

CHAPTER 3 ENVIRONMENTAL ISSUES FOR CHAR AND HAOR DEVELOPMENT

Both Char and Haor areas suffer from early floods damaging Boro rice and summer crops. The frequency of damages of crops in Haor and Char area ranges from 1:5 to 3:5. Once in every five-year (1:5) significant crop damages are reported from Netrokona Sadar, Kishoreganj Sadar, Tarail and Bajitpur Upazilas in Haor area. Some of these Upazilas are not in fact fully Haor area. Twice in five year (2:5) crop damages area reported from Madan, Mohanganj Upazilas of Haor area and Gaibandha Sadar, Fulchari, Sharishabari, Dewanganj Upazilas of Char area. Thrice in five year (3:5) crop damages are reported from Ajmiriganj, Mithamain, Baniachang, Habiganj Sadar, Sunamganj Sadar, Derai and Jamalganj Upazilas of Haor and Kurigram Sadar, Nageswari, Chilmari, Belkuchi, Sirajganj and Jamalpur Upazilas in Char area (DAE, LGED and hearing from Farmer groups). Most of Haor areas mentioned above suffer from drainage congestion and shifting river channels in the Char area erodes cultivated land and settlement. And, poor communication hampers support services in both the areas.

3.1 Char Area

Classification of Char Area

The Char area situated on outside of the embankment is classified to three (3) structures and there are main land, attached char and isolated char, respectively.

Issues of Main Land

- 1) Land loss by the soil erosion as changing of existing alignment of the river
- 2) Lack of transportation to inside of embankment

Issues of Attached Char

- 1) Land loss by soil erosion
- 2) Lack of transportation to the embankment

Issues of Isolated Char

- 1) Land loss and movement by a soil erosion hazard
- 2) Degradation of soil fertility by sandy and/or silty loam soil texture
- 3) Life security of the housing places in the rainy season
- 4) Communication for the village to the village

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3.2 Haor Area

The environmental issues of Haor area are as follows:

- 1) Land loss by changing of existing alignment of the river
- 2) Degradation of the wetland by siltation, increasing of homesteads due to increase of population
- 3) Wave action in the flooding
- 4) Communication for village to village
- 5) Security of the housing places in the rainy season
- 6) Water quality of groundwater and surface water
- 7) Key wetland sites for waterfowl habitat, which is Tanguar Haor in Sunamganj including more wetlands suggested from District Authority
- 8) Protection of the roadsides and houses

CHAPTER 4 INITIAL ENVIRONMENTAL EXAMINATION (IEE)

4.1 Objective of IEE

Till early eighties the issue of environmental consideration for any development project did not receive due consideration. The Bangladesh Government established “Guidelines on Environmental Issues Related to Physical Planning” in September of 1992. And, Government through Department of Environment (DOE) has made it mandatory to study IEE and EIA for any development project for all categories except green one. The study concerned falls under red category and hence the IEE Study has also been taken up as per DOE’s guideline.

The survey on IEE will be conducted for the purposes of: (1) knowing the existing social and natural environmental conditions of the study area; (2) identifying constraints and problems for the project Rural Development Project Focusing on Flood Proofing. The specific objectives of IEE study would include:

- Assessment of the existing environmental condition of the Study Area
- Identification of impacts to ecosystem
- Identification of impacts to physical-chemical system; and
- Identification of impacts to human life such as health, socio-economic, and cultural asset.

The IEE shall determine the necessity of implementing a full Environmental Impact Assessment (EIA), which should eventually be the objective of the second phase of the study.

4.2 Methodology

4.2.1 Procedure

JICA Study Team collected the information of the project activities from the relevant organizations LGED, BWDB, BADC, DAE, etc. The survey was made from April 26 to May 6, 2001 within the Haor area and from May 10 to May 16 in the Char area. The interaction between the project activities and the significant environmental component was made based on the furnished checklist of IEE. Environmental and socioeconomic data from different sources, like BBS, DOE, and Department of Meteorology have been collected to prepare baseline environmental and socioeconomic profile.

The projects component which compose programs will include the following:

Flood proofing plan

- Infrastructure Plan (flood shelters, erosion prevention structure, etc.)

