

The Sundarbans: Sustainable tourism, livelihoods and economies involving Bangladesh and India

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Abstract

The Sundarbans, considered as the tourism heartland of South Asia and compared to Amazon rainforest for its expanse and biodiversity of flora and fauna spanning over 36,000 square kilometers, is currently at risk of massive depletion. The disaster can be avoided through sustainable tourism that minimizes negative social or environmental impacts and conserve fragile ecosystem consisting of flora and fauna and their habitats. This sustainable tourism can draw upon its basic tenets from the "Sustainable Development Goals" propagated by World Tourism Organization. For both Bangladesh and India, it is obligatory under the remit of sustainable tourism to shift policy focus from growth to equity, thus, paving the way for strong institutions capability of regulating the tourism industry and distributing assets to facilitate 'pro-poor growth' policies and actions. As the current sustainable tourism debate is patchy, disjointed and often flawed with false assumptions and arguments the discourse on sustainable tourism of the Sundarbans needs to be oriented towards a thoroughbred scientific level, a systemic perspective and an interdisciplinary approach.

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Introduction

The Sundarbans, snubbed by the British India as a large swathe of waste country, was never surveyed. Decades after the landmass was enlisted as UNESCO World Heritage sites comprised of Sundarbans National Park, Sundarbans West, Sundarbans South and Sundarbans East Wildlife Sanctuaries as four of its protected areas. Today, the Sundarbans is known as the tourism heartland of South Asia and compared to Amazon rainforest for its expanse and biodiversity of flora and fauna, this massive expanse of landmass is comprised of hundred two islands -- Bangladesh owns sixty percent and remaining owned by India (Pachali, 2019). Strangely, only fifty-four (Pachali, 2019) of these islands are inhabited by people. They live in mud thatched root houses, leaving the remaining islands to come under world's largest mangrove forest cover, sparsely dotted agricultural field, marshy land and swamps intersected by multiple tidal streams and channels.

The Sundarbans was a much bigger area up to the year 1770, spreading over the total area of around 36,000 square kilometer (Hazra, 2002). Appallingly, today, it has lost that expanse and reduced to 25,000 square kilometer (Hazra, 2002). Hence, there is a dire need for sustained tourism linking to sustainable mobility, resulting in less greenhouse gas emissions, while not affecting the economic development, job creation, and infrastructure development. The creation of employment opportunity to alleviate poverty must not put the Sundarbans fragile eco-system at risk.

Methodology

A sustainable approach to tourism always needs to take into account three key areas -- environment, society and economy. If at the basis of sustainable tourism, we have the welfare of the local community understood as: listening to the needs and requirements of residents that often coincide with those of tourism; protection and conservation, as access to places and resources must not decline because of tourism; involvement in tourism planning.

The sustainable tourism debate is patchy, disjointed and often flawed with false assumptions and arguments. It is more appropriate to align the discourse to Zhenhua Liu (2010) recommendations based on six principal issues: (1) the role of tourism demand; (2) the nature of tourism resources; (3) the imperative of intra-generational equity; (4) the role of tourism in promoting sociocultural progress; (5) the measurement of sustainability; and (6) forms of sustainable development.

The discourse on sustainable tourism of the Sundarbans needs to be oriented towards a thoroughbred scientific level, a systemic perspective and an interdisciplinary approach (Zhenhua Liu 2010).

The term "sustainable tourism," that has come to embody the entire discourse of the Sundarbans, encompass a set of principles, policy prescriptions, and management methods. The latter charts a path for tourism development such that a destination area's environmental resource base (including natural, built, and cultural features) that is protected for future development (Bramwell and Lane 1994). Sustainable tourism in the Sundarbans should not be regarded as a rigid framework, but rather as an adaptive paradigm which legitimizes a variety of approaches according to specific circumstances (Bramwell and Lane 1994).

