



# FRIENDS OF INDUS FORUM

## Position Paper on Manchar Lake





## Summary

Manchar Lake is one of the largest freshwater natural lakes in Asia. It is located in the eastern foothills of the Khirthar Range, about 18 km west of the town of Sehwan, and is spread over an area of 200 sq. km. The Lake was once renowned for its beauty and the large populations of migratory birds and wild fowl. It was also a rich source of fisheries, and provided livelihood to more than 10,000 households of fisher folk living on 2,000 residential boats. Today it stands as a severely threatened wetland, dying from pollution, toxic effluents and mismanagement. What has caused this gem of nature to spoil?

This position paper developed by the Friends of Indus Forum, presents the major challenges being faced by Manchar Lake and the impact on the environment and well-being of resident communities. The paper also provides immediate, short term and long term recommendations at local and policy level to improve the situation of this vital wetland.

## 1. Background

Wetlands are complex ecosystems occupying the interface between land and water. They are important habitats for wildlife, especially waterfowl. Manchar Lake is classified as an unprotected wetland located on the Indus Flyway. Manchar Lake was once a principal feeding and resting ground for birds migrating from Central Asia to the warmer south during the winters. In 1988 a total of fifty thousand birds representing 102 species of migratory and resident birds were recorded at Manchar. The Lake is also home to 29 species of aquatic plants, 11 tree species and 17 varieties of crops.

Manchar Lake occupies the extreme southern portion of the lowland formed by the dipping of the Kirthar mountain range and the high alluvial bed of the River Indus. Its surface area typically varies from about 19,000 acres in the dry months to 63,000 acres in the rainy season. In the monsoon season, the lake expands to three times its normal size.<sup>1</sup>

Fishing is the primary source of livelihood for communities dependent upon Manchar Lake. These communities are known as the Mohannas. A number of these fishers live on boats, while others reside in nearby villages. In the past, fishers would bring their daily catch to landing sites at Dansiter and Gharikino near Bubak. The fish catch was transported from the landing sites to Bubak and Bhan railway stations on bullock carts. It was then sold in Punjab, Balochistan and other cities of Sindh. In 1944 about 2,304 metric tons of fish catch was recorded. In addition to fishing, a number of resident communities practice agriculture albeit on a small scale.

The current population of Manchar Lake is estimated to be around 100,000. However, over the past few years, outward migration has intensified. The main reason for this phenomenon is the deteriorating quantity of fish catch and diminishing opportunities for agriculture and other livelihoods.<sup>2</sup> According to a survey conducted in 1930, there existed about 200 different species of fish in the Lake. Today fourteen fish species have become extinct and several others are under severe threat of extinction.

<sup>1</sup> Manchar Lake; Saving Nature, Overcoming Poverty (Sindh Education Foundation, 1999)

<sup>2</sup> Ibid

## 2. The Pollution of Manchar Lake

Manchar Lake's water supply is dependent upon two major sources i.e. Indus River and Hill Torrents from Kirthar hills. Whereas, effluents through the Main Nara Valley (MNV) Drain is the major source of pollution. Over the last two decades the fresh water inflow to the lake has declined significantly relative to the saline and toxic effluents discharged into it.

Historically Manchar Lake's pollution concerns go back to 1921 when the MNV Drain, which was originally designed as an inundation canal, was remodeled to transport raw sewage from the towns of upper Sindh and parts of Punjab. The remodeled MNV Drain became the only source of drainage along the right bank of Sukkur Barrage.<sup>3</sup>

During the implementation of the Right Bank Outfall Drain (RBOD) project, the MNV Drain was further widened and remodeled to drain the saline water pumped by the tube wells of the Salinity Control and Reclamation Project (SCARP) and the effluent of industries in District Dadu.<sup>4</sup> This development exacerbated the toxic content of the effluents being drained into the Lake. Meanwhile, the construction of dams, for water storage and power generation, and diversions upstream, for agricultural purposes and use by industries, on the River Indus led to water shortages downstream. This in turn reduced the amount of freshwater flowing into Manchar Lake. At present, the waters of Manchar Lake boast high levels of toxicity and salinity, which have had a ruinous effect on the Lake's natural habitat and biodiversity.

