

# Miracle at Keti Bunder

**Rina Saeed Khan** *narrates how an ecological graveyard is showing signs of life*

**T**he villagers were fast asleep when the sea-water suddenly rose up and a high tide silently flooded their homes. These people are amongst the poorest of the poor in Pakistan, living in wooden shacks on the mud flats of the fan-shaped Indus Delta. They are completely dependent upon fishing for their survival, and this is where the Indus River meets the Arabian Sea. "It was sudden and completely unexpected. No doubt it was because of the global climate change and the lack of fresh water in the delta," explained Zahid Jalbani, who is the Site Manager for the Indus for All Programme, and is currently mobilizing the local community to take charge of their natural resources.

Journalists have been invited to visit the area and write about the ecological damage that is going on as sea-water intrudes into the delta, destroying thousands of hectares of fertile land and contaminating underground water channels. "Two things can be done – the government can make sure that at least 10 MAF (million acre feet) of water are released below the Kotri Barrage (the last barrage on the Indus River), which is in keeping with the 1991 Indus Water Accords, and secondly, rehabilitate the degraded mangrove forests in order to minimize the intrusion from the sea," he added. For the people of the delta, climate change is real, it is happening and its consequences are devastating.

According to a recent study done by the Agricultural Development Bank, "impacts on coastal processes and river deltas are a specific concern in Pakistan... Climate change will increase vulnerabilities on the coast and delta area; sea level rise will result in inundation, increased storm surges, drowning of coastal marshes and wetlands, erosion, flooding and increased salinity. Coastal areas may suffer from increased tropical storm frequency and strength. Over 50,000 people may be displaced from Pakistan's coastal deltas." It is not just a dire prediction – it is grim reality.

Already, due to declining levels of fresh water in the Indus River (in the future, climate change will adversely affect river flows adversely as well), the sea has intruded 54 km upstream along the main course of the Indus River. The Indus Delta once used to be home to thick mangrove forests stretching from Karachi to the Rann of Kutch. Today, only some pockets of forest remain. Mangroves



Fishermen of Keti Bunder

need a combination of fresh water and sea water to flourish.

Before the deterioration of the mangroves began, Pakistan was one of the largest mangrove countries in the world; these forests provided rich breeding grounds for fish and shrimp, in addition to protecting the coast from storms and tsunamis. Now, the remaining mangroves are under extreme pressure due to continuous sea water intrusion, lack of fresh water in the delta, pollution, cutting of wood for fuel and grazing by camels.

The Indus Delta consists of several creeks, including those located in Keti Bunder, a small fishing town located in Thatta district. This area used to contain one of the largest tracts of arid zone mangrove forests in the 1980s. Keti Bunder itself was once a prosperous town. The local people used to grow red rice, bananas, coconuts and melons – now their agricultural lands have either been swept away by the sea or spoilt by waterlogging and salinity. Eight species of mangroves used to grow in the area. Only three species have survived: *Avicennia marina*, *Aegiceras corniculata* and *Rhizophora mucronata*. The gradual decrease in fresh water and an increase in saline water have seriously constrained mangrove growth.

The Keti Bunder Union Council consists of forty-two settlements, of which twenty-eight have already been engulfed by the intruding sea. There are four major creeks in the area: Chann, Hajamro, Khobar and Kangri,



A new mangrove plantation

or Turchan. Today, the total population of Keti Bunder town and the adjacent creeks is about 12,000. There has been a substantial migration to Karachi in recent years, where the local people end up living in the city's vast slums. Access to education in the area is very low, with 90% of the local population illiterate.

When I first visited Keti Bunder town five years ago, there was very little vegetative cover around the ramshackle town overlooking one of the bigger creeks. According to a local resident, "All this was on the banks of the old river. Now it is the shoreline of the sea – and it's washing everything away." The local people have to purchase drinking water from water tankers that came in from other towns. Hence, the cost of living is quite high.

We had come to visit the surviving mangrove forests of Keti Bunder, which are categorized as Protected Forests. The land, water lakes and mud flats have been named a Wildlife Sanctuary by the government. Hajamro and Chann Creeks, water channels with small settlements, are part of WWF-

Pakistan's Indus for All Programme site. The Chann area is particularly vulnerable and is losing mangrove cover on a daily basis, due to intense wave action by the advancing sea. The mud flats in this creek are eroding at a rate of fourteen metres per month.

I still remember my boat ride along the creek near Keti Bunder town. There was not a spot of greenery – just the relentless sea-water, the gulls above us and bare mud flats. We could even see sand dune formation on the banks of the creek. We all agreed it was an ecological cemetery, and the grinding poverty and despair of the local people living on the mud flats overwhelmed us. "There is no fresh water, how are we going to survive?" they asked us. "They must release more water below the Kotri Barrage". The Indus River supports one of the world's largest irrigation canal systems, which sustains millions of people in the upper area of the Indus basin, but at the expense of those living downstream in the delta.

