

BANGLADESH



SUMMARY

Bangladesh is inhabited by about 126 million people in an area of about 147,000 square kilometers and is located within the flood plains of three great rivers, the Ganges, the Brahmaputra and the Meghna. About 93% of the catchments of the country's river system lie outside in the upper region of Bangladesh, but drain the system over its flood plains to the Bay of Bengal. Because of this unique geographic location, the country receives excess inflows in the monsoon months (July - September) causing recurrent floods and suffers due to shortage of water in the dry season (December - April). The current population density of about 850 per square kilometer is already the highest of any nation in the world. It is predominantly an agricultural country and her economy is heavily dependent on agricultural production. During the decade between 1984-85 and 1994-95, the share of agriculture to GDP declined from 41.8 to 32.8%. The projection of employment up to 2020 shows that until then agriculture will continue to be the major source of employment by absorbing over 40% of the labour force.

Bangladesh is very rich in water resources and is blessed with one of the most fertile lands. The country receives a normal annual rainfall from 1200 mm in the extreme west to as high as 5800 mm in the northeast. The average annual rainfall is about 2300 mm. About 81% of this rainfall occurs in the four humid summer months from June to September. Localized rainfall of long duration in the monsoon season often generates localized floods due to inadequate drainage. However, such floods may be catastrophic when combined with runoff carried by the three major rivers from transboundary catchment areas in India, Nepal and Bhutan. Although there is an abundance of available water there is a wide seasonal variation in the quantity of water. The total annual flow of the river systems in Bangladesh is about 1,511,000 million cubic meters of which 1,360,000 million cubic meters (90%) originates outside Bangladesh.

The Bangladesh National Water Policy (BNW) has adopted the approach of basin planning which provides the most rational basis for development of water resources. International river basins, such as the Ganges basin, the Brahmaputra basin and the Meghna basin present special problems to Bangladesh. Due to its location as the lowest riparian, Bangladesh has no control over the rivers entering through its borders. The adverse effects of this are the floods and water scarcity which occur frequently. As a long-term measure, therefore, it is the policy of the government to undertake essential steps for realizing basin-wide planning with other co-riparian countries for management of the water of the rivers entering its borders. Thus the transboundary water management issue is vital for the development of water resource projects in Bangladesh. Although the 1996 Treaty on sharing the dry flows of the Ganges water with India is expected to bring some relief to the drought prone area of the southwest of Bangladesh, the water shortage problem during the dry season will continue to be aggravated in the Ganges and other basins with rising demands of an increasing population.

Water management in the dry season will have to be primarily concerned with the proper exploitation and allocation of water resources. Easily available water has been the sustaining regime of intensive cultivation in Bangladesh. A key development issue is the extent to which this strong growth can be maintained. Overall growth in surface water irrigation has been slow due to a reduced flow in the major rivers. In the case of groundwater, its availability and the future costs of abstraction are uncertain. More groundwater can be made available through the adoption of measures to abstract from greater and greater depths using shallow tube-well technology and finally force-mode tube-wells. Each technology makes more water available, but at increasing cost. Potential linkage, between arsenic and heavy metal abstractions from groundwater, if established, would radically alter the country's, high dependence on groundwater. Among various minor irrigation equipment, Shallow Tube-wells (STWS) covered 2 million ha or about 60% of the total area under irrigation, Low Lift Pumps (LLPS) irrigated 0.57 million ha, or 17% and Deep Tube-wells (DTWS) irrigated 0.54 million ha or 16% of the total area. Non-mechanized irrigation covered 0.28 million ha or 7% of the total irrigated area. The economics of irrigation in Bangladesh indicates that LLP is the most cost effective of all minor irrigation technologies in the country. For LLPs used by farmers, profits were found to be extremely high, STW comes next in terms of rate of return. DTWS, on the other hand are not found to be economically viable, although there are many DTWs in use both in the private and public sectors.

Major irrigation schemes, which account for less than 10% of irrigated land in the country, appear to be least viable among all modes of irrigation. The World Bank estimates show that the ERR (economic rate of return) of such projects ranges between 11% and 12%. They are heavily subsidized and claim about 50% of development expenditure in the agricultural sector. Water charges for major irrigation is very modest compared to minor irrigation and only a fraction is actually realized. Major irrigation schemes, however, have multiple objectives, such as flood control, water drainage, environmental protection and fisheries development, which are often difficult to measure quantitatively as well as qualitatively. But the evidence is clear that the actual cost of irrigation by major irrigation projects is much higher than tube-well irrigation. Furthermore, the chances of cost recovery from large projects is very limited. Fisheries and wild life are integral aspects of economic development in Bangladesh and strongly linked to the advancement of target groups, poverty alleviation, nutrition and employment generation. Availability of water for fisheries is thus important from the point of view of sustenance as well as commercial ventures. This issue needs an integrated management approach.

