

THE SUNDARBANS: FROM WASTELAND TO WASTED LAND

Kendra Patterson*

The Sundarbans, a large mangrove forest shared between Bangladesh and India, is a true frontier land. Formed by deltaic waterways interspersing shrub and tree-covered mudflats, it depends on both the twice-daily salt tides of the Bay of Bengal and freshwater flows from the Ganges-Brahmaputra river system to maintain its rich fisheries and thick mangrove cover. It is home to man-eating tigers, as well as crocodiles and sharks, and much of its land disappears when the tide comes in. Never-ending erosion and accretion cause islands to form and disappear within decades. It is a place that is inhospitable to settlers and poses constant dangers to those who venture into it to make their livelihoods from catching fish, gathering honey, and cutting wood. Nonetheless, for centuries people have mustered the courage and spirit to make a living off its riches. Land has been cleared for paddy fields, homes built on tenuous islands, and dikes fashioned to keep the tide from washing away settlements. Many settlers spend much of their days repairing these dikes, and others brave tiger and shark attacks in order to feed their families. The Sundarbans, despite its dangers and difficulties, provides livelihoods and daily needs to millions, and for Bangladesh, it contributes a huge chunk of the nation's GDP.

Human fortitude and ingenuity have not been as generous in providing for the Sundarbans' needs. Despite attempts by both Bangladesh and India at sustainable use and conservation, the forest is dying. If the status quo continues, it could reach its ecological tipping point in less than 30 years. Although there is a place for national action, it is no longer enough for Bangladesh and India to manage their parts of the forest separately without consideration of the whole. The existential threats the Sundarbans now faces will require cooperative action in multiple sectors and across multiple levels. Additionally, the international community has a role to play. After an overview of the important functions the forest performs for both countries ecologically,

* Kendra Patterson is currently a National Science Foundation IGERT Fellow pursuing a PhD in Political Science at the University of Florida. Her research focus is transboundary water resources and adaptive management.

culturally, and economically, this paper will discuss the reasons for its decline and what must be done to save it.

The Importance of the Sundarbans

Ecology

Any discussion of the Sundarbans must begin with its unique ecology, as its rich biodiversity of flora and fauna is what provides the basis for its cultural and socioeconomic roles. The Sundarbans was born of the intermixing of salt and freshwater and the sediment washed down from the highlands by the Ganges-Brahmaputra river system. As the rivers shifted course naturally over the centuries, the forest adapted to the changing freshwater flows and sedimentation loads. It also adjusts itself to seasonal variations in freshwater availability, and to daily saltwater tides from the bay. It is a land in flux, at once both heartily capable of adaptation and exquisitely sensitive to changes to its natural environment. It is far from uniform throughout: saltier at the coast and in the west, containing a freshwater ecosystem farther inland, it is home to an astonishing array of plants and animals.

Animals found in the Sundarbans, like the forest itself, are highly adaptable. The Bengal tiger is perhaps the most well-known of these. Found throughout the Subcontinent and even as far north as Tibet, in the mangrove forest it has learned to swim and even hunt humans for food. The Ganges river dolphin, a cousin to ocean dolphins, has also adapted to the less salty Sundarbans environment. Plants found in the forest are equally amenable to changing and often harsh conditions. Different mangrove species thrive in habitats as diverse as low-oxygen mud to total inundation by salt water. The variety of habitats within the mangrove ecosystem mean that its biodiversity is often richer and more varied than surrounding areas.

There are differences in habitat between the Bangladeshi and Indian Sundarbans, with the Indian side being more saline. Perhaps for this reason, less mammal species have been documented on the Indian side, 31 to Bangladesh's 49. However, studies in both countries reveal a similar number of bird, reptile, and fish species. These include 95 species of waterfowl, almost 60 species of reptiles, and 14 kinds of turtles and tortoises. Over 120 species of fish, which range from

freshwater to marine, are caught commercially.¹ As many as 36 species of mangroves have been found on both sides of the border.² The Sundarbans is also extremely important to the health of surrounding ecosystems: it functions as a nursery for fish and crustacean species, including shrimp, fin fish, and crab, many of which eventually make their way to offshore and deep sea fisheries.³

Culture

The Sundarbans is central to the spread of Islam in the Bengal region, and particularly to the development of Bangladesh's Islamic traditions. Brought by the Saints and not by the sword, Islam in Bangladesh is often characterized as a peaceful and tolerant religion.⁴ The early Sufi saints, who brought the religion to the region beginning in the 13th century, were responsible for much of the early clearing of the Sundarbans forest. They were cultivators, and spread their religion through involving their followers in communal agricultural labor.

In those days the Sundarbans was a frontier whose edges marked the end of civilization and the beginning of wilderness, a sort of "here be dragons" area of the Subcontinent. It was probably precisely for this reason that it attracted the Sufis, who were more interested in an inward understanding of Islam than an outward expression of it through conquest. It required no small feat of imagination to envision the Sundarbans as rice paddy farmland. Yet, this is exactly what these early Muslim mystics did. Along with their enterprising farmer followers, they cleared the thick jungle, built embankments to keep the salt tides at bay, built freshwater storage tanks, homes, and communal buildings, and planted rice, all the while withstanding the tigers, fevers, and other dangers of the forest.⁵ One of the most famous examples of this type of early settler was Khan Jahan, who eventually went on to build mosques,

¹ Brij Gopal and Malavika Chauhan, "Biodiversity and its conservation in the Sundarbans Mangrove Ecosystem," *Aquatic Science* 68 (2006) 345.

² Gopal and Chauhan, 343.

³ Md. Shahidul Islam and Mahfuzul Haque, "The mangrove-based coastal and nearshore fisheries of Bangladesh: ecology, exploitation and management," *Reviews in Fish Biology and Fisheries* 14 (2004) 157.

⁴ Interviews by author with Islamic experts in Bangladesh, September 2008.

⁵ Richard M. Eaton, "Human Settlement and Colonization in the Sundarbans, 1200-1750," *Agriculture and Human Values* (Spring 1990) 7.