12.5) to BDT 5,000 (\$60) (Helal, 2018). Day visitors also spend money on food and shopping whilst staying in these areas. On the other hand, Sundarbans is popular to visit through river cruise by launches (steel boat), ships, and ferryboats. The renting price of these vessels is between BDT 80,000 (\$1000) to BDT 120,000 (\$1500) for a 2-4 day cruise. Moreover, these vessels during their cruise provide foods that are bought and sourced from locally (Bagerhat, Satkhira, Mongla, and Khulna). On an average, the daily food cost of per person is BDT 1200 (about \$15). In the case of all inclusive packages provided by several tour operators in Bangladesh, the price of 2-3 days package tour to visit Sundarbans ranges between BDT 8,000 (\$100) to BDT 16,000 (\$200) (Helal, 2018).

2.8 Tourism management and regulation:

The FD, Bangladesh under the jurisdiction of the Ministry of Environment and Forest (MoEF), Bangladesh is currently responsible for the tourism development and management in Sundarbans. There are six admission fee collection points (one in Khulna, one in Mongla and rest are at Sundarbans: Koromjal, Kotka, Hiron point, Mandbaria) which are run and managed by the FD, Bangladesh

2.9 Competition:

In the whole south-west region of Bangladesh outdoor recreation facilities is very limited except Sundarbans. A recent study found that, in Bangladesh, Sundarbans is the most popular destination to visit after the Cox's Bazar (Hasan, 2012). However, the Indian part of Sundarbans (which has separate management authorities) is undergoing planned development and better management for ecotourism, sustainable tourism with a wide range of tourist infrastructure and facilities. Therefore, the Indian part of Sundarbans may become a major threat for Sundarbans, Bangladesh in near future if tourism is not developed and managed in a planned way along with sufficient visitor infrastructures and facilities.

2.10 Strategic Vision and Goal of Sundarbans:

2.10.1 Strategic vision:

The DF, Bangladesh already has a strategic vision for sustainable management of Sundarbans which includes ecotourism development. This study considered the existing

strategic vision for ecotourism development in Sundarbans before setting the goal and objectives for sustainable tourism development in Sundarbans.

Following are the two strategic vision set by the DF, Bangladesh for the ecotourism development in Sundarbans (IPAC, 2010; p. 57):

1. “Development and/or maintenance of specific sites, infrastructure and routes in designated areas of Sundarbans to offer quality ecotourism and recreation experiences”
2. “In order to take advantage of the increasing ecotourism, the DF will seek public/private partnerships consistent with the guidelines and principles established by the Government of Bangladesh to improve the ecotourism services and facilities”

2.10.2 Goal:

To offer an authentic and unique destination experience to visitors by taking care of and improving ecotourism, tourism infrastructure and facilities with particular focus on the needs of the environment, the local community, and the visitors which altogether will contribute to the sustainable growth and management of tourism in Sundarbans.

2.11 Strength, Weakness, Opportunities, and Threats of Tourism for Sundarbans:

EplerWood International (2009) conducted a comprehensive study on strength, weakness, opportunities, and threats of tourism in the Sundarbans reserve forest to find out the tourism potential and to guide the future sustainable development of tourism in Sundarbans. The objectives of that study were to provide recommendations for future ST development and management in Sundarbans in a planned manner and to prepare future ST development strategies. The methodology of that study was designed based on the guidelines provided by the UNWTO (2004) in “Indicators of Sustainable Development for Tourism Destinations”. The study documented the analysis on the basis following criteria:

- i. Accessibility:
 - a. Information
 - b. Transportation (Boat)
- ii. Visitor management
- iii. Benefits to community
- iv. Awareness to conservation
- v. Revenue generation
- vi. Physical impacts of tourism
- vii. Resource protection – specific to site
- viii. Socio-cultural impacts

Therefore, to prepare the intended ST destination management plan and to identify the sustainable and responsible tourism issues that need to be addressed, the authors used this report as one of the base documents and summarize the key findings to carry out the further steps.

