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## **Local People and the Global Tiger: An Environmental History of the Sundarbans\***

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I

*nterposed between the sea and the plains of Bengal lies an immense archipelago of islands. [...] There are no borders here to divide fresh water from salt, river from sea. The tides reach as far as three hundred kilometers inland and every day thousands of acres of forest disappear underwater only to reemerge hours later.*

Amitav Ghosh, *The Hungry Tide*, Delhi 2004

## History

The Sundarbans has a unique history, nature and landscape.<sup>1</sup> It is half water and half land. It is a terrain where land making has not yet come to an end. It is a place that had been alternately inhabited and deserted. It is perhaps the only place on earth that is threatened at once by cyclones, tidal waves, lack of fresh water, tigers, crocodiles and poisonous snakes. It is a unique tigerland where the tigers are confirmed man-eaters.

The Sundarbans is the largest mangrove forest and the only mangrove tigerland in the world. Here the tiger stands at the pinnacle of both the aquatic and the terrestrial food chain. The area lies south-east of the city of Kolkata (Calcutta)<sup>2</sup> in the 24 Parganas District of West Bengal and is part of the Gangetic Delta, which borders on the Bay of Bengal (see Map I). It is shared between two neighbouring countries, Bangladesh and India. Its larger part (62% of the total mangrove ecosystem) occupies the southwest corner of Bangladesh (see Map II). The western boundary of the Bangladesh Sundarbans runs along the Harinbhanga – Raimangal – Kalindi river system.<sup>3</sup> The total land area is 4,143 square km, the total water area 1,874 square km.<sup>4</sup>

The Indian Sundarbans is one of the reserves of Project Tiger, launched in 1973 to save the tiger from extinction.<sup>5</sup> The Sundarbans

<sup>1</sup> The nearest equivalent of the Sundarbans, in more ways than one, is the Everglades National Park in Florida (USA), see M. Grunwald, *The Swamp: The Everglades, Florida, and the Politics of Paradise*, Simon & Schuster, New York 2007; see also <http://en.wikipedia.org/wiki/Everglades>.

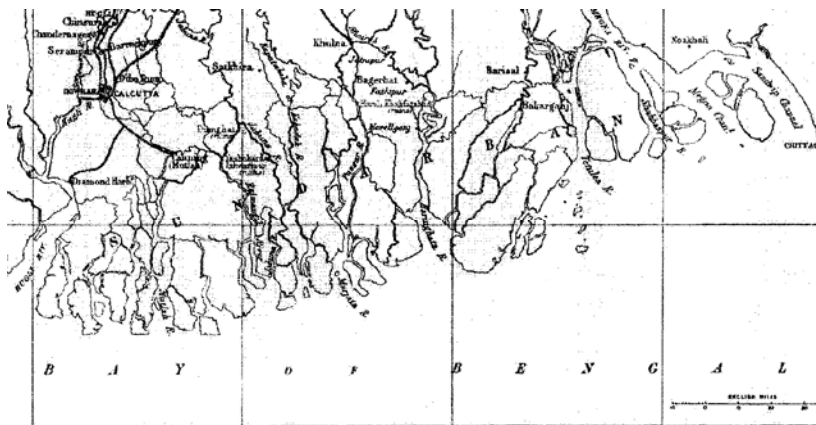
<sup>2</sup> The Indian city of Calcutta gave up its British colonial name with effect from January 2001 and is now known by its original name of Kolkata; see *The Telegraph*, Kolkata, 2 January 2001, and <http://www.highbeam.com/doc/1GI-68590471.html>.

<sup>3</sup> The partitioning of India in 1947 resulted in the creation of two independent nation states: India and Pakistan. The colonial province of Bengal included East Pakistan and the Indian province of West Bengal. East Pakistan broke away from Pakistan in 1971 and became another independent nation, Bangladesh; see W. van Schendel, *The Bengal Borderland: Beyond State and Nation in South Asia*, Anthem, London 2005.

<sup>4</sup> [Http://en.wikipedia.org/wiki/Sundarbans](http://en.wikipedia.org/wiki/Sundarbans).

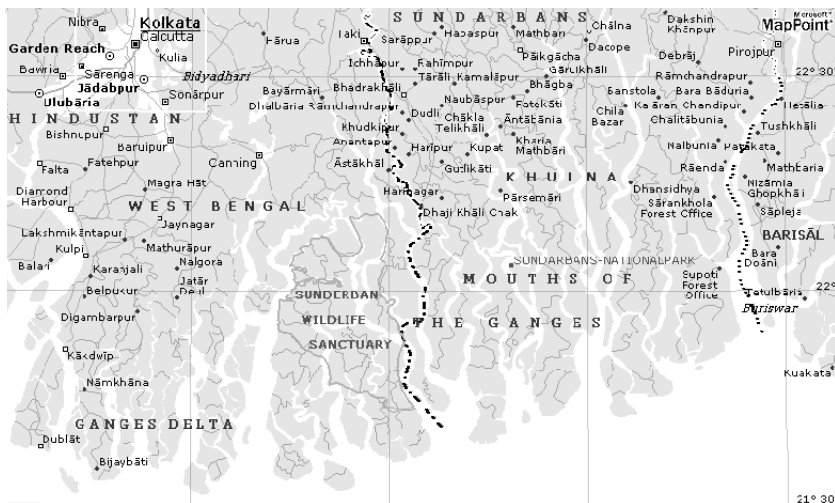
<sup>5</sup> M. Rangarajan, *India's Wildlife History*, Oxford University Press, Delhi 1998, pp. 95-107.

