

RIVERS OF BENGAL: ECOLOGY, SOCIAL CHANGE— A CASE STUDY IN NADIA DISTRICT FROM 1853 TO PRESENT TIME

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Abstract: *The physical environment of Nadia District produces an overwhelming impression of a land which is well-watered, whose soil is fertile, where the fields are green, yielding all kinds of crops in plenty. All these blessings of nature are in fact the gifts of its great river systems. The most prominent feature of Nadia's landscape is the existence of innumerable rivers and streams both large and small. They criss-cross the entire land and bring fertility to the soil, and enable us to undertake successful agriculture. Its highly fertile alluvial soil and its rich agriculture have made it proverbially prosperous as well as populous.*

Prior to the development of railways, these watercourses afforded the regular means of communication between the upper valley of the Ganges and the seaboard and various classes of boats navigate very easily through these rivers. Once upon a time these rivers provided great facility for trade. Traders used these channels for import-export business of cotton thread, garments and liquor from Santipur, fine silk garments, sugar and rice from Malda and Murshidabad etc. Prior to the construction of rail-line and road upon the rivers, many Ganja and Town developed besides these rivers, but now they are all vanished in their old nature.

But today these watercourses and water-body are all in the nature of dying and it is doubtful to us whether they would be existed or not in future. It is a serious threat to our society and environment. We are very careless about this changing condition.

Keywords: *Physical Environment, Waterways or river-system, Market-town and trade centers, Old Glory, Changed scenario.*

Introduction

This writing seeks to situate ecology within the matrix of long-term social and economic change in Nadia District of Colonial Bengal. I want to focus on a period between approximately from after 1850 (In 1853 modern communication system, the railway was introduced) to present time (after the independence people's expectation is going to be high and their number is also increasing phenomenally). In this period social & economic change taking place in a dynamic and mutually constitutive relationship with environment.

"Bengal is mainly a deltaic region, in here the pre-mature decline of the old rivers or sudden rise and violence of the new ones are natural features of the landscape intersected by many rivers, spill channels and sub channels. As the riverbed rise higher, the river loses connection with the headwater and languishes with some of its spill channels. These topographical changes had more intensely commenced in 19th and 20th centuries. First, the most active portions of the Bengal delta were now shifted to Eastern Bengal, which constituted the most populous and productive region of the Ganges valley. Both the double-cropped area and the area under the wet variety of rice increased and co-existed with heavy rural density. Most of these changes probably occurred within a short span of hundred years after the middle of the nineteenth century. Secondly, the upper delta, particularly the central and Western Bengal, became comparatively moribund during the same period. The fertility of the soil had decline owing to the loss of inundation silt, when the rivers deteriorated as the result of the Ganga having marched eastward. The decline of rivers in Western Bengal, and the decadence of agriculture in Burdwan and Hooghly were clearly discernible from the middle of the nineteenth century. Thirdly, with the construction of roads, railways and embankments in the course of the nineteenth century in Western and Central Bengal, water logging became a real problem."¹

Identity of Nadia District

Nadia is a prominent district in West Bengal. It covers an area of 3,927sq.k.m. The District comes with a lot of historical significance. Agriculture is the main occupation here. The district is surrounded by Bangladesh to the East, North 24 parganas and Hooghly to the South, Bardhaman to the West and to the north is Murshidabad district. The District is situated to the east of West Bengal. Nadia is located between 22°53" and 24°11" north latitude and 88°48" east longitude. The District is in the shape of linear and is 46 feet above sea level. According to 2011 census, the population of Nadia district is 5,168,488. The male population is 2,513,432. The population density of the district is 1316 people per square km in 2011.

1. Mukherjee, R.K-The Changing Face of Bengal: A Study in Riverine Economy, with an introduction by prof. Arun Bandopadhyay, C.U., 2008-09, P-ii.