3. Methodology

Both exploratory research design entailing desk research and in-depth interview with industry experts and single cross-sectional descriptive research design entailing survey method were followed to conduct the current study. At the early phase of the study, an extensive literature review has been done to perform the destination audit and to assess the current tourism situation of Sundarbans according to some indicators suggested by the UNWTO (2004) in “Indicators for Sustainable Development of Tourism Destination”. Following the desk research phase, a direct (non-disguised) approach of exploratory research design (in-depth interviews) (Malhotra and Dash, 2011) has been performed on the 10 ST experts of Bangladesh to gain more insights and understanding about sustainable development of tourism in Sundarbans. A set of sustainable and responsible tourism issues have been identified in these two phases which Sundarbans is currently facing due to tourism. Since each of the identified issues is different in terms of their significance and impacts, prioritization of these issues need to be prepared to address them properly.

Following the exploratory research phase, a single cross-sectional descriptive research design (survey) has been used to prepare the Prioritization Matrix (PM). The PM was designed on the basis of the criteria suggested by Tribe et al. (2000). Convenient judgemental sampling was used to collect the primary data (through administering questionnaire) from 200 sample respondents covering different stakeholders who are responsible for ST development and management in Sundarbans. Following table (Table 4) represents the detail of the sample respondents:

Table 4: Profile and number of sample respondents

Category	No. of respondents
Bangladesh Parjatan (Tourism) Corporation	05
Bangladesh Tourism Board	05
Ministry of Environment and Forest	06
DF, Bangladesh (Sundarbans East and West Division)	15
Enlisted Tour operators of Sundarbans	20
Local government	07
Port Harbour Authority (Mongla and Khulna)	07
Law enforcement authority	05
Local community	50
Tour guide	20
Tourists	60
Total	200

The structured (close-ended) questionnaire covered 9 common questions (criteria suggested by Tribe et al., 2000) for each of the identified ST issues and respondents were asked to score 1-3 (1=low, 2=Medium, 3=High) for each question. Descriptive statistics - frequency distribution analysis has been used to compile the data collected from sample respondents and to finalize the PM.

Further, keeping in mind the existing strategic vision for tourism in Sundarbans and based on the findings of the PM, a set of SMART (Specific, Measurable, Attainable, Realistic, Time Bound) objectives has been set which need to be achieved for ensuring the ST development and management in Sundarbans. However, the UNWTO (2007, p. 2) states that “Sustainable destination management calls for a collation of many organizations and interests working towards a common goal”. Therefore, a multi level stakeholder approach is required. To address this need, the study finishes with a 5 year action plan along with the key stakeholders and their contributory roles for the ST development and management in Sundarbans.

4. Data Analysis:

4.1 Identification of issues:

Following 10 noteworthy issues have been identified through the destination audit, situation analysis, and in-depth interviews with the industry experts, which need to be addressed for the ST development and management in Sundarbans:

- i. Absence of tourism bodies and related stakeholders in the current tourism development and management
- ii. Poor pre-travel and on site information availability
- iii. Lack of safety and security measures in boat transportation
- iv. High concentration of the tourists in some specific spots
- v. Low conservation awareness of tourists and local community
- vi. Poor tourism infrastructure and tourist facilities
- vii. Littering
- viii. Sewage, solid, and food waste
- ix. Lack of technical support and assistance for local community to gain benefit from tourism
- x. Absence of monitoring resources

4.2 Prioritization matrix:

The PM for the identified 10 ST issues has been prepared based on the data collected from the sample respondents and by analyzing these data using descriptive statistics

(frequency distribution analysis). Mean score were used to prepare the matrix and to compile the collected data. Further, based on the total score, the identified 10 issues have been categorized into 3 priority categories (1st, 2nd, and 3rd) for further intervention.