## Map I. The Colonial Sundarbans



Source: Royal Geographical Society and Monthly Record of Geography, New Monthly Series, Vol. 13, No. 5, 1891

## Map II. The international border between West Bengal (Indian) and the Bangladesh Sundarbans



Source: [http://encarta.msn.com/mapof\\_10216125/sundarbans.html](http://encarta.msn.com/mapof_10216125/sundarbans.html)

stands out among the other large mangrove forests for its extraordinary wildlife diversity. In 2001 it was included in UNESCO's world network of International Biosphere Reserves. The Sundarbans biosphere reserve programme was started in the early 1970s with the main objective of conserving the biodiversity of the region and developing a new knowledge base about it, emphasising that humans are an integral part of the ecosystem and that local communities should be actually brought into the orbit of the conservation programme. This is all the more necessary considering that some three million people live in this biosphere reserve. These people depend directly on forest and forest-based resources, since agriculture is not productive enough due to the salinity of the water. The core area (Sundarban National Park) has been designated as a World Heritage site. Besides being an economic resource, the forest provides natural protection to the lives and properties of the coastal population in cyclone-prone Bangladesh and southern West Bengal.<sup>6</sup>

This unique natural zone also has a unique history. Various explanations have been offered about the origin of the name Sundarbans, which means "beautiful forests".<sup>7</sup> It is presumed that it derives from

<sup>6</sup> R.N. De, *The Sundarbans*, Oxford University Press, Delhi 1990, pp.1-4. Recent experience with cyclones and storms shows how important such natural protections are in neutralizing their impact. Haiti was hit by deadly tropical storms in May and September 2004. Nearly 5,000 Haitians lost their lives and homes. The clearing of trees on the Haitian highlands aggravated the tragedy. Destitute and lacking alternative sources of fuel, Haiti's poor have cut down most of their trees for fuelwood and charcoal. By doing so they have lost a valuable service provided by forested watersheds, viz., thus keeping in check of local flood runoff and the prevention of massive mudslides. Interestingly, the same storms that devastated Haiti had less impact on neighbouring Puerto Rico, where highland watersheds are mostly forested. For further details see S. Postel, "Safeguarding Freshwater Ecosystems", in *State of the World 2000: A Worldwatch Institute Report on Progress Toward a Sustainable Society*, Earthscan, New York and London 2006, pp. 41-60. See also: <http://en.wikipedia.org/wiki/Biodiversity> <http://en.wikipedia.org/wiki/Sundarbans>.

<sup>7</sup> Cf. J.R. Rainney, "The Sundarban: Its Physical Features and Ruins", in *Proceedings of the Royal Geographical Society and Monthly Record of Geography*, 13, 5, 1891, pp. 273-287, <http://www.jstor.org> (I am indebted to Md. Sohrabuddin for searching out this article for my use).

the *Sundari* trees (*Heritiera littoralis*) that grow in the region. The name is of relatively recent origin. There are a number of references to the Sundarbans in *Ramayana*, *Mahabharata* and the *Puranas*, as well as Hiuen-Tsang (a Chinese traveller who visited India in the seventh century AD). In the seventh century, the area was probably part of the land of Samatata, which Hiuen-Tsang describes as a low-lying country bordering on the sea and rich in crops.<sup>8</sup>

In medieval texts, lower Bengal is repeatedly called *Bati* or *Bhati*. In oral traditions and folk songs, the entire land mass extending from the eastern shores of Bhagirathi in the west to Chittagong in the east was referred to as *Bangala* or *Bhati*. A line in a folk song, “The long-bearded *Bangal* [a resident of eastern Bengal] has arrived from *Bhati*” (“*Bhati haite aila bangal, lamba lamba dari*”),<sup>9</sup> refers specifically to the area that later came to be known as the Sundarbans. In his work *Akbarnamah*, Abul Fazl also calls this coastland of the Bay of Bengal “*bhati*”.<sup>10</sup> The term means “low tidal land” and thus does not in itself indicate that the area was originally covered with dense forests.<sup>11</sup> Indeed, Niharranjan Roy cites sufficient evidence that many presently uninhabited parts of the Sundarbans were actually cultivated in the Middle Ages.<sup>12</sup> Ralph Fitch, who toured this tract of country in 1586, describes it as fertile, with solidly built and lofty houses to withstand the cyclones and storm-tides.<sup>13</sup> In an influential essay on the Sundarbans published in 1875, William W. Hunter also opined that there were once numerous human settlements in several areas of the Sundarbans.<sup>14</sup>

It is said that the actual ruler of the Sundarbans towards the end of

<sup>8</sup> T. Watters, *On Yuan Chwang's Travels in India*, Oxford University Press, Delhi 1961, pp.187-189.

<sup>9</sup> *Manikchandra Rajar Gan*, folk song of Bengal (*Bhatiali*), see N.R. Roy, *Bangalir Itihas*, Book Emporium, Kolkata 1949, p. 104.

<sup>10</sup> A. Fazl, *Akbarnama* (translated from Persian to English by H. Beveridge), vol. I, Asiatic Society, Calcutta 1897, p. 67.

<sup>11</sup> *Manikchandra Rajar Gan* cit.

<sup>12</sup> *Ibid.*, pp. 105-106.

<sup>13</sup> Rainey, “The Sundarban” cit., p. 279.

<sup>14</sup> W.W. Hunter, *A Statistical Account of Bengal, Vol. I, District of 24 Parganas and Sundarbans*, Truebner & Company, London 1875, pp. 285-346.

the sixteenth century was Pratapaditya, one of a group of chiefs known as *Barah Bhuiyas* (the Twelve Chiefs), who were vassals of the Mughal emperors. Pratapaditya defied the authority of the Mughal emperor Akbar and established an independent stronghold in the swampy areas of southern Bengal. The name of Pratapaditya is associated with one of the founding myths of Bengali sub-nationalism. Much of this myth, however, may be of little historical substance.<sup>15</sup> It appears that at some point in the fifteenth or sixteenth centuries many areas in the coastal tract of the 24 Parganas were abandoned and overrun with forest and jungle owing to some disorder of a nature that is not clear to historians: it may have been either political or environmental. The flood of 1584 dislocated thousands of villages in this area and further grief was inflicted by Portuguese and Mag incursions. In Rennell's map (1761) the whole tract to the south of Bakharganj is described as "country depopulated by the Maghs".<sup>16</sup> Incursions by pirates, whether Portuguese or native, may have thus played a significant role in the depopulation of this tract, along with devastations caused by cyclones and storm waves. The Portuguese, who occupied Tardaha on the Bidyadhari towards the end of the sixteenth century, combined piracy with trade. The whole Sundarbans area became a haven for Portuguese and Mag pirates. The Channel Creek, one of the important channels in the Sundarbans, came to be known as Rogues' River.<sup>17</sup> Francois Bernier, a French traveller who journeyed through the Sundarbans in 1665, confirms the presence of Portuguese merchants on the area's islands.<sup>18</sup> The decline of human settlement in the Sundarbans may have also been due to certain changes in the natural environment, such as shifts in the course of rivers determining insufficient fresh water inflow and hence an increase of salt water, making the land unsuitable for cultivation. The Sundarbans remained enmeshed in disorder for the next three hundred years. Things did not improve even in the nineteenth century.

