

## Barun Roy: Lessons from Cyclone Aila

The Sunderbans have a more valuable role to play  
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The Sunderbans have a more valuable role to play than to merely sustain human populations and activities.

Cyclone Aila, which ripped through the *Sunderbans* in late May, has left in its wake questions that are more important than petty political bickering over relief and disaster-preparedness. Of course, relief and disaster management are the immediate challenges a government has to face

when a calamity strikes, but the bigger issue for deltas like the *Sunderbans* is not just better relief and rehabilitation but their very survival.

It's also not simply a matter of building a permanent network of coastal bankments and inland dikes. The *Sunderbans* is not the Netherlands. The *Zuiderzee* formula won't work here. The hydrology of the *Sunderbans* is immensely more complex, with huge rivers, immense flood plains, and the Bay of Bengal forming and re-forming it all the time. The challenge here is not to secure it for human activities, but to preserve and strengthen it as a natural buffer between invasions of nature and human habitations further inland.

So, before we decide to spend, as the West Bengal Government proposes to do, thousands of crores on building a coastal sea wall, among other things, we should sit down with national and international experts to determine the safe limit for human activities and interventions in places like the *Sunderbans*.

Much damage has already been done. In Bangladesh, indiscriminate human interventions have destabilised the ecosystem in its part of the *Sunderbans* to an alarming degree. So much of its groundwater is being pumped out that, in some areas, the land has been subsiding by almost 25 millimetres a year. Concrete dikes to protect farms and habitations from floods have prevented the formation of new silt layers and accelerated the subsidence process.

Silting is necessary to replace soil loss through subsidence and maintain a balance between ground and sea levels. The *Sunderbans* isn't traversed by giant rivers alone, but also by an intricate mesh of rivulets, creeks, canals, and estuaries. Together they form a drainage system that helps distribute river floods and sea surges over large areas, minimising their impact and enhancing soil rejuvenation. Interference in one part of the system is bound to affect the whole.

What has made the problem worse for Bangladesh is the indiscriminate growth of brackish-water shrimp aquaculture in its coastal areas. Vast acres of the delta have been swamped by the shrimp industry and some of the farms have been embedded in canals, creeks, and river beds. This, on the one hand, has led to massive inroads into mangrove forests and, on the other, made salinity more widespread, threatening crops and coastal biodiversity.

Uncontrolled human intervention is a serious problem facing all deltas. In some areas of the Mekong Delta in Vietnam, groundwater levels have dropped 12 to 15 metres. Can Tho City might lose its entire groundwater reserve by 2014. The Chao Phraya Delta in Thailand, on which Bangkok rests, experiences a net elevation loss of several centimetres a year.

Aiding, not obstructing, sediment-formation should, therefore, be at the heart of any attempt to rehabilitate the deltas, and that holds good for Indian *Sunderbans* as well. If sediment is prevented from accumulating by levees or dikes, the ground will sink, producing a relative rise of sea level. The delta land being relatively flat, this means larger losses of coastal land and greater losses of lives and property during natural calamities. About 300,000 people were killed by a killer typhoon in Bangladesh in 1970, while some 138,000 perished in 1991. In 1997, Typhoon Linda killed more than 3,000 in Vietnam, flattening villages, wiping out crops, and leaving tens of thousands of people homeless.

Scientists fear global climate change might bring on even greater disasters. Even a one metre rise in the sea level, they warn, could swallow up to 15 per cent to 20 per cent of Bangladesh's land area. The rise in sea-levels, relative to land, is the biggest worry for the Mekong Delta right now, and this should be our worry, too. That's why, more than building dikes and making them permanent, our goal should be to try and restore our lost mangrove forests, which are the first line of defence against floods and sea surges, ease up the sedimentation process, and accept the fact that there cannot be any permanent man-made protection against natural disasters in the deltas.

Of course, we have to vastly improve our systems and abilities to manage disasters and to distribute relief and financial help to afflicted people, but securing the deltas by any means for human activities is a wrong priority. The deltas are not normal land formations and have a more valuable role to play than to merely sustain human populations and activities. That role is linked with the global ecosystem, which sustains global environment, which sustains humans, and should never be interfered with. This is a basic premise and all our plans for the deltas must follow from it.

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