Following table (Table 5) represents the findings of the PM:

Table 5: Prioritization of the identified ST development and management issues

Answer	Low	Med.	High	Issues									
				i.	ii.	iii.	iv.	v.	vi.	vii.	viii.	ix.	x.
Score	1	2	3	Absence of tourism bodies, related stakeholders in tourism development & management	Poor information availability (pre-travel & on site)	Lack of safety and security (transportation)	High concentration of tourist in specific sites	Low conservation awareness	Poor tourism infrastructure and facilities	Littering	Sewage, Solid and food waste	Lack of technical skills and assistance to local community	Absence of monitoring resources
Is it easy to alleviate the issue?				1.98	2.02	2.04	1.99	2.15	2.17	2.11	2.15	2.08	2.2
Will alleviation of the issue show good results?				2.96	2.96	2.99	2.95	2.86	2.98	2.87	2.89	1.93	2.76
Is solution required urgently?				2.93	2.98	2.95	2.89	2.05	2.93	2.95	2.97	2.84	1.98
Is there necessary equipment to act against the issue?				2.05	1.05	1.2	1.15	1.06	1.43	1.55	1.15	2.02	2
Is there staff trained to deal with the issue?				1.17	1.99	1.19	1.19	1.96	1.98	1.85	2.09	2.1	1.17
Will the visitor experience be enhanced if issue is removed?				2.89	2.87	2.97	2.82	1.98	2.94	2.98	2.93	2.87	1.06
Will the site image be enhanced if the issue is removed?				1.12	2.91	2.88	1.96	2.12	2.98	2.99	2.97	1.03	1.97
Is it easy to identify probable impacts of the issue?				2.07	2.15	2.96	2.94	2.95	2.89	2.95	2.98	1.12	2.03
Priority: 21 and above: 1st priority 18 to less than 21: 2nd priority Less than 18: 3rd priority				2nd	1st	1st	2nd	2nd	1st	1st	1st	3rd	3rd

5. Discussion:

5.1 Objectives:

Based on the findings of the PM (see Table 5) and to address the identified ST development and management issues (see section 4.1), a set of SMART objectives have been determined to achieve through the short and long term destination management action plan to ensure the long-term sustainability and competitiveness of Sundarbans as a tourism destination. The hierarchy of objectives were set according to the priorities (total score) and categories were found and identified in the PM. The identified sets of objectives are presented in the following table (Table 6).

Table 6: Objectives of the short and long term destination management action plan to ensure ST development and management in Sundarbans

Priority	Objectives
1st Priority (Total score 21 and above)	<ul style="list-style-type: none"> • Reduce littering by 50% over the next 5 years • Development and execution of the sewage and waste management provision and reduce the impact by 40% over the next 5 years • Develop and maintenance of the tourist infrastructures and facilities to minimize the visitor impacts on environment and maximize the visitor experiences over the next 5 years • Develop the provision for safety and security measures for tourist in boat transportations by next year • Improve pre-travel & on-site information availability through related stakeholders participation, improving visitor information centre, brochures, site leaflets, signs, interpretation, conservation messages by next year
2nd Priority (Total score 18 to less than 21)	<ul style="list-style-type: none"> • Identification of the ecotourism spots including picnic, nature camps, trails in the core and buffer zone to regulate the visitor management, reduce the high congestion in most popular spots, and reduce the uncontrolled visitation impact on environment by next year • Ensuring participation of the tourism bodies, related stakeholders in co-management of ST development and management in Sundarbans by next year • Increase the conservation and environmental awareness with national, stakeholders, local communities and visitors over the next 5 years
3rd Priority (Total score less than 18)	<ul style="list-style-type: none"> • Providing technical assistance and support to the micro enterprises run by local community's to provide tourism services to visitors • Development and execution of the monitoring system for resource protection

