

Save Sonadia, save Sundarbans

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SOURAV MAHMUD

SONADIA Island is one of the biodiversity hotspot of Bangladesh. In 1995, the Government of Bangladesh included a provision for the declaration of Ecologically Critical Area (ECA) in the Bangladesh Environment Conservation Act. Twelve sites are classified as ECAs and guidelines exist to control further damage to these areas. Sonadia is considered ecologically important by the government and in 1999 was declared as an ECA under Environmental Act of 1995.

Sonadia Island is located on the south-east corner of Bangladesh. The island is unique for wintering shorebirds specially the globally critically endangered Spoon-bill sandpiper, one of the rarest migratory birds in the world, with a population of just 300-350 pairs left in the wild (Zöckler, 2006). Lying within the East Asian-Australasian Flyway, Sonadia is used by migratory birds as a stopover during their long migration further south.

The island provides breeding areas for four globally threatened species of marine turtles, and serves as a significant bird refuge for over 80 migratory species. In addition, its inshore waters are feeding grounds for a number of globally threatened marine mammals, such as the

Irrawaddy and Bottlenose dolphins. Sonadia Island supports the last remnants of special mangrove forests, which once stretched along most of the coastline of Chittagong and Cox's Bazar. These mangrove species are different from those found in the Sundarbans and can tolerate higher levels of salinity. The island supports a large number of marine turtles, water birds, mollusks and echinoderms.

The government is considering to establish a deep water sea-port at Sonadia island and a coal-based thermal power plant at Hoanok Union near Sonadia Island, Moheshkhali, in Cox's Bazar. Bangladesh Government also going to establish another two more coal based thermal power plants to be constructed at Anwara of Chittagong near Karnophuly off-take and Rampal of Bagerhat along the Pasur river about 4 km distance from Sundarbans buffer zone.

The coal-based thermal power plant in an area adjacent to the Sundarbans would harm the forest's unique characteristics. The construction of the shipyard and silo inside the Sundarbans would lead to felling of trees and extinction of wildlife. And it is also the same threat for Sonadia's ecosystem.

When the nation was one to protect the Sundarbans and its biodiversity, an initiative had been taken to build a

thermal power plant, based on coal imported from India, with a capacity of 1,320 megawatt in the super critical area of the forest. If coal is burnt to generate power, a large quantity of sulphur dioxide, nitrous oxide, carbon monoxide, carbon dioxide and chlorofluoro-carbon would spread in the air, causing a great measure of environmental degradation, including acid rain, in the area. It is our responsibility to preserve the Sundarbans.

Sonadia island has formed as a barrier island just south-west of Moheshkhali Island. Natural sandy break waters face parallel to the flat coastlines of Moheshkhali. To the east a small channel separates the two islands while to the southeast shallow bays separate it by 3.5 km from the mainland Cox's Bazar. The beach is rich in mollusk shells. The beaches and shallow shoals surrounding the site provide an excellent staging area and wintering ground for migratory waterfowl and shorebirds, and the sand dunes provide nesting grounds for marine turtles. The sandy shore is the last remaining habitat for numerous red crabs. The largest undisturbed salt marsh area is in the south of Sonadia Island; other areas are along the mangrove formations north of Sonadia West village, between Moheshkhali and Sonadia Islands, and along the mangrove formations of Baradia-Vanga canal in Moheshkhali.

The mangroves of the site have developed in a lagoonal coastal setting and also a deltaic formation, with salt-tolerant dominant species attributed to the extreme ecological factors of high salt-content soil and water and it is total 500 ha. The mangroves provide an excellent wintering ground for migratory waterfowl, shorebirds, and a nursing and feeding ground for fish and shrimp species. The near-shore waters provide important habitat for breeding, growth and development of many inshore and near shore fishes and invertebrate species of the north-eastern part of the Bay of Bengal.

The site's diverse habitats support three different vegetation types. The vegetation of the sand dunes consists of 35 species of angiosperm, in particular *Ipomea pescapre*, *Vitex trifolia*, *Clerodendrum inerme*, *Pandanus odoratissimus* and *Calotropis gigantia*. The salt marsh vegetation consists of *Porteresia coarctata* and *Myristichia wighthenia*. The plant population of *Porteresia ycoarctata* (Roxb) Tateoka at Sonadia island, a wild grass relative of rice, is internationally important for the development of salt-tolerant varieties of rice. Twenty-seven species of mangrove and mangrove-associated vegetation were recorded in earlier surveys from Sonadia.