Literature Review: Sustainable Tourism

The Sundarbans sustainable tourism must involve its inhabitants as stakeholders. If this happens it will touch the lives of some 2.5 million. Keeping in view of Erick Byrd (2007)'s suggestions on how stakeholder inclusion and involvement are incorporated in the basic concept of sustainable tourism development, both from management and public participation perspectives, the Sunderbans will survive as a pristine natural reservoir. For this to happen, the two-and-a-half million Sundarbans populations need to be formed into four distinct social groups (Byrd, 2007): 1) the present visitors; 2) future visitors; 3) present host community; and 4) future host community. The formation of these social groups will underpin questions such as (1) who should be considered stakeholders in tourism development? and (2) how should planners and developers involve stakeholders in the development of tourism? (Byrd, 2007)

Post British India, the reorganization of new nations awarded India 9630 square kilometer of the Sundarbans and the remaining, the large part of this landmass, allocated to Bangladesh (Hazra, 2002). Out of the 9630 sq. km., approximately 4264 square kilometer (Hazra, 2002) accounts for wetland and vast expanse of mangroves that constitute reserve forests. The latter is comprised of 2195 square kilometers of wetland hosting large swathes of mangroves and 2069 square kilometer of tidal river. This spread allows for some 5,366 square kilometer reclaimed area for human settlements containing 19 blocks (13 in South 24 Paraganas and 6 in the North 24 Paraganas) (Hazra, 2002).

Many of this large Sunderbans population, sustaining themselves on the breadline in widely scattered settlements, have found their sustenance from tourism, either directly or indirectly. Yet it cannot be said that they have overcome their poverty. This critical issue is aptly addressed by Spenceley and Meyer (2012) by reviewing two themes: 1) community-based tourism projects, and the focus on structural conditions; and 2) power relations between global players and local communities. Since community as a social group is organized around common values and attributed to social cohesion within a shared geographical location, the Sundarbans inhabitants need to be studied on their intent, belief, resources,

preferences, needs, risks, and a number of other conditions may be present and common, affecting the identity of the participants and their degree of cohesiveness.

Tourism and poverty reduction

On the burning issue of poverty reduction on the back of sustainable tourism leads to the exploration of four themes (Spenceley and Meyer, 2012): (1) development agency strategies and approaches; (2) governance and biodiversity conservation; (3) the assessment of tourism impacts; and (4) value chain analysis and inter-sectoral linkages. As tourism is one of the sixteen high-priority sectors in Bangladesh for incentives and support, which include tax rebates and exemptions, the global big-ticket companies and local communities must see the Sundarbans as a huge opportunity for both.

Social and environmental impacts, responses and indicators from the point of view of Sundarbans's sustainable tourism need to be reviewed under five categories: population, peace, prosperity, pollution and protection. Since the main driver for improvement is regulation rather than market measures (Ralf Buckley 2012) the Sunderbans must set out its priorities, i.e., the role of tourism in expansion of protected areas, improvement in environmental accounting techniques, and the effects of individual perceptions of responsibility in addressing climate change. Though evidently the global tourism industry is currently far from sustainable the Sundarbans has to be an exception.

To support their participation in this process of economic activity, what seems to be helping the cause is the Bangladesh's National Tourism Policy in 2010 for the development of domestic and international tourism in the country and government enacted 'Tourism Protected Area and Exclusive Tourist Zone' Law in 2010 for attracting foreign investments in these ETZs. The World Travel and Tourism Council (WTTC) has foretold that by 2023 (BizBangladesh, 2020) the travel and tourism will directly engender two million jobs and support four million jobs. This will amount to 4.2 percent of the country's total employment, thus, contributing to Bangladesh's annual growth rate in direct jobs of 2.9 percent (BizBangladesh, 2020).

The Sundarbans as a joint ownership

In this context of creation of economic opportunity for the Sundarbans jointly owned by developing countries Bangladesh and India, a model can be developed focusing on six potential thrust areas of research and action (Spenceley and Meyer, 2012): (1) the use of new techniques measuring tourism impacts; (2) the roles of development agency governance and operational practices; (3) how inequitable power relations and weak governance can undermine efforts; (4) the importance of private-sector business practices that contribute to poverty reduction; (5) the value of multidisciplinary quantitative and qualitative research tools; and (6) the need for linkages between academic research and practitioner interventions.