5.2 Actions plan:

To address the identified prioritized issues and to reach the outlined objectives (see Table 6) for achieving ST development and management in Sundarbans, a 5 year (2019-2023) recommended action plan has been prepared along with the related stakeholders and their contributory roles. Following table (Table 7) depicts the 5 years actions plan for ST development and management in Sundarbans:

Table 7: 5 years (2018-2022) recommended action plan for ST development and management in Sundarbans

Objectives (according to priority and total score)	Recommended Actions	Responsibility	Main output/ Success criteria	Time	Comment
Reducing litter (Code: RL)	<p>RL1: Provide bins</p> <p>RL2: Provide sign and maps for location of the bins</p> <p>RL3: Introduce recycling bins</p> <p>RL4: introduce daily waste collection system</p> <p>RL5: Waste management education program for visitors, management staffs: reduce, recycle</p> <p>RL6: Educate visitors to put litter on provided bins</p>	<p>RL1: Ministry of Environment and Forest (MoEF), Department of Forest (DoF)</p> <p>RL2: DoF, Ministry of Civil aviation and Tourism (MoCAT), Bangladesh Parjatan (tourism) Corporation (BPC)</p> <p>RL3-RL4: Department of Environment (DoE)</p> <p>RL5: MoCAT, DoF, NGOs</p> <p>RL6: MoCAT, MoEF, NGOs with cooperation with national, regional and local medias</p>	<ul style="list-style-type: none"> • Threats on Sundarbans ecosystem will be mitigated • Visible litter will be reduce • Visitor experience will be improved • Site image will be enhanced 	<p>RL1-RL4: By 2019-ongoing</p> <p>RL5: 6 workshops and seminar in a year up to 2020 then 4 workshops and seminar up to 2023</p> <p>RL6: From 2019-ongoing</p>	<ul style="list-style-type: none"> • Will be carry on until new regulations taken by the respective authorities • Refresh in every 6 months

<p>Waste Management (Code: WM)</p>	<p>WM1: Improve existing toilets in the tourism spots</p> <p>WM2: Law prohibiting the disposal of sewage and food waste from the boats and ships into the river and canals</p> <p>WM3: Law requiring boats and ships to provide on-board bins for litter</p> <p>WM4: Educate the boat and ships operators about the environmental impacts of waste on the water system of the forest</p> <p>WM5: Enforce the law including penalties and fines for compulsory bins on boats and ships and not disposing any waste to the water system of the forest in any condition</p>	<p>WM1: MoEF, DoF with the assistance of private organizations</p> <p>WM2-WM3: MoEF, DoF, Boat and ships associations of Bagerhat, Mongla, Satkhira, Khulna, Port authority, Ministry of Law (MoL)</p> <p>WM4: MoEF, DoF, NGO</p> <p>WM5: Law enforcement agencies, Port authority, Monitoring Cell (MC)</p>	<ul style="list-style-type: none"> • Threats of solid, sewage, and food waste to ecology of the forest will be mitigated • Visitor experience will be improved 	<p>WM1: By 2019-ongoing</p> <p>WM2-WM3: By 2019-ongoing</p> <p>WM4: Yearly 6 workshops up to 2020 then yearly 4 workshops up to 2023</p> <p>WM5: After completing WM2-ongoing</p>	<p>—</p>
---	---	--	--	---	----------