<sup>15</sup> De, *The Sundarbans* cit., pp. 10-12.

<sup>16</sup> Quoted in Roy, *Bangalir Itihas* cit., p. 105.

<sup>17</sup> Ibid, p. 12.

<sup>18</sup> F. Bernier, *Travels in the Mogul Empire*, Oxford University Press, London 1914, p. 41.

## **Nature and Landscape: The Early British Accounts**

The natural world of colonial India always evoked a special interest among Europeans, in whose writings nature always featured quite prominently. In contrast with this general curiosity about the Indian natural world among European travellers the landscape of the Sundarbans initially failed to generate much interest. Eventually, however, the forest or “jungle” turned into an important theatre for the interaction of Euro-American “Selves” and Indian “Others” – an interaction documented by a huge colonial literature that piled up in the course of time.<sup>19</sup> With the progress of the nineteenth century, the natural world of the colonial possessions became increasingly subject to scientific scrutiny by naturalists and botanists. It also became a theatre for the exhibition of colonial power. The tropical rain forest is very different from the vegetation of northern Europe and few Europeans were able to resist recording their impressions about it in lyrical prose and often exaggerated accounts. These early impressions were eventually incorporated in the geographic and botanic knowledge of the late nineteenth and early twentieth centuries.<sup>20</sup> Early colonial knowledge was unsystematic and the early landscapes described by the English travellers are no exception. This is also true of the first English impressions of the Sundarbans, which are a jumble of associations, images, notions, ideas, and actual information. This haphazard manner of gathering knowledge persisted throughout the nineteenth century.

The late eighteenth and early nineteenth century travel narratives

<sup>19</sup> R. Inden, *Imagining India*, Basil Blackwell, Oxford 1990, p. 3.

<sup>20</sup> Tropical rain forests provided an important stimulus to both Charles Darwin and Alfred Russel Wallace’s independent formulation of the theory of evolution by natural selection. The twenty-two year old Darwin embarked as a naturalist on the H.M.S. Beagle to undertake a voyage whose first tropical landfall was Salvador on the Atlantic coast of Brazil; see T.C. Whitmore, *An Introduction to the Tropical Rain Forest*, Oxford University Press, New York 1998, pp. 2-3; see also W. Anderson, “The Natures of Culture: Environment and Race in the Colonial Tropics”, in *Nature in the Global South*, P. Greenough, A.L. Tsing (eds), Orient Longman, Hyderabad 2003, pp. 31-32.



of the Indian landscape use the word “jungle” to denote dense and tangled vegetation, so thick as to be virtually impenetrable. The jungle was likely to offer some opportunity to hunt big and small game, but for most Europeans the term connoted danger and lack of order. Europeans usually saw jungles as hotbeds for deadly tropical diseases and hideouts for dacoits and predatory beasts. The same hope runs through most European narratives from this period: that at some point the jungles will be cleared. These writings prescribe a project of improvement, the vital plank of which was the gathering of new knowledge to manage the unknown. I will cite a concrete example to illustrate this: William Huggins, who sailed into the mouth of the Hooghly river near the Sundarbans in 1824, could not hide his frustration – like many other English travellers before and after him – when he wrote: “I imagine the period is remote when Saugar Island [one of the islands in the Sundarbans] will be metamorphosed into a Brighton, as many years must elapse before the jungle can be cleared away.”<sup>21</sup>

Interestingly, eighteenth and nineteenth century descriptions of the Sundarbans stand in sharp contrast to the otherwise “luxuriant” image of the tropics. Hundreds of Europeans aboard the Calcutta bound vessels cruising through the waters of Hooghly, keeping the Sagar Island on their right, did not pay much notice to the Sundarbans. They were merely passing through. They looked, yet did not observe. Those who did attempt to describe the area did so rather carelessly and indifferently, as its landscape appeared discouraging and grim. Eighteenth century ship passengers unenthusiastically recorded the “mud-banks”, “flooded low lying jungles”, “sandbanks” and “reddish brown waters” of their surroundings. By the beginning of the nineteenth century, however, colonial knowledge about the Indian landscape had advanced and generated new curiosity among the Britons. We now find two major threads running through voyagers’ descriptions of the Sundarbans landscape: 1) the area is perceived as dangerous, a hotbed of deadly fevers and a breeding ground for ferocious tigers and crocodiles; 2) it is identified with the “barbaric”

<sup>21</sup> W. Huggins, *Sketches in India*, John Letts, London 1824, p. 2.

custom of infanticide practiced by the Hindu devotees who lived on Sagar island.<sup>22</sup>

The history of the reclaiming of the Sundarbans forest is fascinating. At the time of the British East India Company's rise to power, the Sundarbans forests extended to the vicinity of Calcutta. Early attempts at reclamation in the eighteenth century were unsuccessful. The reclamation work only took off in full swing in the second decade of the nineteenth century, but, as we shall see, little success was achieved due to the depredations of man-eaters.

William W. Hunter's representation of the Sundarbans as a fearful place – “a sort of drowned land, covered with jungle, smitten by malaria, and infested by wild beasts” – brings to culmination all the earlier descriptions of the area. In his 60 page seminal essay, published in 1875, Hunter portrayed the Sundarbans as an area “intersected by a thousand river channels and maritime backwaters, but gradually dotted, as the traveller recedes from the seaboard, with clearings and patches of rice land.”<sup>23</sup> The area, he noted, was a vast alluvial plain, where the process of land-formation was still ongoing. He described the forest as very dense and commented that the swampy nature of the terrain impeded progress through the jungle.

