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Towards a Theory of Muslim Social Stratification

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Omar Faruque

Grassroots Views on Health Practices, Changes in Health Behaviour and Policy Means for Health Communication in Bangladesh

Mohammad Mainul Islam

The Life Style of MSM: A Study in Two Suburb Areas of Dhaka City in Bangladesh

Mozammel Haque Neogi

Impact of the Bangabandhu Bridge on Environment: A Study in a Selected Area

Selina Ahmed, K. M. Rezaul Karim and Amirul Alam Khan

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Editorial

Bangladesh is an underdeveloped country where sociology is also an underdeveloped discipline although the first one is not the exclusive cause of, or entailed, the second one. Therefore, development of Bangladesh is not a precondition for development of sociology itself rather development of sociology - for many reasons, is necessary for the development of the country. Sociological knowledge itself cannot play the decisive role of developing the society itself as the sociologist does not have any secret art or tactics for that, but can significantly contribute to find out certain ways and means to propel the country towards development.

In Bangladesh, sociologists are often regarded for their potentials rather than their accentuated achievements, which is partly because the society is a traditional one where ascriptive role is still pre-dominant in almost every sphere of life and where even a professional counts prestige more important than self-contribution to the society. Despite that an emerging trend of transition in the society from tradition to modernity is evident in almost all spheres of life where concomitant variation is also observed in many sectors of the society. Thus sociologists, although once enjoyed a full privilege without pursuing any significant intellectual work, have a reason in coming days to apprehend that they will not enjoy such privileges unabatedly without changing their present trend of marginal accomplishment. With the growing demand for social researches and to keep pace with the demand of the new millennium - the sociologists have to undertake researches in many fields including the fields where needs for applied research are burgeoning day by day. Therefore, the present state of sociologists would not allow the professionals to remain inactive in coming years. And to meet the challenges of the new millennium or post modern society, there should be opportunity for publications of research findings as without that the inspiration for sociologists would not remain strong here, and moreover it will be despairing for them as without that their findings will perish.

Intellectual pursuits without having scope of publication(s) cannot be sustained in a society for an indefinite period, which perhaps also entail a poor performance of the sociologists of the country in addition to causing other major or minor limitations. The present initiative is, therefore, to create an opportunity for and to remove the entrenched disadvantages of the sociologists - disadvantages they have been, as they were facing over the last five decades.

It is not a matter of complacency to have scope for publications of articles prepared on different aspects of social researches, perhaps, it is also equally important to adhere to pursuing high quality research to gradually compete with the changing world, where many other countries have superseded us in respect of number and quality of social researches. Therefore, time has come to wake up and propel social researches with all enthusiasm to cover the lost decades and for that matter to add to the vehicle of the same. I am confident that the trained sociologists of the country are fully aware of the fact and are ready to face the challenges that are ahead of them.

I, therefore, would like to urge upon the sociologists of the country to come up with a mission to undertake social researches here in Bangladesh with paramount quality and increased quantity. Everybody's will and zeal can together bring the success much faster than what one alone can pursue. And time for pursuing anything important for greater social cause never runs out.

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Articles for publication in the journal should be printed, double-spaced on one side of A4 size paper with enough margins at both side.

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Contents

Editorial

Guidelines for Contributors

Articles

- Towards a Theory of Muslim Social Stratification 1
Khurshed Alam
- The Social and Cultural Significance of Homestead Forests 13
Khondoker Mokaddem Hossain
- ✓Urbanization in Bangladesh: A Socio-historical Analysis 35
Omar Faruque
- Grassroots Views on Health Practices, Changes in Health Behaviour and Policy Means for Health Communication in Bangladesh 49
Mohammad Mainul Islam
- The Life Style of MSM: A Study in Two Suburb Areas of Dhaka City in Bangladesh 61
Mozammel Haque Neogi
- ✓Impact of the Bangabandhu Bridge on Environment: A Study in a Selected Area 77
Selina Ahmed, K. M. Rezaul Karim and Amirul Alam Khan

Book Review

- Dr. Afroza Begum, Government-NGO Interface in Development Management 85
K. M. Rezaul Karim

