

Changing Land use Pattern in Chatra Wetland of English Bazar Town: Rationale and Flaws

¹Shyamal Kumar Kar and ²Swades Pal

¹*Research Scholar, Deptt. of Geography, Visva-Bharati, Santiniketan, West Bengal, India*

²*Assistant Prof., University of Gour Banga, Malda, West Bengal, India
E-mail: shymalkarjha@gmail.com and swadeshpal82@yahoo.in*

Abstract

Chatra wetland is located at the north western outskirts of Malda town. This paper has highlighted the changing land use pattern of the wetland since 1971 to present. Urban encroachment toward the wetland area is the major vector of land use change at present. Government and local people are interested to turn the wetland into habitable land. This paper has also attempted to judge the rationale of wetland conversion.

Keywords: Land Use Pattern, Settlement Encroachment, Change Detection of Land Utilization

Introduction

Wetland is logically called 'biological supermarket', 'biodiversity pool', 'kidney of biospheric system', 'granary of resources' form the interface between terrestrial and aquatic systems and perform a number of important functions of ecological importance and socio-economic relevance.

West Bengal is a riverine state, therefore in connection with that the number of wetlands of different kinds are numerous. Total wetland areas of this state is 2,94,453,72ha. which is found among different forms like 2,76,201,90 ha. under impounded water area, 1,72,586,36ha. under river, 80,083,71ha. under canal, 41,781,65ha. under wetland (locally known as beel).

Malda district, the transition between northern hills and southern plains, is also characterized by numerous numbers of depressed and riverine wetlands. As per the number of water bodies and also its water area, the district comes second in West Bengal. The wetland census data of the Ministry of Environment and Forests, Govt. of India and IRS-1B- LISS data and as well as available topographical maps,

representing the district mentioned that the fairly the good portion of the district is occupied by 562 wetlands whose individual areas are about 2.25ha. The area of the 562 wetlands, scattered throughout Malda District is about 29383ha. Not only that Malda district has 9 big wetlands out of 33 big wetlands (covering more than 100 ha. each) of West Bengal (Govt. of India, 1990). According to Deptt. of State Fisheries, West Bengal out of total wetlands 9,580,60ha. is occupied by impounded water areas, 6,497,60ha., 2,511,42ha. and 4,551,42ha. is covered by river, canal and beel respectively. Chatra wetland is one of the vast wetlands is located at the north western outskirts of Malda town. Its total area is about 14.58sq.km. including the outskirts zones but true wetland area is near about 9.87 sq.km. Average depth of water during monsoon in this wetland is 2.5 m.

It is established facts that wetland has its multifarious usabilities both from ecological and economic point of view. But most of the wetlands are now under the threats of extinction. Agricultural invasion, urban encroachment, water pollution, eutrophication etc. are some burning problems which are haunting the long term ecological and economic feasibilities. Chatra wetland is called as the 'lung' of Malda town and performs some useful functions in the maintenance of overall balance of nature of this district (Chattaraj & Chattaraj, 2008). But continuous effort is going on to convert this wetland into only land draining out the stagnant water and elevating the land by different means. So, contradiction may rise about its ongoing process of conversion through urban encroachment.

Study Area

Malda district is a low-lying plain, through which flow a number of rivers. On the basis of topography and drainage pattern, the district can physiographically be divided into Barind region (eastern part of Mahanada) and Rarh (Western part of Mahananda). The Rarh region again is subdivided into (a) Tal Region in northern portion (1,32,761 hectare), (b) Diara in southern portion (1,12,186 hectare). Tal region is very famous for wetland. Climatically, this area is under the influence of subtropical monsoon flow. Average annual rainfall of this area is 1453.10mm. Maximum rainfall is happened during June to October. Hydrological conditions of the wetland are directly linked with meteorological dynamics.

Chatra wetland is a fragmented part of well known Bhatia wetland which is located in the western part of NH 34 and Rail way line. Administratively this wetland is under the ward 3 and 25. Most part of the wetland is strongly affected by dense water hyacinth.

As per its genesis is concerned, this wetland was started since 1971 when lofty railway line without adequate through passing system have constructed. Its catchment area is not totally closed because from western part one drainage line is entering into the wetland carrying sizeable amount of water from outside regions. But its outlet point is very narrow and quite elevated from the normal bed level of the wetland. Moreover, the extended outlet course which joins this wetland with River Mahananda, has also critically undergone into massive fragmentation and transformation. This condition is also resisting the general flow pattern of this wetland. In this aggregate

Watery Conditions with water hyacinth							3.90	26.74	1.36	9.32
Muddy Condition with Water Hyacinth			9.21	63.16			5.64	38.68	2.74	18.79
Shallow Water Wetland					3.28	22.53				
Moderately Deep Water Wetland					6.01	41.25				
Deep Water Without Water Hyacinth			5.37	36.84	5.28	36.22	1.47		1.42	9.73
Total	14.58	100	14.58	100	14.58	100	14.58	100	14.58	100

Phase IV: Govt. body has attempted to drain the water from the present wetland to return back the land property to the owners. Owners themselves have also been attempting to elevate the wetland bed heaping up the waste materials or soils, sand from outside. To accommodate human habitation, fast rate urban encroachment has been started and now almost 50% of the wetland area is being pirated for settlement construction. At the rate is persisting regarding wetland conversion, within next 5 years entire wetland will be turned into built up land.

