

Sustainable Development and Biodiversity Conservation in the Coastal Protection Forests of Bangladesh

The challenge

The Sundarbans, located in south-western Bangladesh, is the largest continuous mangrove forest in the world and has been inscribed as a UNESCO World Heritage Site. The 6017 square kilometres of mangrove forest serves as a nursery ground for numerous fish and crustacean species. Hence, the forest is crucial to support the livelihood of the coastal communities. The area is home to a wide variety of flora and fauna, including critically endangered species such as the Bengal Tiger and the Irrawaddy Dolphin.

The mangrove forests are the coastal region's first line of defence against the impact of cyclones - the forests absorb 30 – 40% of the force of a cyclone before it hits the often densely populated areas. In villages that are protected by a wide belt of mangrove forest, storm surges result in a significantly lower number of deaths compared to villages without this line of defence.

However, the Sundarbans is under severe pressure and its protective function is rapidly being undermined by poaching, illegal logging and other means of unsustainable resource extraction. Climate change and sea level rise have negative impacts as well: high tides are penetrating further inland each year, causing top-dying of the Sundari trees which are said to be intolerant to increased salinity.

Project name	Sustainable development and biodiversity conservation in coastal protection forests
Commissioned by	German Federal Ministry for Economic Cooperation and Development (BMZ)
Project region	Bangladesh
Lead executing agency	Ministry of Environment and Forests (MoEF)
Duration	2011 to 2015

The adjacent man-made embankments are the coastal region's second line of defence. However, as a result of high settlement pressure, the ecologically sensitive areas adjacent to the embankment are also increasingly under threat. In many places, settlements have illegally been built on the embankments, weakening their protective function. The establishment of large numbers of shrimp ponds and the oftentimes concurrent illegal waterworks as well as the increased frequency and intensity of cyclones and storm surges - an impact of climate change - are adding to this. Cyclone Sidr in 2007, followed by cyclone Aila in 2009, breached vast stretches of the embankment, which still have not been fully repaired.

Around 15 million people live in Bangladesh's coastal region and make a living from forestry, fishing, shrimp production and agriculture. For them, protection of the mangrove forests and the ecologically sensitive embankment area is a matter of life and death.



Bio-organic shrimp production.



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Left: Tree plantation in pilot regions.

Right: Mud crab fattening and hatcheries.

Our approach

Sustainable Development and Biodiversity Conservation in Coastal (Protection) Forests (SDBC-Sundarbans), a joint pilot project is being implemented by the Forest Department under the Ministry of Environment and Forests, Bangladesh and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). The project's objective is to enable the resident population in the pilot regions of the Sundarbans to participate in safeguarding as well as to conserve biodiversity and manage the ecologically sensitive embankment areas.

Success factors

In line with the Bangladesh Climate Change Strategy and Action Plan 2009, the project works with community-based co-management groups. These groups have already been formed by the Forest Department not only to ensure livelihood support but also to protect the communities against future disasters and the impact of climate change. The target group is the rural population living on the dykes and in the adjacent so-called ecologically critical zones in the three coastal districts Satkhira, Khulna and Bagerhat. In particular, the project addresses the poor sections of the population, including landless groups and ethnic minorities who use the natural resources (gatherers of wood, palm leaves, resin, wax, honey, fish).

In cooperation with the responsible government agencies, the co-management groups discuss the diverse interests of local stakeholders and negotiate user rights along with financing mechanisms and benefit sharing. They design interventions to maintain the embankments which involve local people and, in this manner, assist in safeguarding and conserving biodiversity and ensuring their livelihoods.

Workshops for local communities on how to reinforce, reconstruct and maintain selected embankments in their communities adjacent to the Sundarbans are conducted. The local population learns how to plant the dykes and their surroundings with trees in order to stabilize them and prevent erosion.

Furthermore, the project is organising trainings offering for local people on alternative income generating activities (AIGs) such as mud crab breeding and the sustainable harvest of the Nypa palm as well as on shrimp production. So far more than 3,000 small-scale farmers in the project area are trained to produce certified organic shrimps. Due to the environmentally friendly production methods, this initiative is not only creating new income opportunities for the local population but is also promoting biodiversity conservation.

Overall, this pilot project is designed to serve as a role model for the Government of Bangladesh and other donors who can replicate and upscale this approach.

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