Impact of the Bangabandhu Bridge on Environment: A Study in a Selected Area

Selina Ahmed*
K. M. Rezaul Karim**
Amirul Alam Khan***

The present paper attempts to highlight some issues regarding impact of the Bangabandhu Bridge on environment in the resettlement sites and in the river Jamuna itself. It is devoted to assessing environmental impact related to forestry, fishery, livestock, cropping pattern, air and noise pollution, and level of water. The study clearly reveals that severe loss of multiple types of homestead trees caused loss of some regular income, fall in fish production, multi-crop land turned into mono-crop land causing a threat to the ecosystem, serious affect to livestock as the re-settler were bound to sell their cattle and poultry at a throwaway price during resettlement, absence of birds flocks in the chars of river Jamuna, abrupt increase in air and sound pollution in that area, and certain effects on the surface and ground water resources in the surrounding areas. The study, therefore, strongly suggest to pursue a balanced development effort to minimize the human sufferings that all infrastructure development activities should have the aims to achieve to.

Introduction

Most of the big infrastructural development projects have their impacts on the environment, human habitat and life (Gain, 2002:297). The Bangabandhu Bridge, the longest ever bridge in Bangladesh and the 11th in the world (Chowdhury, 1998:4) is no exception. The bridge has connected the northwestern region of the country with the eastern region. It has the provisions for Road and Rail Communications, Power Supply Inter-connector, Gas Transmission Pipeline and Telecommunication facilities at the cost of US\$962million (*Ibid*: 4). It is assumed that the

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bridge will act as a development catalyst for improving the quality of life of no less than 30 million people (Bhorer Kagoj, 23 June 1998).

The main focus of this paper is on environmental impact of Bangabandhu Bridge. Initially environmental impact means any change in the environment that is caused by an activity or a factor, which may be physical, chemical, biological, social or economic (Tribedi, 1997:241). In the past the development patterns in both developed and developing countries had been characterized by serious environmental damage, which were simply not sustainable (Osman, 1993:241). However, if such kind of development implementation is stopped, the development of these countries is hampered.

Now let us see what type of environmental impact has occurred due to the construction of Bangabandhu Bridge. It is reported that 16,431 families have been directly or indirectly displaced from their ancestral property as a result of the construction of the Bridge (Hossain, 1998:8; Alam, 2001). It has caused economic, social and cultural disruption of the lives of the affected people. It has an effect on their productive assets and production systems. Besides, the bridge has serious impacts on ecology, human habitation and life. Moreover, the massive river training activities have considerable impacts on the local environment, livelihood of the local people and ecosystem of a large area around the bridge.

Objective

The preeminent objective of the study is to assess the impact of the Bangabandhu Bridge construction on environment in the resettlement areas and in the river Jamuna itself. It is intended to unearth a crucial area of social milieu about which much has not yet been said.

Methodology

This paper has originated from a set of data and information collated mainly from the secondary sources. The necessary primary data for the paper was collected from the two resettlement areas through the help of primary sources (one located at village Saratia, Jamtaildas, Jamtailkhirpur and Dukiabari of Sirajgonj Sadar upazila and another at village Palsia and Nikrail of Bhuapur upazila of Tangail district) where most of the affected people were residing during the period of July 2000

to December 2000. The data was collected through social survey method and field level observations. In order to collect the relevant data, a structured questionnaire was used, which included open-end and close-end questions. For the selection of the respondents random sampling method was followed.

In this paper, an attempt is made to substantiate opinions and views of the respondents, key informants and different reliable secondary sources.

The Impact of the Bangabandhu Bridge on Environment

Forestry

Bangladesh is a forest-poor country though it looks lush green. Forest contributes 4 per cent to the GDP and 9.6 per cent to the agricultural sector (Bangladesh Economic Survey 2000:65). About 2 per cent labour force of total employment sector are engaged in forest sector (Ibid). Due to the construction of the bridge the forestry in the resettlement areas has been affected. Before the construction of the bridge, the respondents owned a considerable number of timber, fruit, and medicinal and other types of trees in their homesteads. These trees were one of their sources of income. The construction of the bridge forced the respondents to sell their homestead, fruit, timber, and medicinal and other trees. The loss of the trees means losing of a regular flow of sizable income as well as supply of nutrition. After the construction of the bridge some NGOs got involved in motivating and organizing the people for afforestation and they were responsible for the afforestation of the resettlement areas.