Geographically the Sundarbans is situated on the delta formed by the meeting point of the Ganges, Brahmaputra and Meghna Rivers in the Bay of Bengal. The entire expanse ranges from the Hooghly River in India's state of West Bengal to the Baleswar River in Bangladesh. The mangrove forest area of Sundarbans spreads over some 3,900 square miles, of which Bangladesh's Khulna district accounts for over 2,323 square miles and in West Bengal of India over 1,640 square miles across the South 24 Parganas and North 24 Parganas districts (Pani *et al*, 2013).

The entire area including the vast expanse of water bodies is estimated at 6,526 square miles, containing water-logged forest areas, in which many wildlives abound, such as the famous the Bengal tiger (*Pantheratigristigris*), spotted deer, crocodiles, venomous snakes and a score of other reptiles. The Sundarbans flora is characterised by the abundance of Sundari (*Heritierafomes*), and others such as Gewa (*Excoecariaagallocha*), Goran (*Ceriopsdecandra*) and Keora (*Sonneratiaapetala*) too are commonly found in the area. However, something which is omnipresent in the forest is Sundari (*Heritiera littoralis*),

Sundarbans seems to be eponym of this tree. The forests provide habitat to 453 native faunae, including 290 species of bird, 120 types of fish, 42 varieties of mammal, 35 breeds of reptile, and eight amphibian species (Iftekhar and Islam, 2004).

Among several benefits, the Sundarbans has proven to be a protective shield for the tens of thousands of inhabitants Khulna and Mongla districts of Bangladesh and their adjoining landmass against the floods caused by cyclones. The large tracts of the Sundarbans are impacted by increased salinity due to rising sea levels and dwindling supply of freshwater, thus, causing massive concerns for a population of over 4 million dependents on this landmass, most of them below poverty line. Despite sizeable human habitations the symbiotic relationship between the flora and fauna and the inhabitants (call it mutualistic, commensalistic, or parasitic) has remain unchanged. The Sundarbans till date has retained a forest closure of about 70 percent of its total landmass (Bhaumik, 2003).

The Sundarbans as an economic livelihood

The economic livelihood of these human populations at the Sundarbans, dependent on tourism in this massive area, relies on the physical development processes along the coast. This process has been influenced by a multitude of factors, comprising of wave motions, micro and macro-tidal cycles and longshore currents typical to the coastal tract. This affects the tourism along this coastal tract, as well the Sundarbans land. The latter is intersected by a score of river channels and creeks, some of which afforded water communication throughout the Bengal region both for ferrying ships and chugging steamboats.

The shore currents, which varies with the monsoon, combine with the cyclonic action force the tourism activities living through unpredictability. What is really comforting is the vast expanse of mangrove vegetation that provides the right "balance" to this fragile eco-system. Undeniably this Sunderbans's eco-system is continuously affected by erosion and accretion through these natural forces at varying levels, thus bringing about physiographic change, sometimes so appallingly noticeable. For example, during each monsoon season almost all the Bengal Delta is inundated, much of it for most part of the year, thus forcing the sediment of the lower delta plain to advent to heat and matter to inland helped by monsoon and cyclone. One of the existential crises the people living on this Ganges Delta have to come to terms with the ominous rising of sea levels caused mostly by people's dependence on the Sundarbans for their livelihood and partly by climate change. Like Kiribati in the central Pacific Ocean affected due to global warming causing sea level rise and raising the concerns of its existential crisis due to flooding the Bangladesh seems to be at a similar crossroad. This may be not in an "immediate-near-future" premonition, but the deterioration of Sundarbans ecosystem is foreboding.

Tragedy in the Sundarbans

In May 23, 2009, Cyclone Aila (Joint Typhoon Warning Center, 2009) left about one million people homeless in India and Bangladesh homeless. Worse, in Bangladesh, the cyclone put an estimated 20 million people at risk of post-disaster diseases (Xinhua, 2009). The Sundarbans was one of the hotspots of casualties, with at least 100,000 people were negatively impacted by this super cyclone. The proposed coal-fired Rampal power station situated 14 km (8.7 mi) north of the Sundarbans at Rampal Upazila of Bagerhat District in Khulna; Bangladesh is creating a sense of inquietude. The 1320-megawatt coal-fired power station will need 4.72 million tons of coal per year and 219,600 cubic metres of water (Hance, 2016) every day from the Poshur river to sustain itself. More appallingly, the power station will discharge the treated wastewater back into the river system. The project does not seem to have left anything that could defile this fragile eco-system by a "perfect design".

