CHAPTER - II

STUDY AREA
CHAPTER - II

STUDY AREA

2.1 HPC paper mill

HPC group has four paper mills, two of which are units and two are subsidiary companies. HPC is the holding company for Hindustan Newsprint Ltd. (HNL) and Nagaland Pulp & Paper Company Ltd. (NPPC). Nagaon Paper Mill (NPM) and Cachar Paper Mill (CPM) function directly under HPC’s control and their performance is reflected in HPC’s operating results. Over a period of three decades, HPC has built up a total capacity of about 3.35 lakh tonnes of paper and newsprint.

The Nagaon Paper Mill, a unit of Hindustan Paper Corporation Limited situated at Kagajnagar in the Morigaon district of Assam, at the intersection of 92°4’ East longitude and 21°2’ North latitude, this is a public sector enterprise which was incorporated in 1970 to produce 100,000 MT annually of writing and printing paper and started commercial production from 1985. Nagaon Paper Mill is one among the oldest paper mill which uses 100 percent bamboo as raw material. It attained 100 percent of its installed capacity in 2000-01 and since then it has been showing continuous rise in production attaining 106.30 percent of its installed capacity in 2004-05. It has also been exporting paper to countries like Sri Lanka, Bangladesh, Egypt and Iran.

Nagaon Paper Mill, is situated on the Guwahati-Nagaon Road, (National Highway No 37) is in the Morigaon district of Assam. The Mill is located only 60 kms away from Guwahati, the nerve centre of the North-East.
2.2 Description of study area

Morigaon is situated in the Brahmaputra Valley of Assam, Morigaon district covers an area of 1,704 sq. km. It is the second smallest district in Assam. The main portion of the district is an alluvial plain, criss-crossed with numerous rivers and waterways and dotted with many beels (large bodies of water) and marshes. Sunaikuchi, Khulahat and Bura Mayong are the three Reserve forests in the district.

The area falls under the mesothermal, humid, sub-tropical belt and has an annual rainfall of about 1530.9 mm (annual average Rainfall 2006 – 2010; IMD) and temperature in winter varies from a maximum of 24.8° C to a minimum of 11.2° C while summer temperature varies from a maximum of 32.9° C to a minimum of 25.5° C. The annual average maximum temperature is 30.4° C and the minimum is 19.8° C.

Description of the non-industrialized site taken as control site:

Tolibar beel (26°27' N and 92°28' E) is located at Dhing, Nagaon district and is free from industrial pollution. It has an average elevation of 58 meters (190 feet) above msl. Dhing is a small town located at the North – West part of Nagaon district in the state of Assam, India. So far no small or large industry has been set up in this area and hence this site was taken as unpolluted water body, hereafter referred to as control site.

2.2.1. Beel receiving waste water of HPC Paper mill
A. Ellenga Beel at Belguri, Jagiroad

The water body is in the village area. Vegetable and paddy cultivation is done in its vicinity. There is luxuriant growth of water hyacinth. The beel is surrounded by forest area. Kapili River flows by the area. The beel is located at the intersection of 92°01' East longitude and 26°07' North Latitude and 195 meters above mean sea level.
B. Ellenga Beel System Pond, Jagiroad, Morigaon

This beel site is near HPC Nagaon Paper Mill outlet. Sampling site was selected on the other side of the bridge in the pond towards HPC Jagiroad. The pond is partially covered by water Hyacinth.

The Taranga beel is located near the Industrial unit, which is receiving the treated wastewater throughout the year from Hindustan Paper Corporation Ltd. The Taranga beel remains inundated during monsoon period, i.e. April to October from the river water of Kiling. In fact these area turns virtually into several confined water bodies during winter and the beel becomes partially dry. The waste water treatment processing unit of the paper mill is surrounded by vast areas of cultivated land where paddy is cultivated predominantly.

2.2.2. Agricultural land surrounding Paper Mill

The land in the villages is alluvial and there are numerous flora and fauna which have added to the ecological balance of the areas concerned. The river Brahmaputra is on the western side of Pokoria and Mayong mouzas and its tributaries such as Kiling, Kopili and Kolong crisscross all these mouzas. The contribution made by the people of these areas to the economic development of the district is praiseworthy. The eastern area of the district comprising Pokoria, Mayong, Monoha, etc., is known as the granary of the district as these places are mainly inhabited by cultivators and fishing communities. Also, the Pobitora Wildlife Sanctuary, known to have a dense population of the one-horned rhino, is situated under the Mayong mouza.

Besides agriculture and pisciculture, a few other notable revenue sources of the proposed subdivision are the Nagaon Paper Mill of the HPC Ltd, various trade and commercial activities in and around Jagiroad town are dairy farming, dry fish market, and reserve forests including the Sonaikuchi Hill Reserve and Kholahat Reserve Forest and numerous beels in the riverine areas. Keeping in mind all these factors like potential, resources and other factors, all sections of the people bring about an accelerated growth.
PLATE – 1. Photograph showing the study area – Taranga Beel, which receives treated waste water from HPC paper mill Jagiroad.

PLATE – 2. Photograph showing the Taranga Beel receiving the treated water from the lagoon.

PLATE – 3. Photograph showing the shallow Taranga beel due to siltation of suspended solids of the effluent.
PLATE – 4. Photograph showing the Taranga Beel during monsoon.


PLATE – 6. Aerial view of Tolibor beel (Unpolluted area).
PLATE – 7. Tolibor beel (Control area).
Figure 1 – Map of Morigaon District (Not as per Scale)

Figure 2 – Map showing study area near Jagiroad Paper Mill.