<sup>3</sup> Ibid

<sup>4</sup> Ibid

## 3. The Lake's Toxicity and Its Impact on the Environment and Well-Being of Resident Communities



Chemical tests conducted on water samples collected from Manchar Lake show that the salinity level has reached 4,000 PPM (parts per million) while the desirable limit is 500 PPM. Such high levels of salinity have a deleterious impact on the nutrient content of the Lake making it difficult to sustain healthy natural habitats. Surveys have confirmed that the fish catch quota (2300 tons per annum) documented in 1944 has declined to just over 400 tons per annum. Manchar Lake, no longer serves as a feeding and resting ground for migratory birds. The tests also indicate that the concentration of toxic substances in Manchar Lake is more than 8,000 PPM as opposed to the safe human consumable level of 800 PPM.<sup>5</sup> This high toxicity level poses a serious threat to the health and well-being of Manchar's resident communities who utilize water from the lake for their household needs.

The environmental degradation of Manchar Lake has had a significant economic impact on the livelihoods of the local communities. The dwindling fish catch is inadequate to provide a satisfactory source of earning and today the average monthly household income in the area ranges from Rs 1,000 to Rs 3,000 only.<sup>6</sup> In order to increase fish catch local fishers have resorted to unsustainable and environmentally harmful fishing practices such as the use of fishing nets made from synthetic fiber and the use of calcium carbonate mixed with food grains etc. This has contributed to the depletion of fish stocks.

Civic infrastructure and facilities in sectors such as health, water and sanitation, housing, education etc. are severely lacking. The local population show a widespread prevalence of tuberculosis, anemia, malnutrition, gastroenteritis, skin infections and water borne diseases. It is estimated that about eighty percent of women and children suffer from at least one of the mentioned illnesses. Declining income generation opportunities and rising incidence of illness have intensified the trend of seasonal out-migration and permanent relocation.<sup>7</sup>

<sup>5</sup> Ibid

<sup>6</sup> Ibid

<sup>7</sup> Ibid

**Total Dissolved Salts (TDS) at selected locations  
[Peak Values]**

Year	Shah Hassan	Deep Water	RD-25 Containing Bank
1994	1,660	1,468	1,620
1995	2,644	3,312	3,324
1996	3,644	2,528	1,600
1997	6,068	4,868	6,832
1998	8,480	3,820	5,640
1999	5,020	4,620	10,436
2000	9,116	6,972	12,308

Source: Nizam-ud-Din Nizamani; Degradation of Manchar Lake; A Case of Human Disaster – Shirkat Gah Publication 2008

## 4. Recommendation

The problems affecting Manchar Lake need to be tackled at multiple levels:

### Immediate on-ground actions

- Ensure a regular supply of fresh water from the River Indus to Manchar Lake in order to maintain a healthy ecological balance. A separate feeder from the River Indus to Manchar Lake should be designed and the regular flow of fresh water to the Lake must be ensured, alternatively the existing feeders should be revived.
- The Lake bed should be de-silted.
- The fisher community should have access to a functional solid waste disposal system. This will reduce the pollution of Lake Water.
- Infrastructure for disposing solid waste and waste water treatment plants should be instituted. Providing access to potable water is imperative. National Environmental Quality Standards and corresponding environmental laws and standards must be strictly enforced when draining effluence in the Lake. To prevent fish seed and stock from escaping Manchar Lake mesh nets should be installed at the points where the MNV Drain, Aral Wah and Danaster Wah discharge into the Manchar Lake.
- The existing carp fish hatchery at Bubak should be reactivated.
- The strict enforcement of the Sindh Wildlife ordinance 1972 must be ensured.

