

## Chotiari Wetlands Complex

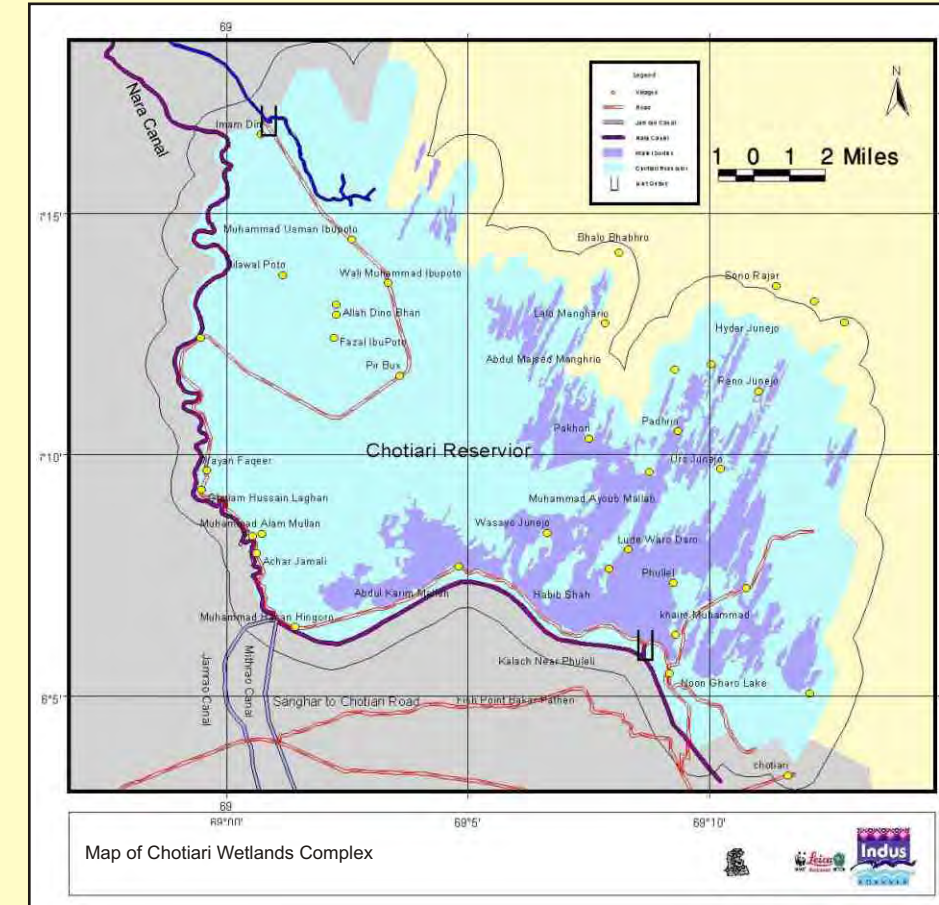
### Background

Historically, the Chotiari Wetland Complex was flanked by “Makhi Forest”, famous for rich reserves of quality honey, commercially valued wood and plants with rich medicinal value. In the backdrop of the “Hur Revolt” against the colonial rulers these woodlots were converted into agricultural crops for administrative reasons. Chotiari is rich in biodiversity and a junction complex of terrestrial and aquatic ecosystems of deep water, shallow marshes, riverine forest, agriculture land and sand dunes.

### Geographical Location

Chotiari Wetlands Complex is located in Sanghar District at a distance of about 30-35 km northeast of Sanghar Town. Chotiari Reservoir occupies an area of about 18,000 hectares. It has Thar Desert on one side and is bounded by sand dunes towards the north, east and south-east and the Nara Canal towards the west and south. Bunds and dykes surround the reservoir, the Northern Bund (19km long embankments), Western Bund (14km), the Southern Bund (16km) and South-Eastern Dykes (9km).

Chotiari reservoir's land area lies within several Dehs (Administrative Boundaries) viz. Makhi, Haranthari, Bakar, Akanvari, Khadvari, Mithario and, Dubi-II.