<p>Tourism infrastructure and facilities development (Code: TIFD)</p>	<p>TIFD1: Development of entry station, toilets, observation towers, hides, vendors, shades and resting place, trails and paths on the popular and other spots according to the visitor flow and by following the environment friendly design</p> <p>TIFD2: Upgrade and repair existing guest houses in Sundarbans</p>	<p>TIFD1: MoCAT, MoEF, DoF with partnership with Private organizations</p> <p>TIFD2: DoF, Port Harbour authority, Naval Base authority</p>	<ul style="list-style-type: none"> • Visitor experience will be enhanced • Uncontrolled visitation will be controlled • Visitor negative impacts on environment (erosion, litter, threats to wildlife habit) will be mitigated 	<p>TIFD1: 2019-2023</p> <p>TIFD2: By 2020-ongoing</p>	-
<p>Safety and security measures for tourists in transportation (boat) (Code: SST)</p>	<p>SST1: Develop the provision of compulsory safety and security measures in boat transportations to carry visitors to Sundarbans</p> <p>SST2: Enforcement of the safety and security law through boats, ships associations, terminal authorities, and law enforcement agencies to all boats, and ships taking visitors to Sundarbans</p> <p>SST3: Strict action against the law breakers including fine and punishment</p> <p>SST4: Regular monitoring programme to ensure the law is in action</p>	<p>SST1 MoEF, DoF, MoCAT, MoL, Boat and ships associations of Bagerhat, Mongla, Satkhira, and Khulna</p> <p>SST2-SST4: Port authorities, Law enforcement agencies, and Local government</p>	<ul style="list-style-type: none"> • Safety and security of the visitors will be achieved 	<p>SST1: By 2019-ongoing</p> <p>SST2-SST4: From 2019-ongoing</p>	-

<p>Improvement of pre-travel and on site information availability (Code: IIA)</p>	<p>IIA1: Provision for all related stakeholders to disseminate sufficient information to tourist via their websites, brochures, leaflets</p> <p>IIA2: Improve the visitor information Centre in Bagerhat, Mongla, Satkhira, and Khulna</p> <p>IIA3: Develop visitor information centres in Karamjol and Kotka</p> <p>IIA4: Upgrade of the existing nature interpretation centres</p> <p>IIA5: Provide signs and interpretation, maps, conservation and environmental protection message on the popular sites and ecotourism spots</p>	<p>IIA1: MoCAT, DoF, Tour Operators Association of Bangladesh (TOAB), Hotel operators in Khulna and Mongla, boats and ship associations in Bagerhat, Mongla, Satkhira, Khulna, local government</p> <p>IIA2: MoCAT, Bangladesh Parjatan Corporation(BPC)</p> <p>IIA3-IIA5: MoCAT, BPC, MoEF, DoF</p>	<ul style="list-style-type: none"> On-site information availability, conservation awareness will be improved 	<p>IIA1-IIA2: By 2019-ongoing</p> <p>IIA3: By 2021-ongoing</p> <p>IIA4-IIA5: By 2020-ongoing</p>	<p>–</p>
<p>Identifying ecotourism spots including picnic, nature camps, trails in core and buffer zones (Code: IES)</p>	<p>IES1: Identifying ecotourism spot in core zone (3 wildlife sanctuaries)</p> <p>IES2: Identifying ecotourism spot in buffer zone</p> <p>IES3: Fixing and developing picnic, nature camps, trails spot in the identified ecotourism spots in core and buffer zone</p>	<p>IES1-IES2: MoEF, DoF, CMC</p> <p>IES3: MoEF, DoF, MoCAT, BPC</p>	<ul style="list-style-type: none"> Reduce the over pressure of visitors in most popular spots (Kotka, Kochi khali, Hironpoint, Dublar Char) Visitor management will be achieved 	<p>IES1-IES2: By 2019</p> <p>IES3: By 2020-ongoing</p>	<p>–</p>