### Short and mid-term on-ground interventions

- Alternative effluence draining and disposal options should be explored and the current dumping of effluents into the lake must cease.
- A detailed and multi-sectoral survey of the area should be conducted to assess the problems affecting the area and its residents. The results of this survey should be used to establish priority actions to rehabilitate Manchar Lake and resident communities.
- A Management Plan for Manchar Lake should be prepared with the participation of local communities and experts. The plan should recognize the rights of local communities over the Lake's natural resources and should include a long-term conservation and sustainable use plan for the Lake and its resources and alternative income generation options.
- Alternative income generation opportunities and micro-credit facilities also need to be provided to inhabitants who have lost their livelihoods as a result of the environmental degradation of Manchar. In this regard tourist villages or resorts with good facilities may be established at village Bund Manchar, Shaikh Dhaman and Shah Hassan Support for purifying drinking water and for sanitation infrastructure is imperative.

### Medium term policy interventions

- Given that Manchar Lake expands and contracts seasonally, a review of land rights is needed. This review should include an assessment of fisher rights and the rights of communities living on the banks of Manchar Lake.
- A Manchar Lake Development Authority should be established with representation of local Mohanna (fishermen), NGOs and relevant government departments to implement the proposed 'Management Plan for Manchar Lake.
- Controlling the quantum of fishing to preserve the ecological balance of the Lake, limiting effluents, and controlling local waste disposal are strategic actions at the district level which will help advance provincial-level policy changes.

### Long term policy interventions

- In order to advance forward looking policies that will help rehabilitate and revitalize Manchar Lake, the Government of Sindh must proactively negotiate with the Provincial and Federal Departments dealing with the National Drainage Program (NDP) and seek alternatives for the Right Bank Outfall Drain (RBOD), of which the MNV Drain is one component.
- The Environmental Protection Agency and the Sindh Environmental Protection Agency in close collaboration with the government must actively and stringently enforce National Environmental Quality Standards.
- Alternative economically viable options must be considered to divert the disposal of waste and effluence away from Manchar Lake. This process is essential to halt the continuing degradation of Manchar Lake.



## Impact of 2010 floods on Manchar Lake

DADU: The contaminated water of Manchar Lake has turned sweet for the first time in 15 years. The Lake, spreading over 270 square kilometres and straddling the talukas of Sehwan Sharif and Johi, has been seeing the bounty of fresh water from Indus after the Tori dyke developed a breach on Aug 1.

A large number of fishermen who had migrated to other parts of the country have started returning home, raising hopes that receding of water to 114 RL will result in a rich catch of fish.