For visitors to the Sundarbans every moment of the journey through the vast watery wilderness, where tigers and crocodiles lurked, had a mystic quality. They were exploring the mysterious tropical Jungle. Back then, some parts of the interior of the area, notably its southernmost stretch, were impenetrable. With its intertwining trees and brushwood and dangerous looking creeks running into the darkness in all directions, and the shimmering tidal waters bordered by mangrove trees, the place appeared as a fantasy world to Englishmen like Hunter.<sup>24</sup> The Sundarbans was yet another theatre for the interaction

<sup>22</sup> However, some early observers, such as Buchanan Hamilton, who traveled and botanised on the eastern shores of the Bay of Bengal, found the area full of luxuriant vegetation; cf. D. Arnold, *The Tropics and the Traveling Gaze: India, Landscape and Science, 1800-1856*, Permanent Black, Delhi 2005, p. 84.

<sup>23</sup> Hunter, *A Statistical Account of Bengal* cit., pp. 287-290.

<sup>24</sup> *Ibid.*

of European “Selves” and Indian “Others”. The Europeans and Indians dialectically constructed one another’s understanding or ideas of given spaces. Colonial constructions of the Sundarbans were hybrids that were partly British and partly indigenous, and often neither of the two. The *Raj* was neither wholly British nor entirely native. Like the British, the indigenous people of the Sundarbans perceived the area as harsh and dangerous, a place full of *banda* (bushes) and *kada* (mud), and infested with tigers and crocodiles.<sup>25</sup> Thus, indigenous and foreign perceptions were sometimes in tune. The combination often resulted in new ecological or environmental ideas relating to the management and exploitation of this then little known natural world.

Most descriptions of the Sundarbans, including W.W. Hunter’s classic account, portray the Sundarbans tigers as dangerous man-eaters. As British power in India expanded, information about the deaths caused by tigers began to pour in. By the second half of the nineteenth century it was estimated that tigers killed 1,600 people every year. It was also estimated that on average each tiger killed between 300 and 600 pounds’ worth of cattle in a single year. Tigers were hence classified as vermin.<sup>26</sup> They shared this status with the other big cats, but were especially conspicuous, being successful and prolific animals inhabiting a great variety of habitats, from the deep south to the mountains of the north. Englishmen were fascinated with the tiger. The animal inspired a broad range of both negative and positive responses. The danger posed by tigers had been apparent from the earliest days of the empire. Travellers’ accounts and memoirs are packed with tales of the deaths of Europeans seized by tigers while travelling, going out for a picnic, or hunting, as many graves in European cemeteries can testify. The most famous such incident was the death of Sir Hector Munro’s son in the Sundarbans in 1792. The young man’s seizure by a tiger was commemorated in Staffordshire ornaments and may well have provided the inspiration for the remarkable mechanical toy Tipu’s Tiger,

<sup>25</sup> S. Mitra, *Sundarbaner Arjan Sardar* (in Bengali), Ananda, Kolkata 1955, pp. 3-5.

<sup>26</sup> J.M. Mackenzie, *The Empire of Nature*, Manchester University Press, Manchester 1988, p. 180.

seized in the capture of Seringapatnam in 1799 and displayed in turn at the East India Companies offices, the India Office and, since 1879, at the Victoria and Albert Museum. We shall see how the British and the *Badamiyan* seemed in some ways to be locked in a conflict for the control of the Sundarbans.

## **Tiger and the Raj**

The intrusion of the colonial state, the implementation of Project Tiger in the post-colonial era, and the introduction of the biosphere reserve programme inflicted a new sort of misery on the inhabitants of the Sundarbans. Conservation of nature has often involved the relocation of residents; for example, during the early history of the US and in the former colonial world in Africa. The world's first national park was created in Yellowstone in 1872. It encompassed some two million acres at the junction of Wyoming, Montana and Idaho. The creation of the park involved the dislocation of the Nez Perce Indians from this unique landscape.<sup>27</sup> There have been many such instances. The Sundarbans case, however, was different from that of Yellowstone. The Sundarbans was declared a Protected Forest in the nineteenth century,<sup>28</sup> not to make it a tourist destination like Yellowstone, but as part of a general policy that led to the reserving of a fifth of the land area of British India as government forest between 1878 and 1900, to the purpose of increasing revenue and upgrading a growing stock of various kinds of timber.<sup>29</sup>

<sup>27</sup> K. Jacoby, *Crimes Against Nature: Squatters, Poachers, Thieves, and the Hidden History of American Conservation*, University of California Press, Los Angeles 2003, pp. 81-98.

<sup>28</sup> In Reserved Forests all rights were recorded and settled. In Protected Forests, instead, user rights were sometimes retained. However, a whole range of local or regional variations existed. In the Sundarbans, the local people were periodically allowed to use the Protected Forest under licenses issued by the colonial Forest Department, see M. Rangarajan, *Fencing the Forest: Conservation and Ecological Change in India's Central Provinces 1860-1914*, Oxford University Press, Delhi 1996, pp. 32-33.

<sup>29</sup> M. Rangarajan, G. Shahabuddin, *Displacement and Relocation from Protected Areas: Towards a Biological and Historical Synthesis*, (forthcoming).

Steps were taken to conserve the forests of Bengal in 1862 under the instructions of Dr. Brandis, then Conservator of Forests in Burma. A Deputy Conservator of Forest was sent to the Sundarbans in 1873, following which a rudimentary structure of forest administration was set up in the area. Toll stations and offices for issuing licenses were established. In 1875, an area of 885 square miles (2292 square km) was gazetted as a reserve. The area of the Sundarbans reserve continued to increase. Initially the main thrust of the policy was to maintain an adequate fuel reserve under efficient management and thereby contribute to state revenues. In 1878-79, another 4879 sq. km of the Sundarbans were declared protected, but leasing out for cultivation continued. Between 1928 and 1943 this whole area came to be designated as Reserve Forest.