This doomsday project will not only create massive damage to this mangrove forest mangroves, the marine animals, the other flora and fauna but emit toxic gases such as carbon monoxide, oxides of nitrogen and sulphur dioxide like those belching crude chimneys built during the early period of

industrialisation in Europe. To keep this thermal plant going, the massive freight as a feeder service would need about 59 commuting ships with each having 80,000-ton capacity (Alliance, 2017) that would be taken to the port on the bank of the Poshur river. A long stretch of 40 kilometres (Alliance, 2017) from the port to the plant will course through the Sundarbans, thus likely to affect the river flow path of the Ganges.

Environmentalists portend absolute disaster as these coal-carrying vehicles are not often covered as they scatter large amounts of fly ash, coal dust, sulphur, and other toxic chemicals. Further, transporting large amount of coal through the shallow rivers also menacingly pose massive threat as witnessed in the case of earlier five vessels with load of coal, oil and potash sank in the nearby rivers between December 2014 and January 2017 (Alliance, 2017), causing irreparable damages to the ecosystem.

There is a litany of violations and failing of the Environmental Impact Assessment guidelines by coal-based thermal power plants, according to UNESCO report 2016 (Kumar, 2013), Ramsar Convention (Anisul, 2015) (Bangladesh is a signatory in this international environmental treaty for the conservation of wetlands and the Sundarbans figures on this list of wetlands of international importance). India seems to be a perfect accomplice to her neighbor as it has its own share of failings with its Green Tribunal (New Age, 2013). Such gross environmental violations can be equated to India's coal-fired thermal power plant at Gajmara in Gadarwara of Madhya Pradesh state. Bangladesh seems to have not heard its own Department of Environment (DoE), which has attached 50 preconditions for the project (The Financial Express, 2020), i.e., one precondition clearly states the project is to be situated 25-kilometer radius from the outer periphery of an ecologically sensitive area whereas the proposed project locates itself 14 kilometres from the Sundarbans.

The Bangladesh government claim of importing high quality coal to channelise their toxic greenhouse gas emission through 275-meter-high chimney, employing state-of-the art technology in order to keep its impact on the Sundarbans at a negligible level, does not seem to hold water based on several fact-finding reports. The contentious building of this plant in all probability will adversely impact the world's largest mangrove forest the Sundarbans and some 2.5 million inhabitants consisting of woodcutters, fishermen, and honey hunters, among others. Since the Sundarbans has its life in numerous intertwined organic chains such an imposing project will have wider ramification, affecting the lives of some 40 million people in both Bangladesh and India.

As poachers and foragers seem to be at large wherever there is abundance of world life, hence, the failure to impose a blanket ban on all killing or capture of wildlife including some rare species of invertebrates in the Sundarbans contributed to the dwindling of flora and fauna, depleted biodiversity and loss of species of the Sundarbans in last century. Further, the Sundarbans lists itself along with other Bangladesh's mangrove wetlands as recipient of less and less freshwater that is considerably reduced from the 1970s. The primary reason is the diversion of freshwater in the upstream area by neighboring India through the use of the Farakka Barrage bordering Rajshahi district of Bangladesh. But, because the Bengal Basin is slowly tilting towards the east because of neo-tectonic movement, resulting greater freshwater input to the Bangladesh Sundarbans, the salinity of the Indian part of the Sundarbans has turned out to be much higher than that of the Bangladesh side.