Map of Chotiari Wetlands Complex

### Our Mission

WWF - Pakistan aims to conserve nature and ecological processes by:

- Preserving genetic, species and ecosystem diversity
- Ensuring that the use of renewable natural resources is sustainable, both now and in the longer term
- Promoting actions to reduce pollution and the wasteful exploitation and consumption of resources and energy

### Vision of the Indus Ecoregion Programme

“Mankind coexists with nature in complete harmony and biodiversity flourishes in its respective habitat”

### Indus For All Programme, WWF - Pakistan

#### Programme Management Unit (PMU)

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#### Programme Implementation Units (PIU)

##### Chotiari Wetlands Complex

House # 129/2, Housing Society,  
Near Government Boys High School,  
Nawabshah Road, District Sanghar, Sindh.  
Tel: 0235-542837, Fax: 0235-542791

##### Keti Bunder

Keti Bunder Town, P.O. Keti Bunder  
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District Thatta, Sindh.  
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##### Keenjhar Lake

House # B/112,  
Hashimabad Society Makli,  
District Thatta, Sindh.  
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##### Pai Forest

House # A-3, M.U.C.E.T Employees  
Co-operative Housing Society,  
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Tel: 0244-366364, Fax: 0244-282496



A complex of Terrestrial and Aquatic Ecosystems

## Chotiari Wetlands Complex

# Natural Resources

# Livelihoods and Conservation Issues

## Common Birds

Common name	Scientific name
Black Partridge	<i>Francolinus francolinus</i>
Cattle Egret	<i>Bubulcus ibis</i>
Cetti's warbler	<i>Cettia cetti</i>
Common Coot	<i>Fulica atra</i>
Common Teal	<i>Anas crecca</i>
Crow Pheasant	<i>Centropus sinensis</i>
Eurasian Kingfisher	<i>Alcedo atthis</i>
Grey Partridge	<i>Francolinus Pondicerianus</i>
Great Cormorant	<i>Phalacrocorax carbo</i>
Large Egret	<i>Egretta alba</i>
Little Cormorant	<i>Phalacrocorax niger</i>
Little Egret	<i>Egretta garzetta</i>
Mallard	<i>Anas platyrhynchos</i>
Pond Heron	<i>Ardeola grayii</i>
Pheasant tailed Jacana	<i>Hydrophasianus chirurgus</i>

## Common Plants

Local Name	Plant species
Aak	<i>Calotropis procera</i>
Babur	<i>Acacia nilotica</i>
Devi	<i>Prosopis juliflora</i>
Jaar, khabar	<i>Salvadora oleoides</i>
Jaar, khabar	<i>Salvadora persica</i>
Kandi	<i>Prosopis cineraria</i>
Kano	<i>Saccharum benghalense</i>
Kano	<i>Saccharum spontaneum</i>
Kirar	<i>Capparis decidua</i>
Lai	<i>Tamarix dioica</i>
Pan	<i>Typha spp.</i>
Talhi	<i>Dalbergia sissoo</i>

The Chotiari Wetlands Complex can be considered a biodiversity hotspot due to the availability of diverse habitats and relatively low anthropogenic disturbance. Out of the four sites of Indus For All Programme, it is perhaps the richest in biological diversity.

## Fisheries

Chotiari produces fish weighing over 550 tones per year. About 60 species of fresh water fish have been recorded, which include Thailhi (*Catla catla*), Rohu (*Labeo rohita*), Dahi (*Labeo calbasu*), Seriah (*Labeo gonius*), Makhni (*Osteobrama catio*), Chidu (*Puntius sophore*), Popri (*Puntius ticto*), Khirmi (*Puntius sarana*), Dannahrah (*Chela labuca*), Suni (*Cirrhinus reba*) and Morakhi (*Cirrhinus mrigala*).

