

India lost 40% of its mangroves in the last century. And it's putting communities at risk

Mangroves isolate carbon at two to four times the rate of tropical forests like the Amazon. | Photo Credit: [Getty Images](#)

The sight of the Sundarbans, the world's largest mangrove forest, straddling India and Bangladesh, is humbling. This biodiversity hotspot is home to 180 species of trees and plants growing within its marshy boundaries, the Gangetic dolphin, estuarine crocodiles, river terrapins, hawksbill turtles, horseshoe crabs and of course the iconic Bengal tiger.

The tides in this 10,000 sq.km. swamp are so dramatic that about a third of the land disappears and reappears every day. It has been happening for centuries, but the changes have become more extreme in the past few decades.

In this delta of the Ganga, Brahmaputra and Meghna rivers, the sea is rising more dramatically than in other parts of the world, [research](#) shows. Known as the biggest carbon sink in South Asia, these mangrove forests are recognised as a world heritage site.

Environmental services

However, the story of the Sundarbans, which means 'beautiful forest' in Bengali, is not limited to its incredible variety of flora and fauna. There are as many as 4.5 million people in two countries — India and Bangladesh — who depend on this tidal forest for their survival.

The same holds true for the other mangrove forests along India's 7,500 km coastline. Mangroves have long been taken for granted, and it's time we changed that. They provide ecosystem services that were valued at \$194,000 per hectare a year in a research 2014 [paper](#) published in *Global Environmental Change*.

Mangroves provide excellent nesting and breeding habitats for fish and shellfish, migratory birds and sea turtles, underlining their importance to coastal fishing communities. An estimated 80% of the global fish catch relies on mangrove forests either directly or indirectly, a [2008](#) paper in the *Journal of Sea Research* claims.

It is also often forgotten that mangroves form the first line of defence for coastal communities. After the December 2004 tsunami, there was a slew of global research on methods to devise some protection from such natural disasters.

Several scientists and economists concluded that mangrove forests would be the best biological barriers to soften the blow caused by tsunamis and cyclones. They found that mangroves [stabilise shorelines](#) by slowing erosion and provide natural barriers protecting coastal communities from increased storm surges, flooding and hurricanes.

We must remember that over a fifth of India's population lives on the coast, and there are more than 20 big cities, including Mumbai, Chennai, Puducherry, Thiruvananthapuram, and Kochi, that are on the sea shore. These populations are clustered within 10 km of the coast. Robust mangrove forests can protect these areas, which are vulnerable both to sea level rise and to the more intense and frequent weather events caused by climate change.

Only in breach

Mangroves are also great [carbon](#) sinks. They isolate carbon at two to four times the rate of

tropical forests like the Amazon and store three to five times more carbon per equivalent area than tropical forests.

One of the major obstacles to the growth of mangroves is rapid and largely unregulated coastal development. Although India has framed laws to protect its coastline, they are honoured mostly in the breach. For instance, Mumbai has less than 45 sq.km. of mangrove forests left. This is all that remains after almost 70% was lost to land reclamation and other developmental projects. India has lost 40% of its mangrove area in the last century, mainly due to agriculture, aquaculture, tourism, urban development and overexploitation, researchers from the Indian Institute of Science [have found](#).

The [State of Forest Report 2017](#), released last month by the Forest Survey of India, says that the mangrove cover in the country is increasing only marginally in the past two decades and now covers some 4,921 sq.km. It is clear that much more needs to be done.

We must ensure that we are not found lacking in providing more effective governance and better ways to rehabilitate degraded mangroves. We must also build awareness among local communities if we are to conserve, protect and restore these invaluable ecosystems.

The writer is Managing Editor of IndiaClimateDialogue.net. Follow him on Twitter @scurve

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