<p>Co-management committee for ST development and management (Code: CCSTDM)</p>	<p>CCSTDM: Formation of the co-management committee (CMC) with the participation of tourism bodies and related stakeholders for tourism development and management in Sundarbans</p>	<p>CCSTDM: MoCAT, MoEF, DoF, BPC, TOAB, Hotel operators in Khulna and Mongla, boats and ship associations, local government, local communities</p>	<ul style="list-style-type: none"> • ST management in Sundarbans will be achieved 	<p>CCSTDM: By 2019-ongoing</p>	<p>–</p>
<p>Increase conservation and environmental awareness to local community, visitors, and management (Code: ICA)</p>	<p>ICA1: Educating programs and workshops for local community, management, stakeholders, and visitors regarding the importance, value of conservation</p> <p>ICA2: Conservation and environmental awareness programs in the national media</p> <p>ICA3: Increase of signs, posts in the Bagerhat, Mongla, Satkhira, Khulna, tourism spots with conservation, persuasive messages</p>	<p>ICA1: CMC, NGOs, MoEF, DoF</p> <p>ICA2: MoCAT, MoEF with the assistance of national electronic, print medias</p> <p>ICA3: MoCAT, BPC, DoF</p>	<ul style="list-style-type: none"> • Conservation and environment protection for Sundarbans will be enhanced in the national, regional, local, and stakeholders level 	<p>ICA1: 6 workshops in a year up to 2020 then 3 workshops in a year up to 2023</p> <p>ICA2: Intensive awareness program up to 2020 then on regular interval up to 2023</p> <p>ICA3: By 2020-ongoing</p>	<p>–</p>

<p>Technical assistance and support for local community (Code: TAS)</p>	<p>TAS1: Provide training and technical assistance as capacity building program to run the micro enterprises more effectively</p> <p>TSA2: Provide micro financing to local enterprises to provide services for tourism.</p>	<p>TAS1: NGOs, BPC, CMC</p> <p>TSA2: Grammen Bank Bangladesh (GBB), Ministry of Finance (MoF), NGOs</p>	<ul style="list-style-type: none"> Local community technical knowledge will be improved to run their tourism micro enterprises more effectively Problem of lack of capital to run the micro enterprises to serve the tourist will be mitigated 	<p>TAS1: 4 training batches in every year from 2019-ongoing</p> <p>TAS2: From 2020-ongoing</p>	-
<p>Develop and execute monitoring system (Code: DEM)</p>	<p>DEM1: Formation of a Monitoring security body to protect the environment, forest resources against uncontrolled visitation, illegal activities of local community, tourists</p> <p>DEM2: Develop regular monitoring program to protect the environment, forest resources</p>	<p>DEM1: DoF, Law enforcement agencies, CMC, local community</p> <p>DME2: MC with the assistance form DoF</p>	<ul style="list-style-type: none"> Site resource protection will be improved Controlled visitation of the visitors will improved 	<p>DEM1: By 2019</p> <p>DEM2: After DEM1 execution-ongoing</p>	-

6. Conclusion:

In 2008, Government of Bangladesh (GoB) has set the goal to develop tourism in Sundarbans in a sustainable way (FD, Bangladesh, 2010) hitherto we are too far to accomplish this goal. To address this gap, the aim of this study was set to effectively develop and manage tourism in Sundarbans using sustainable ways so that a high quality visitor experience can be ensured and the impact of tourism on Sundarbans' environment and on host community can be managed. Based on the destination audit, situation analysis, and in-depth interviews with the industry experts, this study found 10 ST

development and management issues for Sundarbans that need urgent attention of related stakeholders. Moreover, to address each of these issues, this study outlined SMART objectives based on their priority and recommends a 5 years action plan to accomplish them. However, sustainable development of tourism in Sundarbans can't be achieved without the multi-level stakeholders approach. Each of the related stakeholders should embrace their responsibilities in order to work together with harmony to achieve the common goal (UNWTO, 2007). Therefore, this study identified related stakeholders and pointed out their responsibilities whilst preparing the action plan. With the support of this study and the action plan, related stakeholders can work on each of the issues to ensure the long term sustainability (environmentally, economically, and socially) and competitiveness of Sundarbans as a tourism destination.