The findings reveal that afforestation was made in a non-natural way and most of the trees they planted were of new species. The most common one was *sisu* many of which suffered from attacks of woodborer and resulted in death. The plantation of *sisu* caused heavy financial damage to the already uprooted people. The other varieties were acacia and eucalyptus. Both are alien species in Bangladesh, which are not considered environment-friendly trees.

Fishery

The fisheries sub-sector contributes about 10 per cent to agricultural GDP and 3 per cent to total GDP (Mian, 2001:16). One million people are directly employed in fishing, which is also related to our culture and environment (Ibid: 6).

In the resettlement areas most of the respondents stated that changes have occurred in the fisheries as a result of the construction of the bridge and this has an impact on their economic life. Previously many land-poor people were directly dependent on fishing, while others' household income and food were supplemented by it. But according to the respondents fishing is now restricted to the resettlement sites¹. It has affected their food habit seriously. As a result they complained of suffering from malnutrition.

Again, river training has critical impact on the fish diversity and production and consequently on the fishermen community. The fishermen in the resettlement sites have complained of a considerable fall in fish production with the construction activities². According to them, *baghair*, once a very common species of fish is on the verge of being extinct.

Cropping Pattern

The economy of Bangladesh is mainly based on agriculture. Sixty four per cent of our population is engaged in agricultural activities (Bangladesh Environment 2002:546). Cropping patterns in Bangladesh have always been diversified. From time immemorial, farmers in this country used to cultivate different crops on their land that maintained a bio-chain to keep the land fertile. Crops here represent a share of about one-fourth (24 per cent) of total GDP and about four-fifths (73 per cent) of agricultural GDP (Mian, 2001:16). According to the respondents the cropping pattern has changed significantly in the area after the construction of the bridge. This change is a major concern in the

¹ In another report (Alam et al 2001) it is pointed out that 4 km. area in both sides of the bridge people are not allowed to go for fishing in the river. Even they cannot go for taking bath.

² Due to poor social planning the boatmen were excluded from the compensation package undertaken under the resettlement component of the bridge development. Many others could not get compensations as they failed to prove their legal claims, although there was wide coverage of the entitlement under the compensation package. Moreover, concept of compensation of 'land for land' did not work in most of the cases although almost 70 crores of Taka were returned as unused from the

resettlement areas. The major crops grown previously in the resettlement sites were rice, wheat, jute and oilseeds. But now farmers tend to grow rice only resulting in shortage of other food grains, pulses, and cash crops like jute and oil seeds. Remarkably, the multi-crop land has now turned into mono-crop land. But monoculture is considered as a serious threat to the ecosystem.

Table 1. Major crops grown in the study area

Sl. No.	Major crops	Area (%)
1	Rice	58
2	Wheat	16
3	Jute	06
4	Oilseeds	12
5	Minor crops	08

Source: EMAP, P.28

Livestock

Livestock contributes nearly 3.02 per cent to GDP and about 15.5 per cent to agricultural GDP (Ibid: 16). Its importance is easily understandable. It is known that the construction of the bridge has put severe adverse effects on livestock and poultry population in the resettlement areas. During the field survey, ill-health cattle and goats were found to search for fodder desperately. According to the respondents in the resettlement areas, they were bound to sell their cattle and poultry at a throwaway price during their shifting to the resettlement sites. At present many of them have a small number of livestock because of poor economic condition.

The construction of the bridge has also affected wildlife such as the birds, the mammals, the reptiles and the amphibians of the area. It is known from the respondents that bird population has decreased considerably in the adjacent areas of the bridge. According to them, at least three species of mammals and two species of reptiles are going to be extinct from the area. The *bele* ducks are not seen any more near the bridge as frequent vehicular movements create high degree of noise and frighten this shy type of ducks that visit Bangladesh from Siberia in the winter.