The population of Bangladesh will be about 180 million by the year 2025. The long term water vision for Bangladesh is to attain food self-sufficiency by then. This will need an unhindered flow in the 57 border rivers during dry seasons. Bangladesh is dependent on agriculture farm level water resources development and management is key to it is rural development. Rural infrastructure includes communication, water supply, health and sanitation needs. The vision is that all these facilities will be available to rural people.

INTRODUCTION

Most of Bangladesh is located within the flood plains of the three great rivers - the Ganges, the

Brahmaputra and the Meghna, along with their tributaries and distributaries. The three rivers drain a total catchment area of about 1.72 million ha of which only 7% lies within Bangladesh. The remaining area lies in India, Nepal, China and Bhutan. Bangladesh is interlaced by a network of about 230 rivers and innumerable canals and water bodies. Of these, 57 are transboundary rivers.

Bangladesh is blessed with the most fertile land in the world and is very rich in water resources. It receives a normal rainfall from 1200 mm in the extreme west to as high as 5800 mm in the north-east. The average annual rainfall is about 2300 mm. About 81 percent of rainfall occurs in the humid summer months between May and October. Lengthy localized rainfall in the monsoon season often generates localized floods due to poor drainage. However, such floods may reach catastrophic proportion when the upstream runoff carried by the three major rivers is combined.

In contrast to the wet season, rainfall during the dry season is low, unreliable and amounts to one-third of the potential evapotranspiration. Farming was traditionally confined to the wet season but demand for grain has risen and outstripped its production capacity. Crops need to be grown throughout the year and supplementary irrigation was introduced in the 1960s for pre- and post-monsoon crops, followed by the development of full irrigation in the 1970s for dry season crops.

Bangladesh is prone to periodic natural disasters like floods, droughts and cyclones. Besides the annual event of normal flooding inundating about 27% of the country's arable area, periodic severe flooding is also common. Over the 1954-1998 period, flooding covered 37% of the land in every tenth year. The record was in 1998 when almost 60% of the country was inundated and the floods stayed for more than two months (Government of Bangladesh, Ministry of Water Resources, 1998).

The country is also periodically affected by cyclonic storms in the coastal districts. The country has over 700 km of coastline on the mainland and several offshore islands in the Bay of Bengal. During the last 125 years, over 42 cyclones have hit the coastal belt; 14 occurred during the last 25 years. Cyclones often take a heavy toll of human life, livestock, crops, property and the physical infrastructure. (World Bank, Coastal Embankment Rehabilitation Project, 1995).

Bangladesh is a deltaic country inhabited by 120 million people over an area of about 1,47,000 square km. The current population density of 813 per square km is already the highest of any nation other than the tiny city-states. With a per capita income of about US\$240, Bangladesh remains one of the poor nations of the World. Progression of a few key social development indicators over a 20 year period gives some idea of the social development status of the country.

Bangladesh is predominantly an agricultural country and her economy is still heavily dependent on her agriculture. Between 1984-85 and 1994-95, the share of agriculture to the GDP declined from 41.8% to 32.8% while the share of the manufacturing and services sectors went up. Despite this, agriculture continues to be the largest provider of jobs as is evident from the Table below.

Table 1. Key Social Development Indicators

Indicators	1975	1995
Population (Million)	80.1	120.3
Population density (person/sq. km)	543	813
Population growth rate (%)	2.57	1.83
Infant mortality rate (per 1000 live births)	140	78
Life expectancy (years) Urban population (as % of total population)	46 8.8	58 22
Growth rate of urban population	4.25	6.09
Access to safe water (%) of population	56	76
Persons per hospital bed	5110	3450
Persons per physician	11350	4870
Adult literacy % (national)	25.8	47.3

Source : Government of Bangladesh, Ministry of Planning March 1998.

Table 2. Structural Change and Employment 1984-1995

Sector	Composition of GDP (percent)		Employment (million)
	1984-85	1994-95	1994-95
Agriculture	41.77	32.77	30
Industry	9.86	11.36	7
Electricity, Gas & Natural Resources	0.58	1.86	-
Construction	5.53	6.33	-
Transport and Communication	11.22	12.17	-
Trade & other services	19.82	22.98	10
Housing Services	7.97	7.45	-
Public Services	3.25	5.08	-
Education	-	-	2

Source : Government of Bangladesh. Ministry of Planning, March 1998 and World Bank and Bangladesh Center for Advanced Studies 1998.