Physical Aspect

The physical environment of Nadia District produces an overwhelming impression of a land which is well-watered, whose soil is fertile, where the fields are green, yielding all kinds of crops in plenty. All these blessings of nature are in fact the gifts of its great river systems. The most prominent feature of Nadia's landscape is the existence of few rivers and streams both large and small. They criss-cross the entire land. Its highly fertile alluvial soil and its rich agriculture have made it proverbially prosperous as well as populous. The land we lived in, was built up gradually by the silt carried by the rivers mainly from the Himalayas and partly from the hills of Chhota-Nagpur and the Santhal Parganas. The rivers

streams here both tidal and non-tidal, with veneration, they created the land, were draining and fertilizing it and were helping in carrying the produce. Fertilization by tidal silt may not be apparent, but as the source of this silt was really what was carried by the upland floods, the manorial properties of which were so highly valued, it is only a question of time.

Nadia is situated at the head of the Gangetic delta, and its alluvial surface, though still liable in parts to inundation, has been raised by ancient deposits of silt above the normal flood level; its soil agriculturally classed as high land, and bears cold season crops as well as rice. The rivers have now ceased their work of land-making and are beginning to silt up.

The whole district is a network of moribund rivers and streams; but the Bhagirathi, the Jalangi, and the Matabhanga are the three which are called distinctively the 'Nadia Rivers'. The rivers are all offshoots of the Padma (the main channel of the Ganges). This river enters the district at the place where it throws off the Jalangi, it flows through the district in an easterly direction, and leaves it a little below Kustia (Now in Bangladesh). The Jalangi or Kharia as it is also called; belongs entirely to Nadia, passing in an exceedingly tortuous course along the north-western boundary, with Krishnagar on its bank, and falling into the Bhagirathi opposite Nabadwip city. The Bhagirathi takes the name of the Hugli from this place of junction. The Matabhanga, or Hauli, leaves the Padma about ten miles below the place where the Jalangi diverges from it. It flows first in a south-westerly, direction to Krishnaganj, due east of Krishnagar, where it branches off into two streams, called the Churni and Ichhamati. The Churni passes in a south-westerly direction past Mamjuani (Near Bagula) and Ranaghat, and falls into the Hugli between Santipur and railway station of Chakdaha. The Ichhamati flows in a southerly direction, passes by Nonaganj and Bongaon, till it enters the district of the 24 parganas.

Agriculture

During colonial period the staple crop of the District is rice, which is divided into the following four varieties, namely:- 1. Aus, or autumn rice, sown in May and reaped in August and September. 2. Aman, or winter rice, planted in the months of June or July, and harvested in November. 3. Boro, or spring rice, planted in January or February, and reaped in March or April. 4. Jali, sown in April or May, and reaped in October or November. Except rice the other food crops which were grown in this district, namely:- Barley, Linseed, Mustard-seed, Til, Peas, Gram, Mashkalai, Musuri, Arhar and Chilies. Jute is also produced in Nadia, but not to any great extent, nor of the same superior quality as the plant grown in East Bengal.[‡] According to the Revenue Survey, the area of Nadia District under cultivation was about 3249 square miles, or 2,079,692 acres.^{##} There was no extensive artificial irrigation practiced in this district. Cultivation was depended on rainfall and soil was prepared by floods. The cultivator was much less dependent upon the local rainfall for his food than his fellows in the other parts of India. There was therefore hardly any danger of a famine or even a serious scarcity over a wide area. It is true that the winter rice requires rain at the right time, but delay does not ruin them, rain is practically certain. Rain was no doubt much more important for the spring and autumn crops, but they do not form such a large proportion of the total production of food as to cause a famine or even a scarcity. Floods were much more important than rain for the crops and were a blessing, but sometimes also a curse, to the cultivator. On the whole, the distribution of rain over the year combined with the floods, permits the growth of crops in all the seasons of the year, and prevents the area from becoming dependent upon the rainfall of any one season. It was thus seen that in matters of fertility of soil, plentitude and distribution of water and drainage, nature was very bountiful.[‡]

Hunter, W.W.--A Statistical Account of Bengal, Vol.2, District of Nadiya & Jessore, London: Trubner & Co. 1875. pp. 64-66.

Hunter, W.W.--A Statistical Account of Bengal, Vol.2, District of Nadiya & Jessore London: Trubner & Co. 1875. p. 69.