The local people said that previously birds in flocks used to come to the Jamuna *chars* to lay eggs during June-July. But with the advancement of construction work of the bridge they have abandoned the area. Researchers think that the change in the food chain caused by the construction might have been the major reason behind the birds' disappearance from the bridge site.

Air Pollution

Air pollution has become one of the most serious environmental problems in Bangladesh in recent years (Gain, 2002:207). The emission of carbon-dioxide, carbon-monoxide, methane, CFCs from buses, trucks, tempos, cars etc. and dust, resulting from vehicle movement on the bridge are polluting air in and around the bridge areas.

It is known that the number of vehicles going across the river Jamuna has increased significantly after the construction of the bridge. Table 2 shows the increasing trend of traffic over the bridge across the Jamuna river.

Table 2. Vehicular Movement over the Jamuna during (1996-2000)

Year	No. of buses	No. of trucks	Total
1996-97	1,52,459	3,27,446	4,79,905
1997-98	1,55,784	3,15,962	4,71,746
1998-99	2,90,923	5,79,969	8,70,892
1999-2000	3,32,731	6,25,621	9,58,352

Source: JMBA & BRTC, 1998

The growth rate of traffic is 2.18 per cent more in 1997-98 compared to that in 1996-97 whereas the growth rate is 86.74 per cent more in 1998-99 compared to that in 1997-98. And the growth rate is 13.75 per cent more in 1998-00 compared to that in 1998-99. After opening the bridge 97.75 per cent vehicles go over the bridge and 2.25 per cent vehicles go through the ferry at Aricha-Nagarbari ghat (JMBA and BRTC, 2000).

Noise Pollution

Noise pollution is one of the main causes of environmental pollution in Bangladesh (Bangladesh Environment 2002: 49). Hydraulic horns, which are banned worldwide, are widely used here by buses, trucks, and minibuses. These hydraulic horns blown on at a very high volume and the indiscriminate use of loudspeakers etc. strain the ears and nerve system of the people every moment.

Because of the construction of the Bangabandhu Bridge and the approach road, a large number of inhabitants, living at the bridge-ends and resettlement areas have been exposed to cacophony created by buses, minibuses, trucks and loudspeakers. Besides, the bridge, being largest one in Bangladesh, attracts picnic parties from all over the country and a huge number of visitors who recklessly use loudspeakers. As there is no rule regulating the degree of sounds in the country, these people get a free hand in creating cacophony that has serious effects on health, particularly on heart patients. Based on traffic forecasts, the day-night average noise levels have far exceeded the international standard level of 50 dB (A), for outdoor sound level in residential areas (JMBA: 1998:129). However, the acceptable level of noise in Bangladesh is 55dB for residential areas having few commercial and industrial installations, 65dB for commercial areas (Ibid: 129).

Water Level

Ground water is an important source of water resource in the country. The river Jamuna carries about 6000 million tons of silts every year (Observer, 23 June 1998). The 47 spans of the Bangabandhu Bridge in the river bed have accelerated the process of siltation and new *chars* are being surfaced every year that block the normal flow of river water. This will seriously affect the Jamuna basin in future. The ground water level at both bridge-ends has a high iron content ranging between 2-5mg/litre (JMBA, 1998:112). Both resettlement sites are considered as semi-rural area. Water supply in these areas is done by community hand tube-wells. The construction of the bridge has certain effects on the surface and ground water resources in the surrounding areas.

Conclusion

The Bangabandhu Bridge is the largest infrastructural achievement of Bangladesh that has revolutionized the road communication system in this poor South Asian country paving the way to massive development aspirations, growth in both agricultural and industrial sectors. The construction of this bridge came as the fulfillment of a long cherished dream of Bangladeshi people. It has contributed significantly to our national productivity, mobility and development efforts. However, it has serious impacts on ecology, human habitation and life. The authors have tried to assess the effects of the bridge, especially on environment to draw the attention of the authority concerned, to a man-made problem, which needs to be addressed. Only a balanced development effort can minimize the human sufferings that all infrastructure development activities should have the aims to achieve to.

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