Bangladesh has an estimated 25,000 km of river channels. Half a century ago, all these were navigable year round. During 1956-88, it is estimated that the annual average sediment load entering Bangladesh and conveyed to the Bay of Bengal via the main rivers is about 1.1 billion tons with a range of 0.75-2.2 billion tons. A part of this sediment load is deposited on the flood plains during the flood season, gradually changing its topography and drainage conditions. The inland waterway networks have thus been reduced during the dry season to only 3,800 km. Similarly the two seaports suffer from draft problems requiring lighterage to carry cargo to jetties. (Government of Bangladesh, Ministry of Planning, 1998).

The scope of inland water transport has further been reduced by a vigorous program of rural road construction. It is estimated that by June 1997, there were about 3,000 km of national highways, 2,000 km of regional highways, 11,500 km of Feeder A, 14,400 km of Feeder B and 87,000 km of other rural roads. Of these, the length of paved roads is about 21,000 km. Apart from these road networks, there are about 12,000 km of paved roads in metropolitan and other cities. Embankments and rural roads were not, in most cases, designed carefully to ensure a free and unobstructed flow of water and to meet the needs of drainage, navigation and fisheries.

LAND AND WATER

Land and water are the two most important resources for the overall development of Bangladesh. Land is indeed a very scarce resource in a country with a population density of 813 per sq.km. By 2020, even with a steady decline in fertility, the population is due to reach 170 million and density will increase to 1200 people per sq.km. Dhaka, the capital city, with over 125,000 people per sq.km. already ranks as the third densest urban center in the world after Hong Kong and Lagos.

Agricultural land is becoming scarcer each year. There is a need for a sound classification system of land on the basis of its productivity. Nationwide land classification data could then be used by planners for zoning purposes. In the absence of such policy prime agricultural land in Bangladesh in many cases has been used for setting up cantonments, industrial estates and other non-agricultural uses. In these cases the opportunity costs of alternative uses were never examined.

Of the total land area of 14.7 million ha, arable land in Bangladesh amounts to around 9.0 million ha, about 61 percent of the total land area. During the past decade, through expansion of irrigation and the use of other modern inputs, Bangladesh has been able to achieve a cropping intensity of nearly 180%. Of the total cultivable land, 7.56 million ha are suitable for irrigation, but so far only 3.83 million ha have been brought under irrigation. Similarly, Bangladesh farmers use less fertilizer than recommended. Thus wide gaps exist between potential and realized yields for all crops. (World Bank and Bangladesh Center for Advanced Studies, 1998).

Available data on broad categories of land during 1974 to 1996 show (Table 3) that in the past 25 years land under "not available for cultivation" has increased from 19% in 1974 to 27% in 1996. It can be safely presumed that most of this land has been used for non-agricultural purposes such as urban development and construction of various infrastructure.

Table 3. Land Use in Bangladesh 1974-1996

Nature of Land Use	Area in '000 ha			Percentage of Total		
	1974	1990	1996	1974	1990	1996
Cultivated Crop Land	8,489	8,827	7,802	59%	58%	53%
Currently Fallow	627	288	392	4%	2%	3%
Cultivable Idle Land	272	267	531	2%	2%	4%
Forests	2,229	1,858	2,151	16%	12%	14%
Not Available of Cultivation	2,661	3,934	3,961	19%	26%	27%
Total	14,278	15,184	14,839	100%	100%	100%

Source : Ibrahim Khalil, 1991 and Bangladesh Bureau of Statistics, 1998

River-bank erosion, migration of river-banks and meandering river channels are causing loss of land. Recent satellite image studies of the Ganges-Brahmaputra-Meghna rivers under the Flood Action Plan show that while over the period 1982-92, 106,300 ha were lost to erosion, only 19,300 ha were accreted. Thus there has been 87,000 ha lost to erosion, equivalent to an annual erosion rate of 8700 ha per annum, most of it agricultural land (World Bank, River Bank Protection Project, 1995a).

Under such scarce conditions, the need for planning based on a sound land use policy cannot be ignored any more. The increasing population will need additional rice and wheat by 2025. The days of planning for agricultural production only without taking into account the growing need of other competing sectors are over. Crop production will have to relinquish land in favour of emerging other sectors.

