

Environmental Problems at the River Ports of the Brahmaputra, Assam: An Ecological Study

Diganta Kumar Phukan

Asst. Professor in Sociology, Jorhat College (Amal.), Jorhat-1, Assam, India

Abstract: A number of river ports are in Assam located at the banks of the river Brahmaputra and its tributaries which play an important role in transportation of people and many items, business, tourism and so on. But, many such ports are threatened by environmental problems such as riverbank erosion, siltation, hellish atmosphere etc. which affect the port areas.

Keywords: River ports, environment, ecology

1. Introduction

Since the period of unrecorded history, rivers are treated as lifeline in agriculture, economic, ecological as well as cultural life of mankind. In Assam, of India the river Brahmaputra and the Barak along with 48 major and 128 small rivers have been considered as the boon for the lakhs of people of the State. In this regard, the Brahmaputra, one of the largest rivers of the world has been contributing a lot. Besides, its tributaries like the Dibru, Disang, Dorika, Dikhow, Janji, Bhogdoi, Kakodunga, Dhansiri, Doiyang, Kolong, Kopili, Bhorolu, Sonai, Krishnai, Digaru, Kulchi, Dudhnoi, Jinjiram, Simen, Charikoria, Gai, Korha, Kumotia, Jiadhal, Subansiri, Kodom, Ranganadi, Dikrong, Pichala, Borgang, Jiaboroli, Puthimari, Borolia, Nuna, Pagladia, Burhadiya, Tihu, Kaldia, Pohumara, Manah, Beki, Champawati, Ai, Saralbhanga, Sonkush, Godadhar etc. are also helpful for agriculture, transportation, communication of goods, water etc. It would also be noteworthy that in transportation of passengers and goods many river ports have been opened in suitable places, especially the ports located at the banks of the Brahmaputra have been playing an integral role in transportation of passengers and goods like tea within and outside the State. Many river ports located at the river banks are the hot spots of the tourism and some are having potentiality to be spots of tourism. More importantly the ports are contributing to be rich of the cultural granary of the state of Assam, India.

Regarding the transportation and the river ports, Saikia & Das(2006) stated that from the very early times Assam's trade with the neighboring provinces was mainly carried by river transport, the main route to Bengal, Bihar and Orissa being the Brahmaputra and Ganges. In 1839, when the Assam Company was formed, it started its own fleet of country boats. In 1844, the river journey from Guwahati to Sadiya started by country boats. In 1847, the Streamer service was established in Brahmaputra between Calcutta and Guwahati of Assam, India.[1]

The important river ports located at the banks of the Brahmaputra and its tributaries are under two divisions viz., Guwahati and Dibrugarh. Under the Guwahati Division some of the major river ports are Guwahati, North Guwahati, Pandu, Amingaon, Bamundi, Nagarbera, Kachamari, Kurua, Sunsali, Silsaku, Rajaduar, Palashbari, Sualkuchi, Baghbor, Goalpara, Mukalmua, Bhagonmari, Chapormukh, Kachua,

Dhuburi, Fakirganj, Phulbari, Jaleswar, South Salmara, Medartary etc. The another division i.e. the Dibrugarh Division comprises Neamati, Kamalabari, Chinatoli, Borguri, Deasangmukh, Matmora, Aphala, Chikarighat, Jamuguri, Karatipar, Phulani, Salmara, Sadiya, Saikhowa, Bogibeel, Karengbali, Dibrugarh, Sonari, Badati, Dhunaguri, Guijan, Khabolu, Sissi, Kolghor etc. *Statistical Handbook, Assam, 2015* reported that during 2014-15 total passengers transported through these river ports were 135,41,292 and total revenue collected was Rs. 354,52,000.00 including revenues collected from the goods transported.[2] But, the river ports are threatened by environmental problems due to different causes for which the functions of the ports are hampered. This paper is aiming to explore the nature of environmental problems occurred in the port areas and their causes.

2. Methods

The study was based on both primary and secondary data. The primary data were collected through the visits in some river ports such as Neamatighat, Deasangmukh, Matmora, Dibrugarh etc. where the personal observation was fully highly done. Besides, some important information were collected from reliable sources. After collection of the data, the paper has been finally written.

3. Results

The results of the study are presented below.

3.1 Environmental Problems at the river ports:

The river ports, an integral part of transportation of passengers and goods attract people of the state and outsiders often visit the river port areas especially during winter season. Through many of such river ports travelers visits tourist spots like the Majuli, the largest river island of the world and full with cultural heritage, the Umananda Mandir, Kazironga and many more. Besides, many picnic parties enjoy their natural beauties each and every year. But, in spite of such contributions, the ports are threatened by several problems in which the environmental problems are more. The following is a brief discussion on environmental problems occurs at the river ports.

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Riverbank Erosion: Riverbank erosion is a vital environmental problem in many spheres of the world. Darlong & Prasad(1996) stated that since its formation, soil has always been on the move. Rain and wind play major role in the movement and transportation of soil particles from place to place which results in soil erosion.[3] Jeevanrao (2002) also pointed that among the various soil degradation processes, soil erosion is the most serious degradation problem in the Indian subcontinent. Erosion due to water and wind occurs over large areas. He also pointed out that as per estimates of the Central Water Power Commission, about 1356 million acre ft. of water flows annually through the rivers to sea, of which 1.87 million acre ft. runs off annually, causing soil erosion.[4]

Riverbank erosion, especially during high flood period in Assam Valley is a regular annual feature. Goswami (2003) stated that in Assam it is a serious hazard caused by various rivers. Erosion hazard posed by the river Brahmaputra is very serious in several vulnerable areas such as Majuli and Palashbari. A large chunk of the Majuli Island i.e. about 35.00 per cent of its present area has already been lost to the river in the last few decades.[5] *Economic Survey, Assam, 2015-16* reported that an area of 4.27 lakh Hectare of the State has been eroded by the rivers since 1950 which is 7.40 Per cent area of the state. The average annual rate of erosion is 8000.00 Hectare.[6]

The same situation is being caused at the river port areas. Such occurrence is seen at the Neamati ghat, Matmora, Deasangmukh, Dikhwomukh, Palashbari, Lahorighat, Silikhaguri, Dhunaguri, Jamuguri, Bodoti ghat, Gomiri ghat etc. posing a threat to its environment. Frequent breaches develop in the embankment during high flood. Heavy pressure exerted by high flood water on the embankment, washes away the weaker portion of the embankment and inundates the nearby area with consequent effect of heavy silt and sand deposition on the fertile cultivated fields. Besides, due to high rate of erosion sometimes, the locations of the ports have to be changed.