## Mammals

A variety of mammals are found in the area that include Hog deer, Chinkara, Desert cat, Fishing cat, Caracal, Smooth coated otter, Wild boar, Desert hare, Foxes, Jackal and Feral wild ass. Hog deer is an endangered species of the area. Degradation and shrinkage of habitat is one of the main reasons for decline in Hog deer population. Porcupines, Mice, Rats, Honey badgers, Bats, Mongoose and some other small mammal species are also found in the area.

## Birds

The area is very important for resident and migratory bird species. Over a 100 species of birds have been recorded from the area. The Sindh babbler is a rare species that has been reported in the area.

## Reptiles

A considerable population of Marsh crocodiles was recorded in Makhi area in 1997 and the Python, a vulnerable species, is also known to occur in the area. A variety of snakes and monitor lizards and geckos are also found in the area.

## Flora

Chotiari is rich in plant diversity. Majority of plant species of diverse ecosystems such as aquatic, riverine, desert and irrigated agriculture are represented over here. During an ecological assessment conducted by the Indus For All Programme in 2006 about 150 plant species were recorded from this complex.

There are about 60 villages/settlements in and around the reservoir comprising nearly 2350 households with an estimated population of 16,250. The economy of the area relies largely on fishing, agriculture, livestock and pastoral activity.

Women in the area are mostly involved in agriculture, livestock, fishing, handicraft (basket, reed blinds and mats weaving) and household activities (fuel wood collection, fetching of drinking water and cooking). Women's role in agriculture includes crop harvesting (cotton picking, wheat harvesting), crop cultivation, manual tillage operations and weeding from agriculture fields, crop threshing (wheat & rice) and, wheat and rice grinding for domestic use. They are also involved in processing and preservation of fish and other aquatic species for food and commercial purposes.

Overall, the socio-economic status of communities is well below the national average. The prevailing fishing lease system contributes to this state of affairs since a significant amount of fishing income goes to the contractor who pays meager wages to the fisher folk. Depletion of fish resources has caused significant impact upon the fish catch of the lake whereas the contractor maximizes profits on fishing contracts. Livestock, another major livelihood source, is under threat due to over-exploitation of rangelands which results in reduced livestock production and decreased incomes.

## Environmental Threats and Livelihood Issues

**Habitat Degradation:** Habitats of unique fauna and flora species suffered significant losses and became fragmented due to infrastructure development in the area intended to convert the lake complex to water storage reservoirs and cultivable land.

**Deforestation and Expansion of Agriculture:** There has been widespread deforestation on account of agricultural expansion and increasing demand of fuel wood in nearby Sanghar city. Indiscriminate use of pesticides on agricultural crops is also a threat to the flora and fauna of the area.

**Extinction of Species:** Two important species of the area, the Gavial and the Otter, are on the verge of extinction, if not already extinct.

**Loss of Rangelands:** The excessive storage of water in the reservoir has ruined the existing rangelands and resulted in loss of biodiversity and fodder for livestock which is one of the major livelihood sources of the area. The sand dunes within the reservoir area have been destabilized, diffused or submerged in water causing fishermen to migrate to safe and elevated areas elsewhere.

**Waterlogging and Salinity:** Water seepage towards western and southern areas has taken place due to increased water levels in the reservoir and subsequently adjoining fertile agricultural lands have become waterlogged and barren.

**Unsustainable Fishing Practices:** Unsustainable fishing practices are also common and, at the prevailing rate, will ultimately deplete fish stocks.

**Hunting Pressure:** Wildlife such as wildfowl, deer, and game birds are hunted indiscriminately and without any observance of laws.

**Settlement of Displaced Communities:** The recent rise of water levels has exacerbated to the existing displacement problem. Several settlements have submerged and some communities have yet to be resettled by authorities.

## Conservation Priorities

Indus For All Programme is endeavored to develop a conservation plan that will focus on recovery of endangered species, sustainable rangeland management, promotion of sustainable fishing practices, management and control of seepage, provision of alternate energy and reforestation for improvement of livelihoods.