Rain water and Municipal waste water are the Major Sources of wetland water.

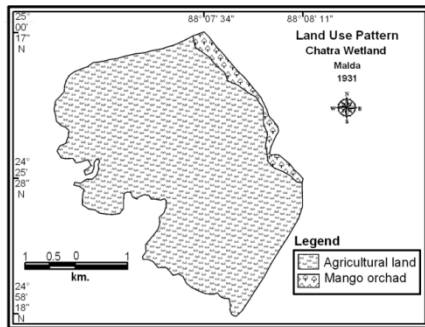


Figure 1

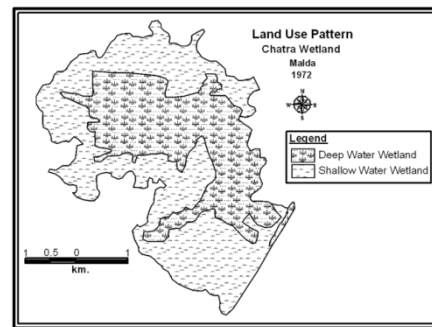


Figure 2

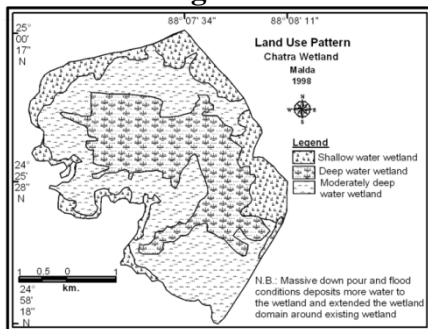


Figure 3

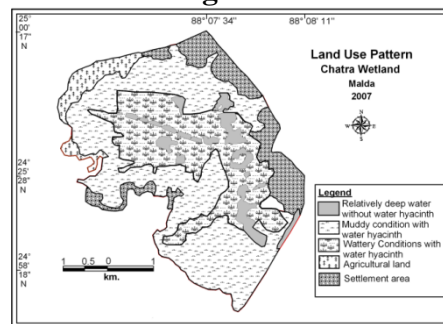


Figure 4

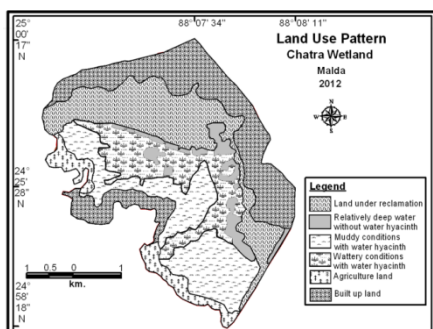


Figure 5

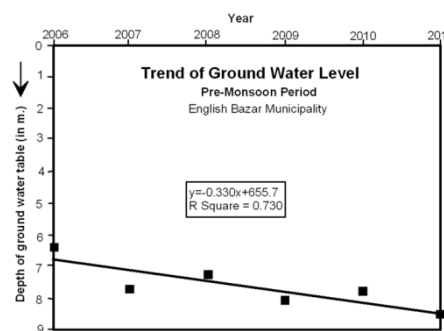


Figure 6

Ground Water Level Condition

Ground water crisis is one of the principal problems of entire India. In spite of having large number of wetland and rivers, this area is not also free from ground water crisis. Ground water table is steadily lowering down over time. In this condition, the importance of wetland can be felt. Wetland is called recharge machine.

Table 2: Ground Water Level Condition

Year	GWL	Year	GWL	Year	GWL
2006	6.45	2008	7.27	2010	7.8
2007	7.7	2009	8.13	2011	8.53

Source: SWID, Malda

Rationale of Wetland Transformation

Present rate of wetland piracy indicates its short longevity. Wetland can produce good economic remuneration and ecological feedback. So, including all if estimation of this Chatra wetland could be done its per hectare economic return would be more than Rs. 50,000/-. This wetland can be used for municipal waste management of Malda town, it can help to recharge ground water, can produce huge fresh fish, crab, and different aquatic vegetables, subside municipal carbon and other pollutants etc. It should also be mentioned that at present the situation of internal drainage of Malda town is vulnerable. So, massive monsoon rain of any year may bring water stagnation. If wetland would be conserved, it could hold a substantial volume of water and abate the flood intensity. This wetland could be used following the strategies of East Calcutta Wetland.

In other side of the coin, if it is converted into built up land population pressure of this district will be released to some extent. Land owner could return back their properties. The fact is that people have lost their agricultural land but when they are returning it back, they are ready to sale it to the promoters or those people are willing to buy it for built up purpose. The interim event of wetland formation between previous agricultural land and built up land, the valuation of land has multiplied several times

Conclusion

Now government and local people should take right decision about its future. When whole world is worried about the conservation of wetland, overwhelmed about its utilities, people should rethink about the ongoing processes of urban encroachment toward wetland and related other problems.

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