

# CHAPTER: 9

## **9. Degradation of Wetland**

Wetlands or fragmented water bodies are generally treated as unhealthy and unproductive wasteland. The wetlands of different part of the world including Maldah are under several threats. This continuous threat induces the great loss of wetland almost every day. With degradation of wetlands balanced and healthy or mature ecosystems of those areas are also disappear, that greatly destroy the ecological balance of the region.

Civilizations round the world mostly developed around or on beside on water body or river basins. People, ancient and modern, generally utilize the river system properly as no civilization can survive without water. The wetlands are also used by the people in various other non traditional ways to fulfill some of their needs (Plate: XXII).

### **9.1 Result and Discussion**

#### **9.1.1. Wetland Degradation**

The wetlands of this district are the part of India's largest floodplains and its rate of loss is also quite high. About 70 – 80 percent of individual fresh water marshes and lakes in the Gangetic flood plains have been lost during the last five decades. At present, only 50 percent of India's wetlands remain somehow intact and their rate of degradation is 2 to 3% in every year. Indian mangrove areas have been halved almost from 700,000 hectares in 1987 to 453,000 hectares in 1995 (Ramachandra, 2001).

The different parameters regarding pressure on wetlands have been studied during the last four years.

### 9.1.1.1. Anthropogenic Pressure

#### I. Over population & Urbanization

The over population creates the increased requirement of food and place. A number of new villages are concentrated around or on catchments areas of the wetland, which greatly affects the existence wetland areas. The wetlands like *Konar*, *Hazar takia*, *Gour adhi dob*, *Boalia beels* are very rapidly affected under such threat in remote areas, where as few larger wetland of Maldah municipality area like *Gabgachi-chatral beel* complex and *Chatral beel (Mangalbari municipality)* are under such threats. Malanchapally, Netaji Park, Lake Garden are the new born colonies established in catchments area of *Gabgachi-Chatral beel* complex through the filling of the wetland areas to facilitate construction works.

#### II. Excessive Agricultural activity

The agriculture is most important occupation of the people of this region. They grown several crops and growing paddy is more profitable and most important one. Much of the wetland areas with shallow water are used for paddy cultivation. During different agricultural operations wetland areas and its biodiversity or ecosystems are badly affected.

##### a. Loss of stable Ecosystem or Biodiversity

For solving the ever increasing food problem, excessive agricultural activities are greatly escalating day by day in this region. This is a continuous process and causing rapidly conversion of wetlands into the agricultural lands. The stable vegetation and biodiversity of those wetlands are coming under regular disturbance due to such practices for several years. Farmers eradicate wild plants, before completing their life cycles, from the marshy areas to prepare the soil for paddy, jute and Makhana cultivation. This continuous process removes the wilderness of wetlands of this area.

##### b. Loss of water and soil quality

Agriculture is the most common for the people of this village dominated country. For to process maximum amount of crop production and to avoid the loss from diseases, various kind of easily available synthetic chemical fertilizer, pesticide, weedicide are applied to crop fields. These chemicals gradually pollute on poison the water and soil of wetlands. Except this the chemical runoff from several upland crop fields can also pollute the wetlands and that makes its water and soil unhealthy and makes the habitat unsuitable for living organisms. The poisonous and high nutrient content of water creates eutrophication and destroy the stable ecosystem and many other organisms of wetlands biota.

### III. Selective fish culture & over fishing

There are many wetlands those are given on lease to the fisherman's by local government for piscicultural activity. The regular selective fish cultures gradually disturb the natural and local species of fishes and animals fail to survive there for long time. The wetlands like *Sagardighi*, *Hazar takia*, *Sanak*, *Barbilla*, *Dhekul* and *Adh soi beels* are very much under such practice. During pisciculture various toxic chemicals are also applied as poison to kill the wild plants and other animals including wild fishes.

During post monsoon period when wetlands are drying, several wild fishes, snails, toads, insect, snakes etc. provide good food for migratory and resident birds. The local peoples including children catch those fishes by draining out the shallow water. Some such fishes are also sold in local markets.

There are few perennial wetlands like *Gabgachi-chatral beel* complex, *Babla beel* and *Amriti beel* which are used only for fishing and fish culture is never practiced there. During flood, several fishes are coming out from other cultured ponds and rivers and finally take shelter in these wetlands. So, throughout the year people fishing in those wetlands using traditional fishing equipments like small boats, small handy nets and sometimes a large net fitted on bamboo frame. Such uncontrolled fishing practice exerts much creates pressure on the wilderness of wetland ecosystem and make its biodiversity vulnerable.

### IV. Monoculture

Almost all the marshy wetland of *Tal* and *Diara* region are used for Makhana (*Euryale ferox*) cultivation for which people destroy other natural vegetation rapidly. In Maldah district more than 900 hectors of wetland areas are now used for Makhana cultivation. During its cultivation all 'weeds' have been removed from wetlands and chemical poison (herbicides) is applied to kill the wild fish because they eat the seedlings of Makhana. Perennial wetlands of *Barind* region are generally used for lotus cultivation. Few wetlands of *Tal* and *Barind* region are also used for the cultivation Paniphal (*Trapa bispinosa*). Such monoculture activities along with paddy and jute culture rapidly destroying the wilderness in wetlands of this region.

The natural wetland like *Madhaipur beel*, *Belatulli beel*, *Laxipur beel*, *Singsar beel* and the *beels* along with *Tangan* river valley are not used for such monoculture (except paddy cultivation) because these are completely dried up during summer. Only *Nayagram beel* of the district is noted as free from such activities.