References

- Begum, S. (2015). *Handbook on Carrying Capacity & Management on Tourist Spots of the Sundarbans*. Khulna: Centre for Integrated Studies on the Sundarbans (CISS)
- BIDS (2010). *A Study of the Principal Market Value Chains Derived From The Sundarbans Reserve Forest*. Washington, DC: IRG, USAID. Available at: http://www.preventionweb.net/files/18616_18616nabiulislamsrreportssummaryfin.pdf (Accessed: 06 January 2018)
- Briassoulis, H. (2002). 'Sustainable tourism and the question of the commons', *Annals of Tourism Research*, Vol. 29, No. 4, pp. 1065-1085.
- Byrd, E. T. (2007). 'Stakeholders in sustainable tourism development and their roles: applying stakeholder theory to sustainable tourism development', *Tourism Review*, Vol. 62, No. 2, pp. 6-13.
- Choi, H. C. and Sirakaya, E. (2006). 'Sustainability indicators for managing community tourism', *Tourism Management*, Vol. 27, pp. 1274-1289.
- Clarkson, M. B. E. (1995). 'A stakeholder framework for analyzing and evaluation corporate social performance', *The Academy of Management Review*, Vol. 20, No. 1, pp. 92-117.
- Davidson, R. and Maitland, R. (1997). *Tourism Destinations*. 1st edn. London: Hodder & Stoughton.
- EplerWood International (2009). *Strength, Weakness, Opportunities, & Threats of Tourism in the Sundarbans Reserve Forest*. Washington, DC: IRG, USAID. Available at: http://www.eplerwood.com/beta/images//Sundarbans_Tourism_SWOT_Analysis_2009.pdf (Accessed: 07 January 2018)
- Forest Department, Bangladesh (2010). *Integrated Resources Management Plans for the Sundarbans 2010-2020*. Dhaka: Forest Department, Bangladesh. Available at: http://www.nishorgo.org/tbltd/upload/pdf/0.12860600%201357814923_SRF_IRMP_Volume1_16.1.2011%20-Revised%20Version2_6-9-11.pdf (Accessed: 17 January 2018)
- Forest Department, Bangladesh (2018). *Natural Mangrove Forest (Sundarbans)*. Available at: <http://www.bforest.gov.bd/site/page/19d63ffe-01e1-4351-b85b-3b60811b87f7> (Accessed: 12 January 2018)

- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman.
- Gunn, C. A. (1994). *Tourism planning: Basic concepts cases*. 3rd edn. Washington, D.C.: Taylor and Francis.
- Hassan, A. (2012). ‘Package Eco-Tour’ as Special Interest Tourism Product – Bangladesh Perspective’, *Developing Country Studies*, Vol. 2, No.1, pp. 1-8. Available at: <http://www.iiste.org/Journals/index.php/DCS/article/viewFile/1003/923> (Accessed: 04 January 2018)
- Helal, M. M. (2018). *Interview with Mohammad Ruhual Amin*. 11 January, Dhaka.
- Ioannides, D. (1995). ‘A flawed implementation of sustainable tourism; the experience of Akamas, Cyprus’, *Tourism Management*, Vol. 16, No. 8, pp. 583-592.
- Islam, M. R. (2018). *Interview with Mohammad Ruhual Amin*. 13 January, Dhaka.
- Islam, M. R. (2016). ‘Sundarbans at a glance’, *Bengallogistics*, 10 May. Available at: <http://bengallogistics.blogspot.com/2016/05/sundarbans-at-glance.html> (Accessed: 07 January 2018)
- Islam, M. R. (2015). ‘Eco Tourism or CBT: How Far We Are’, *Bengallogistics*, 24 August. Available at: <http://bengallogistics.blogspot.com/2016/05/sundarbans-at-glance.html> (Accessed: 14 January 2018)
- IPAC (2010). *Integrated Resources Management Plans for the Sundarbans*. Dhaka: Forest Department, Ministry of Environment and Forests. Available at: http://nishorgo.org/wp-content/uploads/2017/02/5-44-NN_SRF_IRMP_Volume-1.pdf (Accessed: 17 January 2018)
- Malhotra, N.K. and Dash, S. (2011). *Marketing research: An applied orientation*. 6th edn. New Delhi: Pearson Education India.
- New Seven Wonders of Nature (2018). *The 28 Finalists*. Available at: <https://nature.new7wonders.com/wonders/sunderbans-bangladesh-india/> (Accessed: 02 January 2018)
- Protected Planet (2018). *Sundarban West Wildlife Sanctuary*. Available at: <https://www.protectedplanet.net/sundarban-west-wildlife-sanctuary> (Accessed: 18 January 2018)
- Protected Planet (2018). *Sundarban East Wildlife Sanctuary*. Available at: <https://www.protectedplanet.net/sundarban-east-wildlife-sanctuary> (Accessed: 18 January 2018)
- Protected Planet (2018). *Sundarban South Wildlife Sanctuary*. Available at: <https://www.protectedplanet.net/sundarban-south-wildlife-sanctuary> (Accessed: 18 January 2018)
- Rahman, A. M. (2010). *Application of GIS in Ecotourism Development: A Case Study in Sundarbans, Bangladesh*, Master’s Thesis. Mid-Sweden University. Available at: <http://miun.diva-portal.org/smash/get/diva2:326461/FULLTEXT01.pdf> (Accessed: 19 January 2018)
- Rahman, L. M. (2000). ‘The Sundarbans: A Unique Wilderness of the World’, In: *USDA Forest Service Proceedings*. USA. USA: RMRS-P-15-Vol-2. pp. 143-148. Available at:

- https://www.fs.fed.us/rm/pubs/rmrs_p015_2/rmrs_p015_2_143_148.pdf (Accessed: 03 January 2018)
- Robson, J. and Robson, I. (1996). 'From shareholders to stakeholders: critical issues for tourism marketers', *Tourism Management*, Vol. 17, No. 7, pp. 583-540.
- Salam, M. A., Ross, L. G. and Beveridge, M.C.M (2000). 'Eco-tourism to protect the reserve mangrove forest the Sundarbans and its flora and fauna', *Anatolia*, 11 (1), pp. 56-66. Available at: http://www-aqua.stir.ac.uk/public/GISAP/pdfs/Bangla_tourism.pdf (Accessed: 22 January 2018)
- The Daily Star (2011). 'Sundarbans voted out of 7 wonders race', *The Daily Star*, 12 November, p. Front. Available at: <http://www.thedailystar.net/news-detail-209818> (Accessed: 12 January 2018)
- Tribe, J., Font, X., Griffiths, N., Vickery, R. and Yale, K. (2000). *Environmental Management For Rural Tourism and Recreation*. 1st edn. London: Cassell
- UNEP and UNWTO (2005). *Making Tourism More Sustainable – A Guide for Policy Makers*. France and Madrid: UNEP and UNWTO. Available at: <http://www.unep.fr/shared/publications/pdf/dtix0592xpa-tourismpolicyen.pdf> (Accessed: 05 January, 2018)
- UNESCO World Heritage Centre (2018). *The Sundarbans*. Available at: <http://whc.unesco.org/en/list/798/> (Accessed: 24 January 2018)
- UNWTO (2004). *Indicators of Sustainable Development for Tourism Destinations A Guidebook*. Madrid: UNWTO. Available at: <http://www.e-unwto.org/content/x53g07/fulltext.pdf> (Accessed: 02 February 2018)
- UNWTO (2013). *Sustainable Tourism for Development Guidebook*. 1st edn. Madrid: UNWTO. Available at: http://www.provincia.pisa.it/uploads/2013_11_7_09_48_11.pdf (Accessed: 04 February, 2018)
- UNWTO (2018). *Sustainable Development of Tourism, Definition*. Available at: <http://sdt.unwto.org/content/about-us-5> (Accessed: 04 February 2018)
- UNWTO (2007). *A Practical Guide to Tourism Destination Management*. Madrid: UNWTO.
- Visit England (2015). *Destination Management Resources*. Available at: <https://www.visitbritain.org/destination-management-resources> (Accessed: 07 January 2018)