About 80 species of migratory waterfowl and shorebirds visit the site for resting, roosting, feeding and wintering, and as a staging ground during migration. These include four bird species that are listed as globally threatened the Spoon-billed Sandpiper, Asian Dowitcher, Nordmann's Greenshank and River Lapwing. Two freshwater turtles -- the Bengal-eyed turtle (*Morenia paterci*) and the Indian flap shell turtle are reported from the site. A total of ten species of frogs and one species of toad were recorded from Sonadia.

Previous surveys of the Moheshkhali Channel found 79 species of fish, including 78 bony fish species. The site is very rich in mollusks and crustaceans. Molluskyspecies belonging to 14 genera of bivalves, clams, mussels and oysters are known to occur at the site (Anon., 1990). Crustaceans include various species of portunid crab, Mud Crab and Blue Swimmer Crab. Of particular importance is the Indian Horseshoe Crab or King Crab, which is considered a living fossil and is listed as a threatened species. 19 species of peneaid, solenocericid, sergestid and careidean prawn species have been recorded in a number of surveys of the Moheshkhali channel. The canals and near shore and offshore areas of Sonadia Island support at least four species of globally threatened coastal and marine cetaceans, including Finless porpoise, Irrawaddy dolphin, Bottlenose dolphin, and Indo-Pacific Humpback dolphin (*Sousa chinensis*). All are listed in the IUCN Red List of Threatened Species. Cetacean species diversity might be greater than recorded so far. The threatened Olive Ridley (*Lepidochelys olivacea*) and Green turtle (*Chelonia mydas*) nest at Sonadia island. The nesting site is considered unique in Bangladesh in view of the fact that the beach is pristine, free from tourism and other impacts.

Now a Japanese consultancy firm named Pacific Consultant International (PCI) has conducted a feasibility survey for the construction of the deep-water seaport at the site. The proposed port would have 54 jetties, with a total length of 11 kilometers. The first phase would be completed by 2016 and the full development finished by 2055. The Jetty will be used for coal unloading and transportation.

So it is a question of the general people and the environmentalists: how a globally important biodiversity hot spot and ECA is going to give way a deep sea port and coal based thermal power plant?

If the two big structures are established in Moheshkhali the total coastal ecosystem would be changed and the habitats important for sea turtles, shorebirds and cetaceans will be lost. And it would also wiped out the mangroves and overall



PHOTO: SAYEM U CHOUDHURY

Spoon-billed Sandpiper at Sonadia island

marine resources in an area where also hundreds of thousands of community people from the whole of Moheshkhali, Kutubdia and even Chittagong depend for their daily livelihood.

It would be a great upcoming human induced disaster destroying our costal ecosystem if four establishments are constructed in south, center and eastern part of the coast along the Bay of Bengal including the world heritage site.

The proposed site (Rampal) for the plants is too close to famous Sundarbans forest and Sonadia Island. The discharge from the power plant, like sulphur dioxide and fly ash, will have disastrous consequences for the fauna and flora of the mangrove swamps as well as the sea shore biodiversity. If excess pressure is put on the Poshur river, it will have a definite negative impact on the forests. A deep sea port at Sonadia Island would destroy the habitat not only of sea turtles, but also shorebirds and other biodiversity related to coastal wetland and marine systems.

PCI selected the Sonadia site in the Cox's Bazar district, with a second suitable site option (of similar depth) about 20 km north at Kutubdia Island. This alternative site is less important for biodiversity compared to Sonadia island, and would leave a sufficient buffer zone. It is our request to all concerned people, scientists and environmentalists nationally and internationally to advocate for and raise these issues and try to convince the Bangladesh Government to relocate the deep-sea port, coal power plant sites away from biodiversity hotspots like Sundarbans and Sonadia island.

The writer is a biodiversity specialist nature.sourav@gmail.com



Sundarbans along the Pasur river,

PHOTO: SOURAV MAHMUD

Ramsar Convention: Our obligation

Our concern is not political or administrative. The people of the country have got every right to know about healthy sustenance of the unique ecosystem situated in Bangladesh coastal area.

