



COUNTRY	STATE	POPULATION	NATIONAL MITIGATION TARGET	STATE EMISSIONS IN 2013
INDIA	WEST BENGAL	101,600,000 (2022)	-33 TO -35% IN EMISSIONS INTENSITY OF GDP BY 2030 (BASELINE 2005)	171,7 MTCO ₂ e

Sundarbans • Banking on mangroves for land, life and livelihood

The Sundarbans are archipelago of islands at the mouth of the Ganges, in eastern India and Bangladesh, and the world's largest estuarine mangrove ecosystem. In the face of increasingly frequent and devastating flooding and storm surges, local communities in the state of West Bengal, in India, have taken the lead in afforesting embankments with mangroves, enabled by a local NGO, the [Nature Environment and Wildlife Society](#) (NEWS), channelling funding from the [private sector](#) and international non-profits. Along with its immense carbon sequestration potential, these mangroves are also home to the Bengal tiger, and species of rare snakes, fish, and crustaceans – all of which have benefitted from the afforestation programme.

Adaptation through afforestation

The Sundarbans delta has already experienced the impacts of global warming, having lost more than [28%](#) of its habitat, and nearly [4%](#) of island surface area due to rising sea levels in the last century. While higher salinity in the water has affected fish populations and local agriculture, cyclones like Aila in 2009 have also caused significant damage to villages and settlements.

In this context, local communities have taken to planting more mangroves along the embankments protecting the land, with the project headed by NEWS, launched in 2011, having planted more than [16 million](#) mangroves. Since then, [5,200 ha](#) of mangroves have been restored, through rigorous planting drives every monsoon season. The mangrove forest has proven to protect the embankments, and subsequently, the settlements and habitats it hosts, against storm damage by [reducing](#) the height and velocity of waves. In 2020, when the Amphan cyclone hit the region, the restored mangroves [played](#) an important role in acting as bio-shields.

Climate and biodiversity benefits

One of the most significant outcomes of the mangrove restoration is the sequestration of carbon – blue carbon ecosystems (blue carbon referring to carbon that is stored in marine or ocean environments) are some of the [most effective](#) natural carbon sinks. The NEWS project in the Sundarbans, over a span of 20 years, is set to sequester [700,000 tonnes](#) of CO₂. The project issues carbon credits to the private institutions financing it (such as Danone, Schneider Electric, Crédit Agricole and others, through the [Livelihoods Carbon Fund](#)), a model that has helped NEWS scale up the project and replicate it across more villages in the delta. Funding is also channelled from the domestic private sector, and from national and international non-profit organisations and initiatives.

The project has also contributed to a restoration of local biodiversity. The Sundarbans are the [sole habitat](#) of the Bengal tiger, the Ganges River dolphin, the Irrawaddy dolphin, the Indian Python, the Estuarine crocodile, and over 260 species of birds. The mangrove restoration has helped fish, bird, shrimp, crabs and other species to [return](#), and have also contributed to livelihoods, through for example, the culture and local trade of shrimp and crabs.

Improving livelihoods

The project also has economic inclusion at its heart, and a goal to empower the local community, especially women – who have been the stewards of the project, right from making hand-drawn maps of the areas covered, working in the nurseries, and planting the mangroves, to surveying and protecting them. Their participation allows them to earn about [\\$430](#) a year, a valuable addition to the household budgets.

In exchange for their work, NEWS also helped the local communities by launching a brand, [Badabon Harvest](#) (*Badabon* being the Bengali word for mangrove), [accelerated](#) by the start-up GRINS, to facilitate the access to the market in Kolkata to sell organically cultivated food. This permitted improved revenues, and the implementation of more sustainable methods of livestock breeding, agriculture, pisciculture, apiculture, and so on.