The Sundarbans and world history

There are sponsored studies to plead on the side of the vested interest groups, and one such is a 1990 study cites that there "is no evidence that environmental degradation in the Himalayas or a 'greenhouse' induced rise in sea level have aggravated floods in Bangladesh". However, the sheer inanity of such a study report pales into insignificance when compared to UNESCO's 2007 study report, "Case Studies on Climate Change and World Heritage". The report clearly affirms that an anthropogenic 45-

centimetre (18 in) rise in sea level (likely by the end of the 21st century, according to the Intergovernmental Panel on Climate Change), combined with other forms of anthropogenic stress on the Sundarbans, could cause the destruction of 75 percent of the Sundarbans mangroves (UNESCO, 2020). Already, Lohachara Island and New Moore Island/South Talpatti Island have submerged under the sea, and Ghoramara Island is half inundated (George, 2010).

The bigger truth is, Bangladesh, a low-lying delta nation of 180 million people, will lose 18 percent of its coastal area to a rampaging sea, thus forcing at least 20 million people to flee to safer habitat as the sea levels are predicted to rise 1 meter (3.3 feet) by 2050 (George, 2010). This is not to be regarded as a dystopia, a post-apocalyptic land of imagined suffering based on an extended script of Kevin Reynolds's Hollywood potboiler *Waterworld* released in 1995, it is emerging as our worst fear nearing its truth. Until 2000, the sea levels rose about 3 millimeters (0.12 inches) a year, but between 2000 and 2010 the sea had risen about 5 millimeters (0.2 inches) annually (George, 2010), which seemed to have called upon the runaway climate change, the Apocalypse. The island Lohachara was submerged in 1996, a cheek-by-jowl distance to the Sundarbans. The catastrophic event forced its inhabitants to move to the mainland. Another island Ghoramara, not far from the Sundarbans, had lost half of landmass to the sea. Another ten islands in the neighbourhood area of the Sundarbans were also massively affected (George, 2010).

The Zoological Society of London (ZSL 2013), a charity devoted to the worldwide conservation of animals and their habitats, reveals that as human development continues to make strides and burgeon, and global temperature leaps up, resulting the deterioration of natural shield from tidal waves and cyclones at disquietingly startling rates. ZSL's Dr Nathalie Pettorelli, affirms in her findings as a part of the 2013 study (Countercurrents.org, 2013): "Our results indicate a rapidly retreating coastline that cannot be accounted for by the regular dynamics of the Sundarbans. Degradation is happening fast, weakening this natural shield for India and Bangladesh." Natalie Pettorellimentioned (Countercurrents.org, 2013). She adds: "Coastline retreat is evident everywhere. A continuing rate of retreat would see these parts of the mangrove disappear within 50 years. On the Indian side of the Sundarbans, the island which extends most into the Bay of Bengal has receded by an average of 150 metres a year, with a maximum of just over 200 metres; this would see the disappearance of the island in about 20 years."

ZSL's Chief Mangrove Scientific Advisor Jurgenne Primavera, in the same study report, (Countercurrents.org, 2013) warns: "Mangrove protection is urgent given the continuing threats to the world's remaining 14 to 15 million hectares of mangroves from aquaculture, land development and over-exploitation." He alerts (Countercurrents.org, 2013): "Our results indicate a rapidly retreating coastline that cannot be accounted for by the regular dynamics of the Sundarbans. Degradation is happening fast, weakening this natural shield for India and Bangladesh."

If tourism were to be sustained in this Sundarbans region the people living in this region must allow the mangroves to grow, as it has been over the centuries, in salty, muddy coastal waters in the tropics and subtropics. The mangroves have a unique ability to survive in these ecological conditions, because any other plant would wither under conditions so saline. However, the mangroves thrive in these saline waters and offer the ecological underpinning for the entire flora and fauna, and the natural processes to continue. The sequestration of carbon into the local sediments can be counted as one such key process. The huge pile of dead branches, sprigs, leaves, twigs and roots of mangroves – which are suffused with carbon earlier separated from the atmosphere – are stockpiled in the oxygen-poor, slow-moving local sediments and held back from re-entering the atmosphere.