DR. M.A. BASHAR

IT is learnt from newspapers very recently that in the Sundarbans area three large constructions will take place which are very dangerous and detrimental to normal functioning of the mangrove forest ecosystem. It means that the interactions between biotic and abiotic factors will be seriously hampered in the ecosystems conservation. The projects are: construction of coal-based electric plant; depot for storage of coal in Phulbari; and a ship-yard covering large area. Already it is protested by various environment related organizations. The Forest Department has also shown its reservation. And Ramsar Convention points out that if these three constructions are done in the Sundarbans area then biodiversity in the ecosystem will be seriously hampered.

Ramsar Convention (Ramsar sites) is concerned with *Wetlands of International Importance*. The convention was signed in Ramsar (Iran) in 1971 and came into force in December 1975. This convention provides a framework for international cooperation for conservation of wetland habitats. The Ramsar convention was adopted to halt the continued destruction of wetlands, particularly those which support migratory waterfowl, and to recognise the ecological, scientific,

economic and recreational values of wetlands (Kusler and Kentula, 1990; Hails, 1996). The convention places general obligations on contracting party states relating to the conservation of wetlands throughout their territories with special obligations pertaining to those *Wetlands of International Importance*.

The Ramsar convention covers fresh water, estuarine and coastal marine habitats and includes more than 844 sites with a total area of more than 54 million ha. Up to 1998, the 94 countries that have signed the Ramsar convention agreed to conserve and protect their wetland resources and designate for conservation purposes at least one wetland site of international significance. A widely cited definition of wetlands is found in RAMSAR convention, such as: areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or saline, including areas of marine waters, the depth of which at low tide does not exceed six metres. Bangladesh signed the convention in 1972.

By this time letter on behalf of Ramsar Convention has been written to the government of Bangladesh expressing concern that, these three constructions will release huge amount of carbon in nature, large volume of sulphur and dust

particles. Coal burning will produce high rate of sulphur, this will increase sulphur dioxide in the atmosphere and increase possibility of acid rains. The Ramsar Convention points out that no survey has been made so far on the question of bad effect of such releases on the biodiversity of Sundarbans ecosystem. The global organisation asked the government to produce data on the matters and send to its head office. The global organisation also pointed out that according to the Bangladesh Environment Conservation Act (1997) and Environment Conservation

Law (1995) the country cannot go for such constructions in the Sundarbans area.

Our concern is not political or administrative. The people of the country have got every right to know about healthy sustenance of the unique ecosystem situated in Bangladesh coastal area. We are to see how the largest mangrove ecosystem is scientifically affected and brutally tortured on the question of development hoodwinking environmental soundness. How the biodiversity is crying only to survive in the planet on the point of its right to be survived there. It is learnt that if

a 500 megawatt electric plant is set up in an area it will produce (per year) 37 lac tons of carbon dioxide, 10 thousand tons of sulphur dioxide, 10 thousand tons of nitrogen oxide, 500 tons of dust particles, 720 tons of carbon monoxide, 170 tons of mercury, 225 pounds of arsenic, and 114 pounds of lead.

It is learnt that the electric plant (coal-based) to be constructed in the Sundarbans area will be of 2640 megawatt capacity. In that case just calculate the volume of dangerous pollutants it will release in the ecosystem. In addition to that other two constructions will release more pollutant materials. If this is the situation of the environmental degradation to be faced in the Sundarbans area because of the constructions to be made, then both the plants and the animals in aquatic and terrestrial habitats will have to collapse with their photosynthetic and respiratory activities choked. No plant-animal interaction will be functional in the area. And consequently Sundarbans ecosystem will lose its status.

Such drastic environmental degradation attempts are very open to the people of the country. People of the country have right ask the authority what about the query of the Ramsar Convention regarding the situation? It is to be remembered that such degradation of biodiversity in any ecosystem of the country will cause biological degeneration for the people in future and it may soon to be happened if not checked now.



The Sundarbans: Abode of Royal Bengal Tiger

The writer is Professor, Department of Zoology and former Dean, Faculty of Biological Sciences University of Dhaka.