The colonial government was quick to grasp that the Sundarbans, if reclaimed, could be transformed into a revenue yielding area. As early as 1867 forest administrators had realized the revenue value of the Sundarbans. In the Forest Department's report for that year, we read: "This woodlands should be a permanent source of revenue of several lakhs to the state,<sup>30</sup> and an unfailing supply of wood at a fair price to the public."<sup>31</sup>

Besides placing the forest under protection, the government gradually introduced user fees, licences and tolls under the pretext of preserving the diminishing natural resources. The customary users of the Sundarbans forests saw these as detested intrusions of the state. The launching of Project Tiger in 1973 and the implementing of the Biosphere Reserve Programme inflicted further inconveniences on the indigenous people of the area.

The designation of the Sundarbans as a Protected Forest was especially significant. The cultivable lands and villages in and around the Protected Forest were alluvial lands that had formed after 1793 and were outside the jurisdiction of the Permanent Settlement (1793).<sup>32</sup> Recent research suggests that in the nineteenth century the Sundarbans and

<sup>30</sup> One *lakh* equals 100,000 rupees.

<sup>31</sup> *Annual Progress Report of Forest Administration* (India Office Library, London, hereafter cited as *PRF*) for 1867-68, Calcutta 1869.

the more active part of the deltaic region had high economic potential and social mobility. Famine was a chronic plague of nineteenth century India, and the Sundarbans became a source of foodgrains for distressed areas.<sup>33</sup> The area could successfully accommodate displaced people in times of crisis, natural calamities or economic stress. The Sundarbans thus provided a kind of insurance against unexpected downturns.

The social and economic development of eastern Bengal reminds us of the Turner thesis, which highlighted the formative role of the wilderness in the shaping of American culture and politics. As in North America, the inner frontier of Bengal was not fixed. The Sundarbans' active delta was constantly being expanded as land formation and reclamation went on. The area also proved capable of cushioning political commotions elsewhere in Bengal.<sup>34</sup> In the early days of the *Magh* incursions, it was the custom of the immigrants in the Bakarganj Sundarbans to seek out some little creek leading into the heart of the forest, where they would establish a settlement, clear the jungle and cultivate the land.<sup>35</sup> The area not only sheltered people from *Magh* incursions, but also welcomed many other immigrants. Sir Daniel Hamilton, a visionary Scotsman, founded a utopian settlement in the Sundarbans which accepted all, regardless of caste, creed or ethnicity. Jatindranath Mukherjee or Bagha Jatin, an Indian revolutionary activist against the British, leased land in the Sundarbans from Sir Daniel Hamilton to shelter revolutionaries who ran night schools for adults and set up an economically viable society in 1906.<sup>36</sup> This is a place on earth where

<sup>32</sup> Permanent Settlement (1793) was a land revenue arrangement introduced by the British colonial authorities in the Bengal Presidency to maximize revenue.

<sup>33</sup> I. Iqbal, "Towards an Environmental History of Colonial East Bengal: Paradigms and Praxis", in *Journal of the Asiatic Society of Bangladesh*, 50, 2005, pp. 501-518.

<sup>34</sup> E.J. Turner, "The Significance of the Frontier in American History", in *American Historical Association, Annual Report for 1893*, Washington D.C. 1894, pp. 199-227. W.W. Hunter mentions that the collection of timber, furniture etc. from wrecks was another important occupation in the Sundarbans.

<sup>35</sup> Hunter, *A Statistical Account of Bengal* cit., p. 304.

<sup>36</sup> [http://en.wikipedia.org/wiki/Bagha\\_Jatin/Temp3](http://en.wikipedia.org/wiki/Bagha_Jatin/Temp3).

everyone is equally helpless in the face of nature and therefore on an even footing. In 1978 a group of refugees slipped away from the Dandakaranya camp in Madhya Pradesh and came to Marichjhapi, one of the Sundarbans islands, where they cleared land for agriculture and began to fish and farm.<sup>37</sup> Such influxes of people into the Sundarbans at times of economic hardship were not uncommon. Thus, like the American frontier, the Sundarbans has played the role of a safety-valve, although to a lesser extent.

We shall now look at how their efforts to maximize revenue brought the colonial rulers into an indirect conflict with the tigers of the Sundarbans. References to these animals are too many to list here. It is known from the Pala inscriptions that there was a place called *Byaghratatimandal* in southern Bengal, facing the sea. The literary meaning of the term, as Niharranjan Roy has pointed out, is “a forested seashore infested with tigers”;<sup>38</sup> a characterization that is highly evocative of the Sundarbans as we know them. Ralph Fitch, who visited the area in the 1580s, described south eastern Bengal as a dense forest infested by ferocious wild animals such as tigers and buffaloes. The earliest concrete reference to the notoriety of the tigers of the Sundarbans can be found in the writing of Francois Bernier, who visited the area in 1665.<sup>39</sup>

Land reclamation in the Sundarbans in the nineteenth century proved extremely difficult. One of the major challenges came from the local tigers, branded as “man-eaters” in the official papers. The tiger often attacked the defenceless forest clearers and wrought such

<sup>37</sup> The Government of West Bengal saw this as potentially the first of an endless series of such influxes into the Reserved Forest in the post-colonial era. The Marichjhapi settlers were evicted in a brutal display of state power in May 1979.

<sup>38</sup> Roy, *Bangalir Itihas* cit., p. 105.

<sup>39</sup> Bernier, *Travels in the Mogul Empire* cit., p. 24: “Among these islands, it is in many places dangerous to land and great care must be had that the boat, which during the night is fastened to a tree, be kept at some distance from the shore, for it constantly happens that some person or another falls prey to tigers. These ferocious animals are very apt, it is said, to enter in to the boat itself while people are asleep, and to carry away some victim who, if we are to believe the boatmen of the country, generally happen to be the stoutest and fattest of the party.”

fearful havoc that the authorities had to temporarily postpone the work.<sup>40</sup> The *coolies* (workers) thus had to be accompanied by *shikaris* (hunters) who would fire their guns at intervals to frighten away the tigers, which abounded in the forest. On many occasions the work would have to be given up entirely and the reclaimed land would eventually revert to Jungle.<sup>41</sup>

The tigers seemed reluctant to distinguish between white and coloured bodies. White people appeared to be equally helpless in the face of the beast. In 1782 the Henckelganj market was established. Mr. Henckell's native agent named the place after Mr. Henckell in the hope that the local tigers would no longer molest people in the area out of respect and fear of the name of the first English Magistrate of Jessore. However, reports of tiger attacks continued to reach the district headquarters with the usual regularity. Stories about man-eaters developed into myths and legends of startling proportions. Superstitions were rife among Indians and Europeans alike, and the man-eating tiger often approached the status of the werewolf of European lore.