Siltation: Siltation caused by flood water causes land degradation. Hussain (1996) pointed out that the fertile plains and flat valleys of the North-east are subjected to degradation by deposition of new soils (Sand and boulders carried by streams and rivers coming from surrounding hills and mountains).[7]

In Assam the deposition of sand due to flood in many areas causes loss of agricultural land to some extent by diminishing the fertility of soil. At the riverbank areas it has been a severe problem that hundreds hectare of land including a huge area of agricultural land is submerged by the sands and silts carried by the floods. At the port areas too, a huge area is submerged by the sands and silts carried by the floods and river water. It is leading to the degradation of soil quality which ultimately hampers in agricultural production of hundreds families. In some places the available paddy fields have become completely barren due to heavy siltation. Besides, deposition of sands and silts in many ponds hampering fish cultivation and submersion of roads connected to the ports is leading to communication problem. Therefore, the high siltation leads in disruption of

agricultural production and as well as in fish cultivation, communication etc. We have seen such occurrence at the Matmora, Silikhaguri, Jamuguri, Neamati port areas. It is leading to the degradation of soil quality, affecting the local people in many ways. Phukan(2007) in his study in the Lakhimpur District revealed that damage of paddy fields, crops, houses, offices, shops, hotels etc. by the siltation are the regular incidences in the affected areas.[8] In another study Gogoi(2008) has reported that in Sadiya Region of Tinsukia District of the state, suddenly occurred deposition of huge amount of coarse to medium grained sand on the existing agricultural fields due to influx of flood water makes much of the resourceful lands into wastelands.[9]

Creation of Hellish Atmosphere: The visitors, passengers and picnic parties leave or throw their wastes especially the carry bags, packets and glass bottles, rejected food items here and there, polluting at the port areas where the rotten and stinking garbage create a hellish atmosphere. The offensive smell of those particulates degrades the atmosphere of these areas that leads to an unhygienic living condition.

Automobiles: Automobiles affect environment to great extend by emission of different gases. Through these famous river ports a number of ferries move ups and down. Passengers gather in a large scale. Linked with the ferries, many passenger vehicles and goods are communicated through these river ports. But, sometimes many ports are polluted due to high quantity of discharges by the automobiles especially during busy days.

Lack of proper sanitation: The lack of proper sanitation system is clearly visible, adding to the dirty atmosphere and unbearable stink. Most of the hotels and shops are in unhygienic condition, the back sides of which become heaven for pigs and crows.

3.2 Impacts of Environmental Problems:

All these factors are adversely affecting the environment almost all those ports. First, the bank erosion or by changing the course of river; a large area might be vanished into the river which not only disturbs the ecological habitats, but a considerable portion of cultivable land might be lost. Inhabitants, live stock are going to be suffered due to devastating flood and large-scale erosion. Several inhabitants have already displaced from their original habitation to suitable places. Cultivation and farmers are hampered to a great extend.

Secondly, the deposition of sand and silt on a huge area is causing poor environment for crop production. High deposit of sand may convert good crop field into an uncultivable land.

Thirdly, the environmental pollution factors emerging at the ports caused by automobiles, waste materials, lack of sanitation however are not so destructive for the people living nearby the river ports. The factors are just disturbing the passengers gathered, small business men at work, transport workers at the ports areas in particular. The picnic and excursion parties and out-side travelers coming close to

the river ports are facing such environmental problems. Related water-pollution might harm the water-born diseases but only those which move or stay close to the ports.

4. Conclusion and Suggestions

The above results show that environment of the port areas are being degraded by heavy soil erosion, deposition of sand and silt, large number of automobiles, waste materials etc. which are threatening people to great extent. Therefore, to minimize the environmental problems some protective measures might be suggested in brief as follows:

- 1) A central plan by the Government is needed to tackle large scale erosion by the Brahmaputra and its tributaries. Besides, vegetative methods of controlling erosion can be highly effective in controlling erosion.
- 2) For their food security, the concerned inhabitants should grow various winter crops and at the same time, they may devote towards production of 'low volume - high value' crops.
- 3) Proper sanitary and drainage system should be provided along the port areas to reduce pollution. Some prohibitory orders and proper guarding system from the part of the govt. are also to be attached herewith.
- 4) It is abundantly realized that the local organizations may play important roles in bringing desired development. The NGO's role for bringing awareness would be a must in this regard. The NGO's may be trained by the govt. in participatory methods for environment analysis, planning and management in health and sanitation.

Through such measures such environmental problems would be reduced which leads the river ports for proper functioning in transportation, tourism etc. and would be more bright in creation of cultural and literary works.

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Author Profile



Diganta Kumar Phukan, an Assistant Professor in the Department of Sociology, Jorhat College (Amal.), Jorhat, Assam has been awarded Ph. D. Degree by the Dibrugarh University, Dibrugarh, Assam, India in 2008. His interested areas of study are urban society, environment and society, society of North East India, displacement etc.