CHAPTER - XIV

CONCLUSION AND RECOMMENDATIONS

14.0 The Lower Tista basin forms a part of the Bengal Para delta (Humid) including (a) active (b) matured and (c) moribund sections within the (Old) Ganga drainage basin. As mentioned earlier, the riverine terrain comprises mainly the Tista with its meander-belts as well as the distributary system of the river (Pleistocene to Recent) which sustains a dense population based on primary type of occupation.

14.1 Here, accelerating population growth and earth transforming technologies are changing the Lower Tista basin (fluvial) environment at a rapid rate, even for the worse in places (both in India and Bangladesh). The methodology (pre-field, field and post-field) and the advanced techniques of data processing as well as mapping has made it possible to gather and manage related information much more efficiently and rapidly than the predecessors in this field especially towards the improvement of land use and management.

14.2 There has been a real population explosion in the region, particularly in the international border-side segment, through natural growth and influx, the latter over-shadowing the former. Moreover, as per 1991 census, instead of stringent family-planning, the decadal growth rate has alarmingly gone high. This is primarily due to the
lack of modern education (particularly amongst the female) which is again doubly reflected in the much lower general standard of living. As a result of this population explosion, there is a very rapid rate of rural extension of settlement and urbanization, and dangling of sky-rocketing land prices in front of the poor farmers for their farm lands by the urban promoters.

14.3 A lot of farm-hands are becoming idle with the loss of farm lands this way, who are unavoidably crowding in the towns and cities, and living in street-side hovels (jhopree). Open-market economic policy and growth of ultra-mechanised multinational factories are going to add insult to the injury as these big factories will use up lots of rural farm land without generating sufficient rural employment.

14.4 Summarised findings of this study with reference to some work items are given below:

(i) Agricultural productivity at a large number of key villages on the basis of ecological elements has been determined and the local deficiencies diagnosed for follow up actions.

(ii) A detailed contour map, with 3-metres interval, of the entire region has been prepared by the author by computation using spot heights, triangulation points, piezometric levels and field observations.
(iii) From the above map, areas susceptible to inundation have been identified more precisely than before. Precautionary measures may be taken on this basis.

(iv) Accessibility and transport frequency have been determined in respect of all types of public transport for the entire region by preparing detailed accessibility maps.

(v) Maps of land use patterns and intensity have been prepared from field data for selected villages in different sectors to determine the present state of land use.

(vi) Incongruity in industrial development in the entire region has been shown. This picture reveals how inadequate remained the role of the factories in catering to the underdeveloped rural areas. The scope of developing agro-industries for providing rural employment may easily be deciphered if further degeneration is to be prevented.

In addition to the point-to-point recommendations made earlier in the different chapters the following observations may be of special importance.

**Realistic Crop Patterns:**

14.5 *Sugarcane and Potato*: Sugarcane may be given more importance as a strip-crop and potato as a post Jute/Aus cash crop in Mekliganj of Koch Bihar District, Kurigram, Nilphamari, and tobacco
in Lalmanirhat. Vegetables and season flowers as market-garden crops should be encouraged more vigorously in the urban fringe of the Lower Tista Basin, where huge quantity of sludge is available to be used as very good manure.

14.6 **Wheat and Pulses**: Over emphasis on wheat cultivation in the non-traditional area like Lower Tista Basin, has already affected adversely the production of some of the essential crops in those areas which were traditionally important and ecologically suitable for those crops. Wheat may be grown in other areas, strictly on a limited basis, without pushing out such essential crops as pulses, mustard etc. There is continued scarcity of fish and edible oil in the very populous area of Lower Tista Basin. Pulse is an effective poor-man's substitute source of protein. Nilphamari, Kurigram, Gaibandha districts were traditional pulses and mustard seed growing areas. So, the production of these crops (preferably HYV) should be encouraged with all seriousness. Of course, a three crop formula of aus-kharif pulses - wheat may partially help, but the yield of rabi pulses is always much higher.

**More use of Composts**:

14.7 'Continued use of chemical fertilizer would to some extent, bleach the soil and break down the colloidal material, decreasing cohesiveness and moisture retentivity' (Mukherjee-1996). This survey has already revealed such happenings. This should be counteracted by regular use of compost, cowdung, night-soil etc. Bank loan should be made conditional to the making of a compost pit for each loanee.
farmer, otherwise they would neglect however much be the advice.