The government was convinced that all or most of the tigers of the Sundarbans were "man-eaters" and the destruction of as many tigers as possible appeared to be the only way of reducing casualties. The encounter with the beast on the ground, however, was mostly left to the indigenous *shikaris*, who were usually looked down upon

<sup>40</sup> In the *Bengal District Gazetteer*, L.S.S. O'Malley relates: "The writer has come across a well authenticated instance where such a maneater charged into a line of some 6 or 8 men, working along a *bund*, at about 8 or 9 a.m. and carried off a man from their midst." Such depredations by a single ferocious tiger would invariably produce panic among the *coolies*.

<sup>41</sup> T. Bacon, *First Impression and Studies from Nature in Hindustan*, Hurst and Blackett, London 1837, pp. 2-3. Thomas Bacon arrived at the fringes of the Sundarbans on his way to Calcutta in 1831. He noticed that adventurers had cleared small spaces and erected a few shabby houses, but tigers had more than once driven out the enterprising settlers and in the process the land once reclaimed was lost for ever. Bacon does not mention the coolies; we know, however, that land reclaiming in the Sundarbans was usually carried out by private adventurers employing coolies accompanied by armed *shikaris*.



as incompetent, unskilled and effeminate. The government adopted a policy of rewards to induce the indigenous *shikaris* to destroy tigers. A government notification dated 16 November 1883 and published in the *Calcutta Gazette* authorized the rangers and foresters in charge of the eight chief revenue stations in the Sundarbans reserved forest to pay rewards for the killing of tigers. In 1883 the amount of the reward was Rs. 50 for each full-grown tiger and Rs. 10 for each cub. To receive their reward, the *shikaris* were required to produce the skin and skull of the animal for the forest official.<sup>42</sup> The reward was gradually raised over time, each increase following fresh depredations of tigers in the jungle. In 1906 the reward was raised to Rs. 100 per full-grown tiger and Rs. 20 per cub. In 1909 the amount for a full grown animal was further raised to Rs. 200. This last raise was prompted by the loss of 500 lives to tigers between 1906 and 1909.<sup>43</sup>

Thus, a large-scale slaughter of this magnificent animal was undertaken in the Sundarbans under official patronage. Between 1881 and 1912 more than 2,400 full grown tigers were killed in the area. (The Annual Reports of the Forest Department, however, from which I derived this figure, do not take tally of those killings which took place outside the forest area or were not reported to the Department.) The authorities left no stone unturned to suppress the tigers. Attempts were made, for example, to destroy them by setting plain traps or traps with spring-loaded bows and poisoned arrows. Such traps could be successful only in the winter, as tidal waters flooded them at other times of the year.

## **Project Tiger**

Today the Sundarbans is primarily known as a tiger reserve. Interestingly, the setting up of a tiger reserve and its maintenance in this unique mangrove swamp involved dealing with a whole range of unknowns. It was imperative to find answers to a number of questions, such as how many square kilometres should be assigned per

<sup>42</sup> PRF for 1883-84, p. 92.

<sup>43</sup> PRF for 1881-2 through 1912-1913.

tiger, what kind of plants would be preferable, how to ensure the availability of the tigers' natural food without causing any harm to the biodiversity of this unique zone, and so on. The Sundarbans Project Tiger itself was a project for the managing of the unknown, but in its turn triggered off new, unanticipated unknowns.

Politics, capitalism and science all function on global connections. Each expands its sweep to satisfy universal aspirations. But as they move on they change and reshape themselves in the face of local encounters on the ground.<sup>44</sup> In this section I will try to demonstrate how the post-colonial Sundarbans reserve offers an excellent case-study of such an encounter between the global and the local, and how the unpredictable effects of this encounter has led to the construction of new unknowns which in their turn call for management.

Environmental awareness and environmental politics would be an ideal space to draw up a balance sheet of the achievements of the universal. It is in this particular domain that the concept of globalization first began to take shape in the post-Second World War era. The concept of ecology originated in the nineteenth century and was intended to encompass the study of the supposed equilibrium between organisms and the external world. Ecology, however, was not considered to be a very important science until after World War II. The emergence of the post-war North American urban industrial complex prompted a large-scale development of ecological and environmental knowledge. In the 1950s and 1960s environmentalism primarily remained a western social movement. It alerted the West to the ongoing degradation of the global environment and the existence of complex chains of cause and effect whereby a pesticide like DDT, manufactured in the United States and sold across the globe, could eventually end up in the bodies of innocent penguins living at the South Pole. Environmentalism gradually adopted transboundary approaches in the 1970s and 1980s, drawing recognition to problems – such as pollution, climate change and species loss – that transcended the boundaries of a single country. One of the earliest

<sup>44</sup> A.L. Tsing, *Friction: An Ethnography of Global Connection*, Princeton University Press, Princeton 2005, pp. 1-2.

global manifestations of this environmental concern was the United Nations Conference on the Human Environment in Stockholm, Sweden and the subsequent launching of the United Nations Environment Programme.<sup>45</sup> When this campaign reached the South, northern conservation priorities, such as saving tigers, rescuing elephants or protecting biodiversity, were superimposed on southern countries' own environmental agenda.

