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## **EARTHLY MATTERS: Ecological tragedy**

I remember the first time I saw a dense mangrove forest (the few patches left around Karachi Boat Club don't really count!), it was just past dawn and I was half asleep on the boat that took us into Sonmiani Bay. Then as the sun rose, the bird song began and we found ourselves floating towards the thickest forest I have seen in my life.

I was fascinated – the roots of the trees stuck out of the mud flats and little crabs crawled onto the stems. The mangroves were flowering as well and the scent was reminiscent of a famous Japanese perfume (which I was told later is in fact, made from mangrove flowers!). These luscious forests, teeming with shrimps, crabs and fish and home to a wide range of birds, are highly threatened ecosystems in Pakistan today.

The Indus River delta once used to occupy an area of about 600,000 hectares, consisting of creeks, mud flats and thick mangrove forests stretching from Karachi to the Rann of Kutch. Today, the delta area has been reduced to only ten per cent of its original size. Experts say that due to the continuous degradation of the delta because of seawater intrusion and lack of freshwater in the Indus River below the Kotri Barrage, the delta is dying. Before the deterioration of the mangroves began, Pakistan was one of the largest mangrove countries in the world.

Now the Indus delta mangroves are under extreme pressure due to lack of fresh water, fuel wood and timber extraction, discharge of untreated effluents from industries, sewage from cities and towns near the river and over grazing.

The Indus delta consists of several creeks, including those located in Keti Bunder, a small fishing town located in Thatta district. It is said that in the Keti Bunder area, much of the mangrove forest cover has been lost. The remaining forests have been declared protected forests and Keti Bunder is a recognised wildlife sanctuary, due to its location on the Indus Flyway, which is a globally recognised flyover for migratory birds from Siberia. But no one, it seems, can stop the

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relentless seawater from coming in and destroying the mangrove ecosystem.

"Two things can be done – the government can make sure that at least 10 MAF (million acres feet) of water is released below the Kotri Barrage which is in keeping with the 1991 Indus water accords and secondly, a temporary protection wall can be built by the government to protect the remaining mangrove forest in the area from seawater," says Zahid Jalbani, who works for WWF-Pakistan in Keti Bunder and is currently mobilising the local community to take charge of their natural resources.

Keti Bunder was in the news recently when a mysterious tidal wave silently swept into the town and flooded several villages in the nearby creeks. "It was sudden and completely unexpected. No doubt, it was because of global climate change and the lack of fresh water in the delta," explains Zahid.

Keti Bunder town once used to be a hub of fishing activity but it is now a poverty-stricken settlement spread over 35 acres and surrounded by seawater. Hajamro and Chann creeks which are shallow water channels with small settlements are part of the WWF programme site. In this area, dense mangroves cover 2,631 hectares, medium mangroves cover about 1,996 hectares and sparse mangroves cover 3,588 hectares. The Chann area is particularly vulnerable and is losing mangrove cover on a daily basis due to seawater intrusion and grazing of camels owned by the local population.

The total population of Keti Bunder town and adjacent creeks is about 12,000 only. There has been a substantial migration to Karachi and other areas in recent years. I once took a boat ride near the town and a colleague of mine remarked, "This is an ecological tragedy!". All around us, there was little vegetative cover and we could even see sand dunes formation. Not surprisingly, the town and nearby creeks hardly have any freshwater to drink. The WWF project, which is part of the larger Indus for All programme, has helped the local community to form community-based organisations to address their problems. One CBO is running a water tanker boat which distributes 4000 litres of water to each village in the area twice a month. The project has also helped install windmills which generate electricity (for light bulbs) for around 25 households each.

The fishermen of the area now catch seawater fish and shrimp. The fish catch is sold directly to Karachi. The fishermen complain that their catch is now down to 70-80% of their catch a few years ago. Since mangroves are rich breeding areas for fish and shrimp, WWF is keen to plant new mangroves and regenerate the forests to help the fishermen.

However, natural regeneration and plantation of mangrove saplings is possible only if the delta receives at least ten per cent of the basin flows; i.e., around 14 MAF of freshwater uniformly released for 120 days. In four out of five years, this volume of freshwater was not available. In dry years, such as the 2000-2003 period, the average availability of water was as low as 2.5 MAF! This flow is also polluted with a variety of industrial effluents, sewage and solid waste coming from Karachi.

Already the Indus has stopped meeting the Arabian Sea completely. Experts say that the sea has intruded 54km upstream along the main course of the Indus, destroying thousands of hectares of fertile land, contaminating underground water channels and killing off the mangrove forests.

These problems are bound to increase in the coming years, unless the federal government insists upon releasing adequate freshwater below the Kotri Barrage. But many engineers in the country still feel that any freshwater that runs into the sea is being wasted! I wish they'd spare a thought for those poor communities in the delta whose lives are being



destroyed by the lack of freshwater and are powerless to do anything about it. — *Rina Saeed Khan* 

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