CROP PRODUCTION AND URBANIZATION

From a base of 24 million people in 1996, Bangladesh's urban population is expected to reach 30 million at century's end, about 50 million by 2010 and nearly 80 million in 2020. Probable loss of cultivable land to such alternative use as housing and other infrastructure to support urbanization would be enormous.

CROP PRODUCTION AND WATER-RELATED INFRASTRUCTURE

Flood control, drainage and irrigation projects require huge quantity of land for construction of embankments, irrigation/drainage channels and other infrastructure. So far only the Bangladesh Water Development Board (BWVDB), the principal water sector agency, has acquired 75,000 ha of land for such purposes. Railways and roads have used five times the quantity of land used by the BWVDB.

CROP PRODUCTION AND FISHERIES

There are many examples where rich wetland and inland water bodies have been turned into single cropped land. The reverse conditions exist in the coastal area where shrimp farming areas have been created by destroying paddy fields. Conversion of land to shrimp-farming is a non-reversible process and constitute a permanent loss to crop production.

CROP PRODUCTION AND FORESTS

Forest cover in Bangladesh is about 60% now, which is much below the recommended cover. The forest cover has doubled over the past 25 years. It is further estimated that 76,000 ha of land is under encroachment as of 1993. There is a possibility that part of it will meet the need of human settlements and part will be used for agriculture and other purposes. The forest cover is expected to increase in the next 25 years due to afforestation.

WATER RESOURCES

The notion of an abundance of water in Bangladesh is somewhat misleading. There is a wide seasonal and regional variation in the quantity of water available. During the wet season (June to October), there is plenty of water, the rate of flow depending on the amount of snow-melt in the Himalayas and rainfall in the entire catchment area of the rivers (Bangladesh-Nepal Joint Study Team, 1989). Statistics reveal that major flooding occurs in one out of ten years. The opposite happens in the dry season (November to May). In nearly half the years the average rainfall is so low and the flow of rivers so reduced that in certain areas of Bangladesh this situation seriously disrupts economic life. The southwestern region of Bangladesh which is solely dependent on the Ganges waters for its sustenance and has been facing major environmental hazards since the operation of the Farakka barrage in 1975 upstream. However, the environmental hazards are in the process of elimination after the Ganges Treaty of 1996 through guaranteed flows and restoration of the Gorai.

Groundwater related quality issues especially the arsenic problem, are gradually becoming important. Many of these problems are less evident to the general population than the more visible quantity-related issues. The preservation of water quality has direct implication for water supply as water quality determines effective water availability. A minimum quantity of water is required to maintain the assimilative capacity of a water body to receive effluents and to guard against contamination.

Water is polluted in Bangladesh in several ways as discussed below. Until recently, there has been no regular program of water quality monitoring. A baseline survey came out recently and several public agencies are now undertaking detailed surveys of tube-wells. (Government of Bangladesh, Ministry of Water Resources, 1998a). It is expected that a strong database on the quality parameters of surface and groundwater, will be available in due course. However a fairly good database and an assessment have been made for water resources of Bangladesh under Flood Plan Action.

TOWARDS A WATER VISION

In Bangladesh, the strategy of water resources development has so far pivoted around flood control and irrigation expansion to promote food grain production. Not denying the importance of food production and food security it is now widely recognized that conflicts among alternative and competitive uses of water are becoming sharper as population and demand for limited supplies of water are increasing. It is, therefore, necessary to formulate a long-term vision for integrated water resource management (IVA) to address the demands of all water-using sectors and maintain a sustainable environment. Hence, the water vision should reflect, in a holistic manner, a clear perspective of the management of the water ecosystem in the country by taking into account seasonal variations in availability, alternative uses and demands, mechanisms of water supply and demand management strategies, and the guidelines of the National Water Policy. A National Water Management Plan (NWNV) is underway in light of the policy.

It is assumed that by 2025 most of the actions/schemes under the NWW will have been implemented or in the process of implementation. Based on this premise and the need to balance population growth, water demand for food, rural development and the strategic components of a long-term vision are briefly presented below.

a. Integrated flood mitigation

Since flood is a recurrent phenomenon in Bangladesh and with two-thirds of the country being vulnerable to flooding, a balanced and rational approach to flood management is essential. The approach should consist of a combination of structural and non-structural methods to mitigate flood damages and at the same time, retain the beneficial effects of inundation. However, flood mitigation measures must not be considered in isolation of other components of water resource development. These should be part of an integrated water management plan, along with food production, environment, fisheries, drainage, navigation and household supply.