European wildlife biologists emphatically argued that only in the forests of India and the mangrove swamps of Bangladesh there were tigers in sufficient numbers to make an effort to save this endangered species. At its Tenth General Meeting in New Delhi in 1969, the International Union for Conservation of Nature resolved that the estimated 2000 specimens of the South Asian sub-species of tiger (*Panthera Tigris*) in India, East Pakistan, Nepal and Bhutan were a viable breeding population. The Indian political and scientific opinion also proved to be favourable. A ban on tiger shooting was imposed in 1970, the Wildlife Protection Act was passed in 1972, the Indian Board for Wildlife was set up in 1972, and Project Tiger was launched in 1973 in nine reserve forests. Project Tiger initially started as a task force set up within the Indian Board of Wildlife chaired by Dr Karan Singh, Minister for Health and Family Planning.<sup>46</sup> It was precisely around this time that global voluntary groups made their appearance on the Indian environmental scene. Most important among them was the World Wildlife Fund or WWF.<sup>47</sup> The tiger proved to be a good choice because of its existence in different regions across India. Furthermore, the protection of the tiger also involved the protection of its natural food supply and hence had

<sup>45</sup> D. Worster (ed.), *The Ends of the Earth*, Cambridge University Press, Cambridge 1988, Introduction.

<sup>46</sup> P. Greenough, "Pathogens, Pugmarks, and Political 'Emergency'", in Greenough, Tsing, *Nature in the Global South* cit., pp. 201-230; also Rangarajan, *India's Wildlife History* cit., pp. 94-107.

<sup>47</sup> *Ibid.* The WWF pledged over a million dollars to help save the tiger in Asia. Established in the early 1960s, the society was a major catalyst for governmental action in India, where the Indian Prime Minister readily agreed to personally supervise the project.

a much broader scope than the mere protection of the species. The project thus expanded into multiple directions. Preserving India's wildlife as a whole was integral to a nationalist project to save its emblem. Project Tiger played a key role in broadening ecological perspective. While it clearly started out as a single-species scheme, the tiger's position in the food chain generated a logic that put the spotlight on other species such as deer, lion, monkey, and rhino, as well as water resources and vegetation.

The Sundarbans was one of the nine initial tiger reserves.<sup>48</sup> It had already been a reserved forest since colonial days. From the early 1970s it was also included in UNESCO's global chain of biosphere reserves.

In 1972 the Project Tiger task force took a nation-wide tiger census which found a total population of 1827 animals. The task force initiated a conservation programme called the ecosystem approach. The premise of the ecosystem approach was the need to provide an extensive range for adult tigers, each requiring a minimum of 10 square km of undisturbed territory. A further premise was that the minimum tiger population required for sustained reproduction was 300. This suggested the need for reserves with areas of at least 3,000 square km. The Sundarbans thus became a local theatre for a larger universal campaign informed by the science and politics of international capitalism. The chain of reactions generated in the Sundarbans propagated in multiple directions, often far beyond the aspirations of the original project. Following the recommendations of Project Tiger, some inner core zones of the Sundarbans were reserved for undisturbed reproduction and buffer zones were established around them, where villagers would be allowed limited access for the collection of forest products. As dictated by ecosys-

<sup>48</sup> India became the custodian of more than 60% of the world's tigers. A chain of 25 reserves was created, covering an area of 33,000 square km. The Project Tiger Reserves are administered by the states under the supervision of the federal government. They are incorporated in 75 National Parks and 425 wildlife sanctuaries, many of which are also included in the global chain of biodiversity reserves. The reserves occupy 140,000 square km or about 4% of India's land surface. Greenough, "Pathogens, Pugmarks, and Political 'Emergency'" cit., p. 209.

temic approaches, the core zones were to be carefully bounded and all roads closed, stock grazing and commercial timbering were to be suspended in them, and silted watercourses and the habitats of depleted tiger prey species (mostly deer) were to be restored. The existing forest landscapes were to be reengineered. The implementation of Project Tiger involved the relocation of many villages from the buffer zone. Thus, the price for setting up the tiger reserve was human displacement. Hundreds of people were relocated for each tiger being protected. Only in a few buffer areas were people allowed to remain. The ideal size of the reserves as suggested by international wildlife biologists would have been 3000 square km, but India with its ever increasing population had no other choice but to opt for less than 1500 sq. km on average. In the case of the Sundarbans the size was even smaller. The task force predicted that as they increased in number the tigers would eventually start roaming outside the core and buffer zones.<sup>49</sup> The prediction has come true, in the Sundarbans as well as in other reserves. Clashes between Forest Department staff and local villagers are very common in the Sundarbans today, the main issues being poaching, fishing and human deaths caused by tigers.

The conflict between humans and tigers in the Sundarbans is rooted in the socio-economic condition of the local people and the tigers' man-eating habits. The per capita income in the Sundarbans is estimated at less than half the state average. In their struggle for survival thousands of people enter the forest braving the crocodiles, sharks and tigers in order to gather honey, cut wood and catch fish. This brings them face to face with the tigers. Sometimes the tigers enter villages near the buffer zones and carry off men, women or cattle. This is an area where tigers kill hundreds of people a year, but since they are a protected species, killing a tiger that has been preying on a village will bring in the government authorities to mete out punishment; a terrifying prospect for the deceased's near and dear. Thus, the new widow and the victim's children are forbidden to cry

<sup>49</sup> Ibid., p. 211.

and taught to say their father has died of diarrhoea, because if the actual cause of death is found out the family members will be forced to pay for the dead trespasser and will be treated like criminals.

In his remarkable novel *Hungry Tide*, Amitav Ghosh gives a vivid interpretation of this conflict between the indigenous people of the Sundarbans and the tigers. In the novel, a tiger is accidentally trapped in a livestock pen while trying to carry away a calf. An angry mob quickly gathers and attacks the incapacitated animal with sharpened staves. A boy thrusts a sharpened bamboo pole through a window and blinds it. Piya, an American cetologist and the central character in the novel, tries her best to save the animal but is helpless in the face of the hostile crowd. Even her associates Horen and Fokir side with the mob and participate in the killing. Such occurrences are very common in the Sundarbans. The incident portrayed in the novel is illustrative of a fundamental and yet delicate issue that continues to feature prominently in global debates on the management of nature. The setting up of the tiger reserve has given rise to a host of new unknowns, including the human-tiger conflict. The later conversation between Kanai and Piya about the killing of the tiger brings out the essence of the several flashpoints in this complex matter.<sup>50</sup>