Another 2012 study by ZSL discovered that the Sundarbans coast was retreating up to 660 feet annually. Large scale agricultural activities had wiped out 42,450 acres of mangroves between 1975 and 2010 (Galrling, 2015). Another 18,670 acres mangroves lost due to shrimp cultivation (Galrling, 2015). Although mangroves are as scarce as hen's teeth, they are rampart like vallum against climate

change, providing safe keeping to coastal areas from tsunamis and cyclones. The Sundarbans contains the most carbon rich jungles in the tropics with high carbon sequestration potential, meaning their degradation and loss substantially lower human beings' ability to attenuate, and adapt to, the foretold changes in climatic conditions.

The Jadavpur University's School of Oceanographic Studies (Hazra, 2002) calculated the annual rise in sea level to be 0.31 inch in 2010, a disaster doubled from 0.124 inch recorded a decade before. The menacing rise of sea levels had engulfed some 19,000 acres of forest areas (Hazra, 2002). This phenomenon, coupled with an around 2.7-degree Fahrenheit rise in surface water temperatures and increased levels of salinity, has posed an existential threat for the survival of the indigenous flora and fauna. The Sundari trees, indigenous to this landmass, are uncommonly sensitive to salinity and are being threatened with extinction.

The inundation of land mass caused 6,000 families homeless, and another 70,000 people nearly came under the siege resulting the exodus of people to the mainland. The recorded massive flight of human capital to the mainland was estimated to be around 13 percent in the period between 2000 and 2010 (Ghosh, 2015). The Heiderberg University's ethnographic study in 2015 (Ghosh, 2015) discovered the brewing crisis in the Sundarbans, and reasoned this due to poor planning on the part of the India and Bangladesh governments coupled with natural ecological changes causing the flight of human capital.

It is also evident in many geographies that the growth of tourism in small island developing states (SIDS) is by no means synonymous with poverty reduction. As a matter of fact, in some cases it entrenches existing inequalities (Scheyvens and Momsen, 2008). Hence, if it were to happen otherwise in case of the Sundarbans stakeholders, both Indian and Bangladesh government must deliberate an appropriate policy regime, a strong regulatory mechanism and equity-enhancing tourism (Scheyvens and Momsen, 2008).

Daniela Schilcher's (2007) model provides a further insight into this crisis as it integrates tourism in a continuum of poverty alleviation strategies within the antipodes of neo-liberalism and protectionism. It is argued that despite a ground swell of evidence in support of regulative and (re)distributive approaches the tourism in practice comes closer to protectionism than neoliberalism. Evidently, the key influential international organisations, as well as governments across geographies, follow a largely neoliberal laissez-faire approach to poverty alleviation combined with market friendly 'pro-poor' supplements.

Since the tourism *per se* fits like a glove into neoliberal interpretations of poverty eradication, the Sundarbans discourse will fall well within this, while it tends to aggravate poverty-enhancing inequalities if allowed to operate in a free market environment. Schilcher (2007) avers that in order to be pro-poor, the growth must deliver disproportionate benefits to the poor to reduce inequalities which have been found to limit the potential for poverty alleviation.

Conclusion

Despite the confusion and mystery shrouded over the role of inter-governmental organisations, local communities, private enterprises in the development of sustainable tourism practices in the developing economies such as India and Bangladesh the sustainable tourism will be recognised as a byword for a set of best practices that maximizes the benefits to these 2.5 million local communities in the Sundarbans. The sustainable tourism minimizes negative social or environmental impacts and enables these inhabitants conserving fragile ecosystem consisting of flora and fauna and their habitats, and the culture of indigenous people. This sustainable tourism can draw upon its basic tenets from the "Sustainable Development Goals" (Goodwin, 2017) stated in World Tourism Organization. The Cape Town Declaration on Responsible Tourism possibly can serve as a rubric template, which among other things, insists on involving local population in decisions that affect their lives and life chances, providing

more congenial and gratifying experiences for tourists through more meaningful connections with local population. If such a process is allowed to take shape, it will obtain a greater insight into the local cultural, social and environmental issues. Thus, being aware of things that are culturally sensitive, will build the bridge of respect between tourists and hosts, and local pride and confidence. For both Bangladesh and India, it is obligatory under the remit of sustainable tourism to shift policy focus from growth to equity, thus, paving the way for strong institutions capability of regulating the tourism industry and distributing assets to facilitate 'pro-poor growth' policies and actions.

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