But after the independence, agricultural scenario has been developed with the help of HYV seeds and minor and small irrigation project. Net cropped area has been increased in 2,72,135 hectares and food grains production was 9,42,601 M.T in 2000-01. The number of deep tube wells has increased from 531 in 1976-77 to 664 in 2000-01. There were only 15,700 shallow tube wells in 1976-77 and their count rose to 64,637 by 2000-01. The following table shows the degradation or deviation our nature:-

Source	1976-77		1986-87		1996-97		2000-01	
	No.	Area (Hectares)	No.	Area (Hectares)	No.	Area (Hectares)	No.	Area (Hectares)
Deep Tube well	531	21,240	615	24,600	636	25,440	664	25,440
River life irrigation	236	10,760	319	12,760	319	12,160	319	12,760
Mini Deep Tube well					245	5,848	245	5,848
Shallow Tube well	15,700	43,960	32,060	89,768	68,587	1,64,656	64,637	1,64,656
Tank / Khal / Beel		5,544		4,974		3,912	306	3,918
Total		81,504		1,32,102		2,12,016		2,12,622
Percentage		30.37		48.36		77.9		78.1

(source –<http://www.nadia.nic.in/Agriculture/agriculture.html>, accessed 11 September 2016)

£ Panandikar, S.G. The Wealth and Welfare of the Bengal Delta, CU,1926, pp. 14,17.

Glory of water-streams and places

Until the spread of the railways, these watercourses afforded the regular means of communication between the upper valley of the Ganges and the seaboard and various classes of boats^a navigate very easily through these rivers. Once upon a time these rivers provided great facility for trade. Traders used these channel for import-export business of cotton thread, garments and liquor from Santipur, fine silk garments, sugar and rice from Malda and Murshidabad etc. The principle article of export trade from here were indigo, pepper, turmeric, jute, brass, linseed, tobacco² and sugar³. Grain, brass-work, and cotton cloth were also exported to a greater or less extent⁴. 'The imported article of salt, oil, cloth, etc from Calcutta, cooking coal from Bardhaman and Manbhum. Kerosene oil which was imported from Calcutta then re-exported to Jeshore and Murshidabad. Potatoes were imported from Kalna to a greater extent and re-exported to other provinces. Rice were imported here from Bardhaman, Dinajpore, Bagura and Jeshore'.⁵

Prior to the construction of rail-line and road upon the rivers, many Ganja and Town developed besides these rivers and these places were chiefly carried on the export and import trade in this district. The principle seat of commerce in Nadia were Krishnanagar, Swarupganj, Santipur, Krishnananj, Hanskhali, Ranaghat, Bangalji, Alamdanga, Chakdah, and Gopalnagar.⁶ The export and import trade was chiefly carried on by means of permanent marts. So also was the internal commerce of the District, bazaars were being common, and everywhere met with at short distances. Fairs and religious festivals form temporary centers of trade, and were the chief marts for the exchange of household products, such as thread, etc.⁷ It is a serious threat to our society and environment. We are very careless about this changing condition. The demand of food is growing rapidly with the increasing population. It is known to us very well that we use lot of pesticide, chemical and ground water to produce our crops which are being harmful to our health and future. But in past, when the water streams and water-body had full of life, almost every year these streams inundated the greater part of the land and enriched by the deposit of silt. There had no need to fertilize our land artificially and extensive use of ground water. Another important changed have been taking place in our parental caste occupation. For example, the Jalia (fishermen & boatmen), Mala (fishermen & boatmen), Patni (boatmen, and generally in charge

α Malini, Patli, Bhar, Katra, Sarong, Sangi, Pansway, Khajnaghata, Jang, Ulak, Kosa, Phukni.