The issue of the tiger-human conflict in the Sundarbans, depicted in the above story, has its roots in the policy pursued both by the colonial and the post-colonial state in India. The colonial forest policy, fuelled by global capitalism, led to the dislocation and degradation of the local people. The post-colonial project of tiger conservation has further contributed to their misery. The forest policy of the post-colonial state has excluded the indigenous people from the Sundarbans tiger reserve. It has deprived them of the right to use the forest, which it has preserved only for the animals. To quell the local people's hostility towards the state conservation policy, global agencies

<sup>50</sup> A. Ghosh, *The Hungry Tide*, Harper Collins, Delhi 2004, pp. 289-295. Ghosh, though a fiction writer, has undertaken extensive field-trips to the core area of the Sundarbans and there is ample evidence to show that his is an accurate depiction of that reality.

have recommended the involvement of residents in the management of local resources. The biosphere reserve and Sundarbans tiger conservation programmes are based on a highly participative approach of local communities. But the on-ground implementation of tiger conservation has neglected the enormous knowledge of the people of Sundarbans about their ecosystem and the local wildlife. Thus, the gap between the universal official rhetoric of conservation and the actual implementing of policies aimed at the empowering of local communities has widened. Forest officials congratulate themselves on the rapid increase of the tiger population, but all is not well in the Sundarbans. Smugglers and poachers, supported by political and business interests and sheltered by local communities, raid the protected forests for valuable exports.<sup>51</sup> The local people's hostility to the official conservators allows poachers to operate with ease. The state exerts its surveillance of the protected forest mainly through the Forest Department, whose officials have been known to exploit their position for private gain, playing a pivotal role in the poaching of timber, deer meat and tiger skins. The Sundarbans has also provided shelter for people who live off river robbery and others who have taken advantage of the nearness of the border to develop two new specializations: kidnapping and piracy.<sup>52</sup>

## Conclusion

In the Sundarbans, the tiger has always been at the core of the issue of managing the unknown, and the issue of managing the unknown has essentially been an issue of managing the tiger-threat. This was the case in the past and still is. I have tried to demonstrate in this essay that

<sup>51</sup> Contemporary Indian newspapers like *Anandabazar* (Kolkata, India), *The Statesman* (Kolkata, India) and *The Telegraph* (Kolkata, India) are packed with information about lawlessness in the Sundarbans National Park.

<sup>52</sup> W. van Schendel, *The Bengal Borderland: Beyond State and Nation in South Asia*, Anthem, London 2005, p. 274. In the 1990s, the trade in the skins of Royal Bengal Tigers was extremely lucrative, as the Bangladeshi and Indian elites were ready to pay large sums of money for these exclusive items of interior decoration.

in the Sundarbans the attempt to manage the unknown has a long history. During the pre-colonial period, the Sundarbans regularly functioned as a buffer resource helping people to face unexpected events. It successfully accommodated displaced people in times of crisis, natural calamities or economic stress. In early British India the Sundarbans remained a “mystic drowned land”, “dangerous”, “unknown” and difficult to manage or order. In the course of time, however, Europeans realized its potential as an untapped natural resource and took the necessary measures to transform it into a revenue yielding forest. These included coping with the tiger threat; a task, however, that was delegated to the indigenous *shikaris*. The British rulers were convinced that local people armed with sound indigenous knowledge would be more capable of combating the man-eaters on this dangerous terrain. The post-colonial state, instead, has excluded the local population and their knowledge from their conservation project. To the locals, dealing with the tigers may be indeed simpler than facing the intrusions of the modern state at different points in history has been.

The short-sightedness of official conservation policy in independent India is reflected in its neglect for local communities’ immense knowledge of ecosystem and wildlife management. This indigenous knowledge is tapped by the officials when convenient and then discarded. The relevance of traditional knowledge of biological resources needs to be understood in the full context of the local social and cultural milieu, including the surrounding habitats. But unfortunately the local communities have never been asked to become a part of the decision-making process. The universal rhetoric of conservation and its implementation have given rise to new complexities which have alienated the local communities, and this has made the new unknowns even more unmanageable. The Sundarbans is thus an ideal example of how universals travel across difference and are charged and changed by their travelling. It is through this friction that universals become practically effective. Yet they can never fulfil their promise of universality. They may transcend localities, but cannot shape the world in their image.<sup>53</sup>

<sup>53</sup> Tsing, *Friction: An Ethnography of Global Connection* cit., p. 8.



Professional foresters, wildlife biologists and other experts seem to be confident about the volume of resources available in the Sundarbans today. While available information in official literature regarding the size and extent of the reserve may appear to be comprehensive, verification on the ground indicates that this is not so. Let us just take one example to illustrate this point. How much fishing resources are actually left in the Sundarbans? There is unfortunately no way to ascertain this. The forces of industrialization of the globalised world have been continuously threatening the reserve in recent times. Ever-expanding human settlements have encroached on large areas in the buffer zone. Intense water transport using up an enormous amount of fossil fuel is disturbing water life through continuous navigation and oil slippage. The decrease of fresh water flow has increased the salinity of the water and seriously perturbed the region's ecosystem. A large number of water bodies on the outskirts of nearby Kolkata, which had previously acted as natural filters, have been drained and replaced by housing estates to meet growing demand. As a result the city's effluents now flow directly into the Sundarbans biosphere reserve. All this is causing great harm to the mangrove forest and the natural food chains. Various fishes and other water species may soon disappear in both the Indian and Bangladesh Sundarbans. 150 years ago, the Sundarbans was home to the Indian Rhino, the Javan Rhino, wild buffaloes and river dolphins. All these are now extinct in the area. Much of this destruction is taking place under the ideological umbrella of global projects for the creation of biosphere reserves, the protection of tigers or the promoting of eco-tourism. At the same time, nothing is known about the interior of the Sundarbans and the ongoing changes therein. It is extremely urgent to quantify how much is left of local resources to fall back upon in times of crisis. The issue, again, is the managing of the unknown. Today, the Sundarbans still remains a hidden, vaguely quantified ecological reserve, despite the fact that on paper it is a National Park.