These people were living without electricity or piped water, in small wooden huts,

**I still remember my boat ride five years ago along the creek near Keti Bunder town. Not a spot of greenery-just the relentless sea water, the gulls and bare mud flats - an ecological cemetery**



Community-installed wind turbine in Keti Bunder



Mangroves re-emerging in the creeks

# 29 environment

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dependent on marine fishing for their livelihood. WWF-Pakistan was working in the area (they had an office in Keti Bunder town), and I for one was skeptical about their chances of success, particularly when it came to their plans for the rehabilitation of the mangrove forests. How could anything survive here much longer, was my parting thought.

What a surprise, then, to re-visit the area this year, just before the scorching heat set in, and discover that the work done by WWF-Pakistan has actually transformed the lives of the people living in Keti Bunder. On this year's boat ride, we noted new plantations of mangroves in and around the villages in the creeks – some right next to the wooden homes of the villagers. Where there was once nothing but mud, we saw mangrove saplings re-emerging. (They have planted the more salt-tolerant mangrove species, *Avicennia marina*). We noted wind turbines generating electricity, and water tanks in most of the villages. Above all, the people looked happier and healthier. "We have cold storage facilities now and we can store our fish and it won't get spoilt. We have drinking water and the wind turbines are good because they give us free electricity," they told us as we toured one of the villages in the Hajamro Creek.

WWF-Pakistan's Indus for All Programme is currently funded by the Royal Netherlands Embassy; one of its main objectives is to ensure better natural resource management in the Indus Delta, which will contribute to improved livelihoods and sustainable development. Hajamro and Chann creeks are part of the Indus for All Programme's priority site in Keti Bunder. After the last cyclone hit the area in June 2007 (called Yemyin), several rehabilitation interventions were carried out by the Programme: a boat water tanker was given to the community; fixed potable water tanks were installed in various locations; and thirty thatched huts were especially designed and built for the local communities (priority given to widows and orphans). The Programme also repaired around twenty damaged boats belonging to the fishermen. Perhaps most importantly, the Programme has helped the local community to form five community-based organisations to address their own problems.

A CBO based in Keti Bunder town is now running the water tanker boat service, which twice a month distributes four thousand litres of drinking water to each village in the area. The water is brought from a nearby canal and then stored in Keti Bunder town, from where the boat fills up and then makes its journey into the creeks. Each community pays for the water (saving on transportation costs), and the women of the village oversee its distribution in a fair manner. The Programme has also helped install solar energy units in schools and mosques, and set up five wind turbines that generate enough electricity (for energy saver bulbs) for around



**Distributing water in the villages**

twenty to twenty-five households each, in villages where electricity is not available. Now there is increased economic activity in the night, such as the grading of shrimp, and women can do their chores more easily. The women can also make their mats at night, and there are more social gatherings in the evenings.

According to one resident of Hajamro Creek, "The wind turbines have really improved our lives. We are saving on the cost of the expensive kerosene oil which we used before the light bulbs, and other villagers now want these wind turbines in their homes as well." The CBOs ensure the maintenance of the windmills, charging Rs 50 per month from each household as maintenance cost. Approximately a hundred households have been provided with electricity through the wind turbines.

The CBOs have also been sensitized about the importance of protecting the mangroves by controlling cutting and grazing. Local festivals have been organized by the Programme in which theatre has been used to teach people about the importance of protecting the mangroves. Even the religious leaders of the area have been mobilized to give sermons on nature conservation. The local community is currently involved in planting yet more mangroves on mud flats in the creeks. The Programme has also held a resource users workshop for all the CBOs to give them proper trainings.

In a nursery located in the garden of their

site office, the project staff of the Indus for All Programme is experimenting with growing bio-fuels like Castor and Jatropa. These crops can grow easily in dry, arid conditions like those of Keti Bunder, and the project staff hopes to introduce these crops in the local agricultural economy, since they will become important when the demand for bio-fuel goes up in Pakistan. With most countries developing alternate fuels, this is a timely project that can easily be replicated on a larger scale. A

significant area of degraded land can be brought back into production by these crops.

In this coastal area, climate change is a harsh reality that is affecting the communities directly as of today. With the help of WWF-Pakistan, the people of Keti Bunder are already adapting to climate change, giving not only themselves, but others in the delta area hope of a better future. ■

*Rina Saeed Khan is freelance journalist*

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**Destroyed mangroves**

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