## **V. Brick field**

Due to rapid urbanization several brick factories are established outside the town area, which are generally located nearest to or on wetland areas. For the making of bricks soil and water is taken from the wetlands. Except these, temperature of ground of those areas becomes increase due to regular burning of bricks. The increasing temperature interferes with the soil quality that directly affects the ecosystem of those areas. The present survey report shows that the ecosystem of wetlands like *Gabgachi-chatral beel* complex, *Laxipur beel* and *Chatra beels* of English bazaar division and *Konar beel*, *Chandrasahi*, *Boalia beel*, *Alihanda beels* of Chanchal sub-division are greatly suffering due to this reason.

## **VI. Poaching**

According to local people, the numbers of waterfowl in different wetlands are decreasing badly during the last few years. The main cause behind this is the very high rate of maximum poaching. The local people catch different migratory birds specially duck, stork and herons for food and sold in local market. They catch those birds by their fishing net or by firing gun. The fishermen catch the water birds at night and make their dinner tasty plates.

The maximum poaching is noted in wetlands of *Barind* region and some in *Diara* region where larger number of birds are found. The wetlands of *Tal* region are also good place for water birds, but poaching in this part is quite limited.

## **VII. Pollution**

Almost all the wetlands of this district are generally used for paddy cultivation throughout the year, except rainy season. The regular run off from agricultural land that situated on or near to wetland areas contains various types of toxic chemical components like fertilizer and pesticides and gradually makes the habitat poisonous. The additions of toxic materials increase much during monsoon months.

Few perennial wetlands of English bazaar, old Maldah, Chanchal, Harishchandrapur and Kaliachak are polluted by sanitary swage and garbage from urban areas. Those contain huge amount of degradable or non-degradable wastes and some run off coming from vehicle washing garages. A few wetlands and ephemeral water bodies along the NH 34 are being directly polluted by the waste water released for small industries. The river *Sat*, originated from river *Mahananda* and meets the *Madhaipur*

*beel* along with river *Tangan* is badly polluted with such influx for starch industries. The toxic chemical influxes cause the death of different wildlife in both the rivers and in adjoining wetlands.

The sewage from urban and rural areas is directly or indirectly released into the nearest water bodies or wetlands and rivers like *Mahananda*. The rate of such release is quite high as these are numerous urban areas. The *Lakshampur* and *Gabghachi-chatral beel* complex of English Bazaar block becomes dirty or used as dumping ground for the English bazaar municipality.

### **VIII. Creation of new Ponds and Roads**

Pisciculture is another important and profitable occupation of the people of the district. Many families directly or indirectly attached with this occupation. They generally culture fishes in different artificial private ponds and lakes and sometimes few deep water wetlands taken on lease from local government. But for last 2-3 year a new trend was seen, that the local people from near by villages dug few ponds within the wetland areas during dry season. The dug out soil helps to create a dam to isolate the ponds from main water body from main system. These practices can destroy the natural ecosystem of these wetlands. Survey during last two years observed such activities *Chatral-Bhatier beel*, *Boalia beel*, *Adh soi beel* and *Nayagram beel*. This random practice gradually converts the natural wetlands into a non-wetland or artificial pond that creates pressure on natural habitat and biodiversity of the wetland areas.

To reduce the distance between the villages the local people prepared new village roads with mud through different government projects Pradhan Mantri Gram Sadak Jojona. The roads generally separate the wetland areas into 2-3 parts. The road creation later on followed by the extension of human settlement on those areas which gradually reduces the wetland areas. The new ponds and roads followed by new settlement drastically modify the wetland areas into non wetland area, which causes the severe habitat fragmentation of such natural ecotonal zones.

### **IX. Loss of wild relatives**

The wetlands of Maldah district are the important genetic reservoirs of some wild relatives of plants. Among the wild relatives rice is very important because wild species like *Oryza rufipogon* and *Oryza nivara* are growing in some wetlands. *Rosa involucrata* is another important species which is the wild relatives of Rose is found in different wetland like *Barbill beel*, *Belatuli beel*, *Tilason beel*, *Madhaipur beel* etc. towards the boundary of the district.

## 9.1.1.2. Natural pressure

### I. Regular flooding

The district Maldah is situated on Gangetic flood plain and is a high flood prone area. Flood is quite common and regular, coming almost every year. Severe erosion of Ganga river on its left bank engulfs many villages of Manikchak, English bazaar and Kaliachak blocks. The areas like *Manikchak*, *Khaskhol* and *Panchanandapur* are severely affected. Regular flood sometimes degrade the water quality of wetlands. During flood wetlands nearest to Malda town are affected as the garbage of urban areas, sewage of starch factory, inorganic manure from godown etc. coming out with water and stored in the wetlands.

### II. Deposition of degraded plant parts

Local people informed that the wetlands of this region are very old and were much deeper in the past. The depths of all the wetlands are gradually reducing. One of the main causes of this is accumulation of huge biomass of aquatic weeds. The degraded part of aquatic weed (*Eichhornia crassipes*, *Monochoria hastata*, *Cyperus sp*, *Nymphaea sp* etc) and cultivated plants (*Euryale ferox*, *Trapa bispinosa*, *Nelumbo nucifera*) are deposited at the bottom of the wetlands and reduces the depth. Almost all the wetlands of *Tal* and *Diara* region lost their depth significantly. But, wetlands of *Tangan* valley of *Barind* region are not under such threat because these are not permanent waterlogged bodies.

### III. Rainwater runoff from upland areas

As wetlands are low laying areas, a huge amount of soil is deposited there during rainy season coming with the run away water from upland. The wetland of Barind region especially *Tangan* valley are losing their depth due to the upland soil runoff. The wetlands of *Tal* and *Diara* region are also under such threat but its rate is quite low.

The rain water also carries different chemicals, plastics, non-degradable products, burnt machine-oil etc. from the urban and populated areas. This polluted water directly affects the habitat and thereby biodiversity of wetland ecosystem.