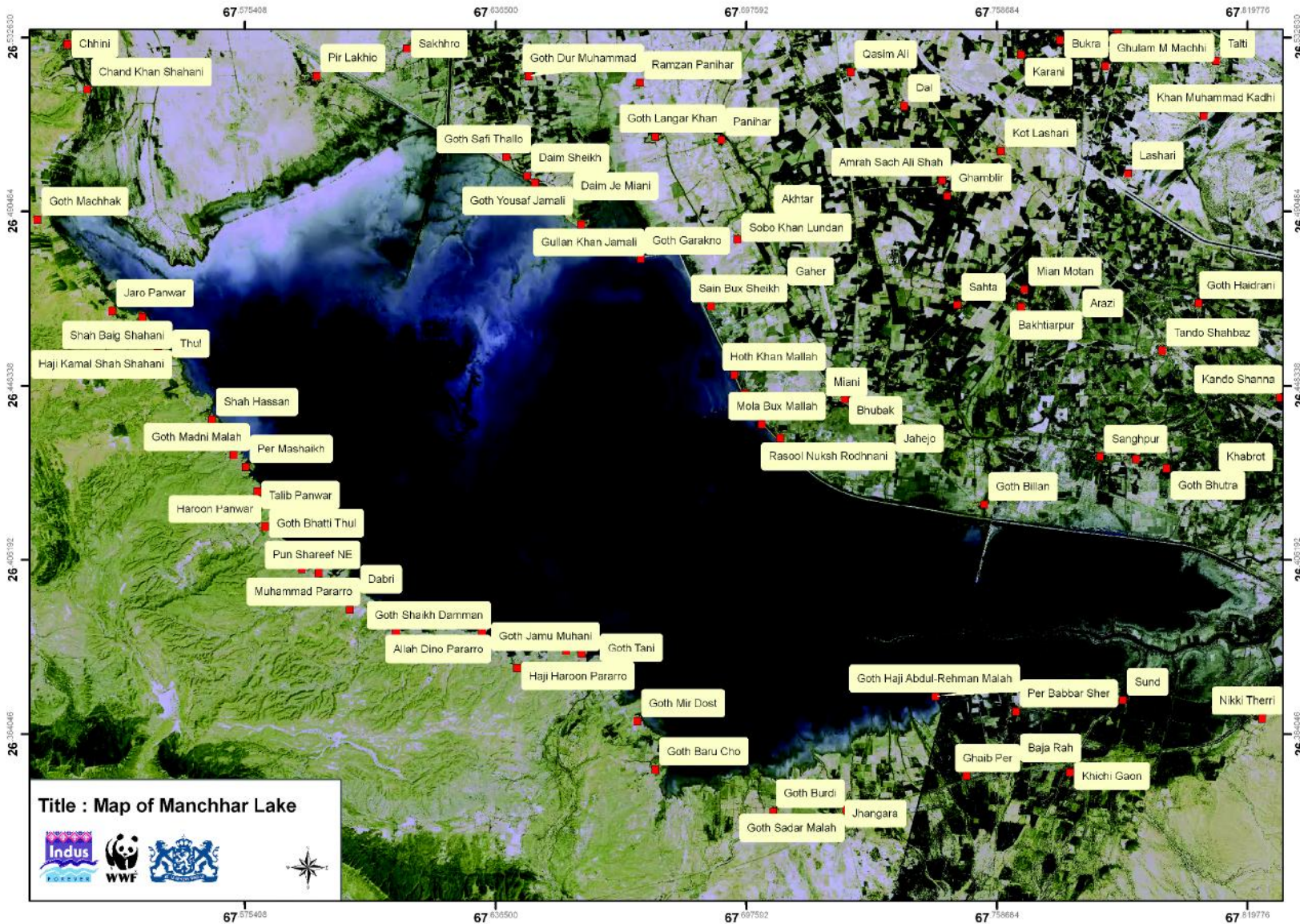
However local fishermen and water experts fear that if the breaches in the embankment of Manchar Lake are not plugged, the fresh and sweet water will soon vanish.

Nabi Bux Mallah, a fisherman, said he had migrated to Gawadar in 1995 after water in Manchar had become contaminated, leading to a depletion of fish stocks. He said he had now returned after hearing the good news about reappearance of fresh water.

Another fisherman, Maula Bux Mallah told Daily Dawn that the level of flood water and Manchar Lake was equal in the historic town of Bubak and near the Sehwan airport.

According to the vice chairman of Pakistan Fisherfolk Forum, Ghulam Mustafa Mallah, the contaminated water had almost vanished, turning the lake into sweet water once again. He said that if the breaches were not plugged, fish and sweet water would flow into the Indus.

Source: <http://www.dawn.com/2010/10/13/>



## OUR VISION

The vision of The Friends of Indus Forum is:  
*"Ensuring prosperity for current and future generations in Indus Basin particularly lower riparian through coexistence and harmony with nature."*

## AIM

To address the multiple diverse threats to natural ecosystems in which the survival of the species is increasingly becoming difficult and in which people who depend on biodiversity and natural resources are pushed to poverty and despair.

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