2 Hunter, W.W. A Statistical Account of Bengal, Vol.2, District of Nadiya & Jessore, Trubner & Co., 1875, p.104.

3 Mallick, Kumudnath, Nadia Kahini, 1910(1317), Ranaghat, p. 396.

4 Hunter, W.W. A Statistical Account of Bengal, Vol.2, District of Nadiya & Jessore, Trubner & Co., 1875, p.104.

5 Mallick, Kumudnath, Nadia Kahini, 1910(1317), Ranaghat, p. 396.

6 Hunter, W.W. A Statistical Account of Bengal, Vol.2, District of Nadiya & Jessore, Trubner & Co., 1875, p.104. and Mallick, Kumudnath, Nadia Kahini, 1910(1317), Ranaghat, p. 396.

7 Hunter, W.W. A Statistical Account of Bengal, Vol.2, District of Nadiya & Jessore, Trubner & Co., 1875, p.104.

Changed Scenario

But now they are all vanished in their old nature. For example, we remember the ancient glory of Chakdah. During colonial period the market of Chakdah was very famous, more than 200 storehouse were present there and the river Ganga, flowed beside this place, were filled with loaded boats(article and passenger). But now that glory of bazaars, ganja are ruined due to the changing condition of river Ganga and the advent of railways.⁸ Not only Chakdah, most of the famous places have lost their glory. For example we mention the village Mamjuan, Hanskhali, Shihnibas on the Churni, Bhajanghat, Nonaganj on the Ichhamati, Krishnananj on the Matabhanga, Muragacha, Dogachaia, Matiari, Kaliganj, Mira on the Bhagirathi, etc.

But today these watercourses, water-body, ganja, marts and bazars are all in the nature of dying and it is doubtful to us whether they would be existed or not in future. Naukari is a ancient village, situated one mile north-east side of Ranaghat and the river 'Bachkor Khal' passed away through the southern side of this place and the river Hangarnama flowed through the eastern side and they were both distributaries of river Churni. Maharaja Krishnachandra went his Srinagar palace sailing through the Bachko river⁹ but this scenario completely vanished. They were completely silted up and choked and have become a mere wastewater and garbage canal. Another glorious river was Bagher Khal which linked two rivers, one is river Jamuna and other is river Hooghly and famous traveler Ptolemy mentioned it in his account.¹⁰ There had many water streams, khals, bils in this district and they were all inter linked between each other but many were choked, silted up and many were vanished and we will trace it only in our literature, in our anthology, etc. of the ferries on the rivers), Manjhi (boatmen), Tior (fishermen), etc, have abandoned their hereditary employment, and mobilize themselves in different sphere of life. We have lost our ancient boat-making art and technology. In past our life-cycle and culture were interrelated with this watercourses and water-body. In nineteenth century many Government initiative were seen to improve these watercourses for navigating. Government engineers still manage to maintain them as effective highways of commerce and during the hot weather a weekly register of their depth at various points is published, with a view to guiding the native merchants and boatmen as to which of the channels they may most safely adopt.

8. Mallick, Kumudnath, Nadia Kahini, 1910(1317), Ranaghat, p. 347.

9. Mallick, Kumudnath, Nadia Kahini, 1910(1317), Ranaghat, p. 300.

10. Mallick, Kumudnath, Nadia Kahini, 1910(1317), Ranaghat, p. 353.

Conclusion

But this beautiful scenario has been completely changed in present time. Living a simple life in peace and plenty the Bengalis of earlier times were generally well contented with what they got without much exertion from the bounteous nature. Civilization has progressed, the traditional agricultural society has become industrialized, population has increased, men's ways of life have become sophisticated and their outlook has changed. What they used to get previously as free gifts of nature is no longer sufficient. There have no positive initiative seen in state label and society label to conserve them from dying. We have to know why and how does our environment degrade in stress. And how does this changing course effect our social relation and economic condition in base label. The railways began to operate in the western part of Bengal in the late 1860s and roads in the end of the nineteenth century and in what way it affects our ecological regime.

As we shall see in this writing, a dynamic period in the river system, social formation, human well-being and economy took place in the nineteenth century. This was followed by a contrasting devastating decline by the turn of the twentieth century. Yet this writing is not about differences between the nineteenth and twentieth century, prosperity and decline, tradition and modernity, etc. It is a study of the way in which ecology helps to explain these categories, changes and differences. The present work thus proposes to fill in this gap.

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