Co-operatives are Essential:

14.8 Middlemen's monopoly in the marketing of rural products must be liquidated and co-operative marketing largely introduced to safeguard the interests of the very large number of small growers and local consumers of the low income group. Increasing use of fast private carriers by farmers' co-operatives would substantially ease the problem of speedy marketing. In the absence of convenient public transport link from many rural areas with the urban markets, the middlemen are usually cornering and monopolizing the farm products, private carriers and the profit. In the recent introduction of State backed co-operatives there is too much meddling of political outsiders.

Enlargement of Fishing Areas:

14.9 Fish production in the region may substantially be increased by filling up parts of the moribund channels of Rangpur, Kurigram, and Gaibandha districts, and thereby creating long bils or jheels (elongated ponds) to serve the purposes of both fish culture and irrigation. More ice-making units may be introduced in different localities, as the few present ones are insufficient. The enlargement of fish culture areas should have priority.

Easier Transport:

14.10 Increase of frequency: Since railways are less frequent in the Lower Tista Basin, more buses are needed along the existing
roads. Excessive over crowding in the buses (even on the top) affects both the farmer-traders and the bus-operators. But the operators often complain about the uneconomical fare being the main obstacle in the way of increasing the number of buses. Moreover, they state that even if slightly higher fare be allowed by the government, the people would not pay it. This problem is practically common everywhere. A way in the interest of all should be found out by tripertite negotiations. Similarly, the frequency along existing launch routes should be increased in the river side areas. Here too the problem of fare increase should be solved amicably. But the main problem remains the fuel shortage.

Rational Settlement Policy:

14.11 Unplanned growth of settlements not only creates problems for the people themselves, but also increases the liability of the government when people are in distress. Most areas in this region remain submerged during monsoons and are usually growing aman paddy. People are not always mindful of raising sufficiently the level of the plinths before making the huts. Moreover, through the reckless and unplanned way of extending the settlements, they are rapidly diminishing the available farm areas. But when ultimately they suffer from chronic ill-drainage and inundation of their hamlets, they cry hoarse about government inaction. This unplanned extension of settlements must be checked. Population concentration and pucca structure construction are to be avoided, as far as possible, in the inundable pockets as detailed in the ecology section.
Industrial Regeneration:

14.12 There is considerable industrial maladjustment. The reasons behind the very little development of rice mills in this rice growing area must be thoroughly investigated and the difficulties remedied, so that one of the most important agro-industry, capable of absorbing substantially surplus rural manpower, does not suffer due to neglect. Of course, innumerable hullers are now husking paddy in the rural areas of the Lower Tista Basin. With extended electrification more power-looms may be installed for low priced textile production. The new industrial entrepreneurs must be able to make use of local raw materials and cater to local needs within local purchasing power. Poultry is an easy cottage enterprise to grow. The ancillary industries (even partially sophisticated) to feed bigger industries may easily develop in the fringe areas. But monopoly interests did not allow the growth of such industries on a large scale outside their own circle. Here the State shall have to assert for the sake of the rural industrial growth and development.

Increasing loss of farm lands and jobs:

14.13 With the loss of farm lands a lot of farm hands are becoming idle, who are unavoidably crowding into the towns and cities. Land disputes and economic crimes are mounting at a very fast rate. Only a host of agro-industries in the small and cottage sectors can, to some extent, absorb the surplus rural labour. Cigarette and bidi factory, rice-mill, flour mill, sericulture, cotton handloom, leather, herbal medicine and floriculture industries have not yet been fully developed. But all these ventures will become infructuous, if the
population increase is not checked. The natural growth of population must be reduced considerably. At the same time expansion of existing town areas and establishment of new townships must be kept drastically regulated. Even rural settlements should be allowed to grow vertically, rather than unrestricted spatial growth, which is sucking in valuable farm lands.

14.14 There are many constraints and the agony of the farmers knows no bound. With proper understanding and judicious planning the situation may be vastly improved. Basic research is of paramount importance. The careful planning of this project and scientific analysis of the problems as have been done by this author here may pave the way for a more detailed examination in future. The government and the people have a joint obligation to the farmers of the region.