Flood mitigation measures should also be addressed in the regional context. Bangladesh, being the lowest riparian in the Ganges, the Brahmaputra and the Meghna systems, faces the fury of floods - although all other countries in the region also suffer from flooding of different levels of severity. Hence, there is a need for active cooperation amongst the countries of the GBM region for flood management. A comprehensive scheme of collection, transmission and exchange of real time relevant data among the GBM countries will promote efficiency in flood forecasting and disaster preparedness in Bangladesh.

b Supply augmentation

There is no suitable site for a reservoir within Bangladesh. Hence, storage potential for dry season augmentation or any other purpose is nil. However, the Ganges Water Treaty with India signed in December 1996 has provisions for Bangladesh to receive an agreed quantity of water in the dry season (Jan-May) for a 30-year period. Taking advantage of this Treaty, the issue of constructing a barrage across the Ganges for harnessing the available waters needs to be addressed on an urgent basis. Earlier studies have indicated that a Ganges Barrage would increase irrigation potential, increase food production, rejuvenate the Gorai and other streams, push the salinity front southward, and help in the conservation of the Sundarbans. Augmenting of supplies of surface water through sub-regional cooperation in water sector developments may be initiated. The scope of augmenting the Ganges flows through the construction of reservoir in Nepal and Bhutan should be examined to bring significant benefits to Bangladesh in terms of flow augmentation. Bangladesh can collaborate with Nepal, India and Bhutan in the construction of dams for mutual benefit.

c Sharing of Common rivers

Of the 57 transboundary rivers, Bangladesh has an agreement for water sharing with the upper riparian, i.e., with India in the case of the Ganges only. Efforts to reach an agreement for sharing waters of other common rivers should form part of the national water vision so that the country is assured of an adequate supply during lean seasons.

d Irrigation expansion

Future increases in food grain demand could be met from an increase in per acre yield; and an expansion of the irrigated area would form a part of the strategy to augment land productivity. Some 71 percent of irrigation water is now sourced from groundwater, which is likely to continue to be the major source of irrigation water for dry seasons and pre-monsoon cropping. But fears are expressed about unregulated ground water exploitation or water mining being responsible for the lowering of the water table in many instances leading to the advocacy of a switch from suction mode STW to force mode DTW. Recent estimates by the National Minor Irrigation Development Project (NMMP) suggested that by setting STWs at progressively greater depths, this technology could continue to expand. On the basis of the NNVND estimates of groundwater quantity and quality, a strategy has to be defined for the next 25 years in deciding on the main mode and rate for irrigation expansion.

Table 4 shows the growth of irrigation areas since 1982 in Bangladesh. The technology used for irrigation is those of canal, LLP, Traditional, Manual, DTW and STW.

Table 4. Growth of irrigation area since 1982

Irrigation Season	Irrigated area (million ha)	% by water source	
		Ground Water	Surface Water
1982-83	1.52	40.8	59.2
1983-84	1.61	47.2	52.8
1984-85	1.77	50.2	48.8
1985-86	1.74	52.1	47.9
1986-87	1084	52.9	47.1
1987-88	2.06	54.0	46.0
1988-89	2.38	56.2	43.8
1989-90	2.58	55.8	44.2
1990-91	2.79	55.3	44.7
1991-92	2.75	63.0	37.0
1992-93	2.96	65.1	34.9
1993-94	2.94	64.8	35.2
1994-95	3.31	69.3	30.7
1995-96	3.73	69.1	30.9
1996-97	3.79	71.0	29.0
1997-98	3.83	70.7	29.3

Source: National Minor Irrigation Census 1997/98 BWDB estimates

URBAN DEVELOPMENT

Rapid urbanization will continue to be a dominant phenomenon in Bangladesh over the next 25 years. In the absence of a coherent strategy, a chaotic situation could develop in terms of services and governance. Currently the urban population accounts for about 20 per cent of the total national population- and it is growing at an average annual rate of about six per cent. Even with an assumption of slightly decreasing rate of growth in the next decade, the proportion of the urban population will reach 33 per cent in 2010, 47 per cent in 2020.