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- Non-infrastructure Plan (flood forecasting and warning, flood sheltering, disaster prevention organization, etc.)

Livelihood development plan

- Social infrastructure development plan (rural road, housing, water supply, rural electrification, health and sanitation, school, community hall, etc.)
- Agricultural development plan (crop production increase, irrigation, livestock, fisheries, marketing, food storage, etc.)
- Cottage industry development plan (food processing, handicraft, sewing, etc.)
- Human resources development plan (agricultural extension, vocational training, health education, primary education, literacy education, etc)
- Institutional development plan (credit system, administrative services improvement, village organization development, etc.)

4.2.2 Evaluation of Environmental Elements

An environmental impact matrix is used as a checklist of environmental effects. Environmental elements of impact matrix are based on “Bangladesh Guideline” by using JICA Guideline. The major components are social, demographic, economic, institutional and custom, health and sanitary, and cultural asset issues as social environment, and biological and ecological, soil resources, land resources, hydrology, water quality and temperature, and atmosphere as natural environment (refer to Table 4.1, 4.2 and Figure 4.1).

4.2.3 Survey Area

The survey area contains four districts of Char and four districts of Haor and total surveyed Upazila are twenty areas (refer to Table 4.3).

4.3 Results of IEE

Each result of IEE study areas is listed in Table 4.4 to 4.23. And the results of IEE for Char and Haor areas are summarized in Table 4.24. The impacts have been classified as A, B, C and D representing significant impacts, slight impacts, impact not fully known and there is no possibility of impact respectively. The impacts under 'C' category are subject to further investigation with the specific intervention. Moreover impacts under 'B' also need further investigation.

4.3.1 Social Environment

(a) Planned residential settlement is anticipated beneficial impact to the floating, landless or shifting cultivators. It is necessary to demand careful planning and adequate compensation through the involvement of the people participation.

(b) From the Study substantial positive changes in the way of life of the people is anticipated, particularly in the role of women through the involvement of different development activities. It needs appropriate planning and proper monitoring particularly regarding the role of women.

(c) Objective of this Study is to improve the living standard of the people. So, social and institutional structures will be developed obviously. But it needs proper attention during establishment or modify of rural organization.

(d) Changes in existing institutions and customs are expected due to the involvement of development activities. As a result existing societal and familial harmony may be destroyed. It needs to grasp adequate social movement and it's preparation of social management structure, with monitoring provision.

(e) Present use of agrochemical is low in the Study area. There will be increased of cropping intensity and diversity, and hence use of agrochemical may increase in the Haor area due to the development activities. It is necessary to adopt integrated crop management and use of bio-fertilizer.

4.3.2 Natural Environment

(a) Wetland flora is affected for the monoculture practice in the Haor area. Floral diversity has been lost for the encroachment in the Char and Haor area. Also felling of plants cause the change in vegetation. It is necessary to introduce green manuring crops and proper crop rotation. And it needs proper monitoring for cutting plants and protects erosion with appropriate intervention.

(b) Degradation of ecosystems with biological diversity is due to sedimentation, riverbank erosion, use of agrochemicals and conversion will cause degradation of ecosystem with biodiversity. It might be needed water tolerant trees plantation in the Haor area, protection of hunting wildlife, use of bio-fertilizer, and protection of erosion.

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(c) The Char soil is light textured, low in plant nutrients, and silt from the flood will enrich in the soil. The Haor soil is normally rich, flood proofing will decrease silt deposit but little change of soil fertility may occur. It is necessary to maintain soil fertility through use of soil mulch, green manuring crops and adequate planning and monitoring.

(d) Water flow will be reduced inside of the embankment/road but will increase in the outside surrounding area, which may wash the soil. Therefore, it needs adequate planning, design and monitoring.

(e) Inundation and flooding due to heavy rain and flash flood. There may be inundation and flooding within the flood protected area. It needs careful planning and design with the provision of adequate drainage system including monitoring.

(f) Sediment deposition will be increased outside, which will cause land level rising and subsequent water logging. It needs adequate planning, design and monitoring.