RURAL DEVELOPMENT

The Government's rural development program, which had its origin in the early 1960's, was conceptualized essentially as an instrument for providing support for increasing agricultural production. The rural development model emphasized the formation of co-operatives and the integration of support services provided by government departments. The model had four major elements:

- Two-tier Co-operative-Krishak Samabaya Samity (KSS) and the Thana Central Co-operative Association (KCCA)
- Rural Works Program (RWP)
- Thana Irrigation Program (TIP)
- Thana Training and Development Centers (TTDC)

Strategy for Rural Development Projects

The Government of Bangladesh (GOB) formulated and adopted the Strategy for Rural Development (RD) Projects in 1984. The strategy includes, among others, that the RD Projects will have a combination of three components:

- Development of physical infrastructure including roads, storage and markets
- Irrigated agriculture, minor drainage and flood control works
- Production and employment for the rural poor (rural poor will be the land less and those having land up to 0.50 acres)

Agencies responsible for the implementation of the three components of RD projects

- For development of physical infrastructure: Local Government Bodies with technical assistance from the Local Government Engineering Department (LGED) o For development of irrigated agriculture etc: The Local Government Engineering Department and the Ministry of Agriculture in association with the Thana/Upazila Parishad.
- For production and employment programs: The Bangladesh Rural Development Board (BRDB) in collaboration with the Thana/Upazilia Parishad and other concerned agencies will work for creating employment opportunities. The Non- Government Organizations (NGO's) will also take up activities in areas not covered by BRDB.

The above strategy has been followed during the Third and the Fourth Five Year Plan (FFYP 1990-95) of Bangladesh.

Performance During Fourth Five Year Plan (1990-95) are shown in Tabular form in Table 5.

The allocation for RDI sector during FFYP was Tk. 25,622.20 million against which an amount of Tk.21,823.5 million was utilized.

PERFORMANCE DURING 1995/96 AND 1996/97

All the three major components, i.e., production and employment program, infrastructure development program and irrigation related infrastructure were under implementation during 1995/96 and 1996/97. Under the production and employment programs, employment for 0.39 million persons was created. These were mostly self-employed members of the various formal and informal groups. Under the infrastructure construction program, 2.856 km of metalled roads were constructed in addition to 20,800 metres of bridges and culverts. Apart from these, 163 Growth Centers were developed by constructing sheds, internal roads and lanes in the hats and bazars. An amount of Tk. 17689 million was provided in the ADPs for 1995/96 and 1996/97.

Table 5. Targets and Achievements of Major Programs for Rural Development and institutions During Fourth Plan (1990-95)

Program	Unit	Targets	Achievements
A. PRODUCTION AND EMPLOYMENT PROGRAM (PEP)			
Formation of primary societies/group	Number	23,581	16,882
Enrolment of members	Number	529,621	777,660
Skill training	Number	166,695	616,800
Shares/saving	Million taka	159.6	449.33
Credit	Million taka	330.3	3,019.15
Realization of Credit	Million taka	-	2,559.15
B. SMALL FARMERS DEVELOPMENT PROGRAM (SEDP)			
Formation of groups	Number	1,982	5,625
Enrolment of members	Number	12,145	35,597
Share/Savings	Million taka	7.3	30.4
Disbursement of Credit	Million taka	60.7	166.4
Development of Physical Infrastructure			
Development of Growth Center	Number	316	277
Development of Feeder Road Type-B	Km	2,399	3,709
Construction of Bridge and Culverts	Metre	15,039	41,987
Rehabilitation of flood/cyclone	Metre	15,059	
Rehabilitation of flood/cyclone damaged pucca roads	Km	2,929	2,574
C. IRRIGATED AGRICULTURE AND IRRIGATION MANAGEMENT PROGRAM (IMP)			
IMP coverage (DTW)	Number	1,556	1,499
IMP coverage (LLP)	Number	207	156
IMP training	Persons	8,555	6,215
D. EMPLOYMENT GENERATION			
Infrastructure Program	M person-days	133.1	112.0
Self-employment under PEP	Million persons	0.53	9.78

FIFTH FIVE YEAR PLAN (1997-2002)

The following are the objectives of the Fifth Five Year Plan for the RDI Sector:

- a. reduction of poverty in the rural areas;
- b. productive employment generation in the rural areas;
- c. self-employment creation for the rural poor;
- d. Development of rural infrastructure; and
- e. Development of small and landless farmers.

STRATEGIES

The elements of the strategy for achievement of the above objectives will include, among others, the

following :

- a. provision of skill training mostly for self-employment in non-farm sectors;
- b. formal and informal group formation and group development for co-operative activities;
- c. resource mobilization through individual/group savings;
- d. creation of enabling environment for availing of credit facilities;
- e. social mobilization for awareness creation on various aspects of rural life;
- f. development of small and landless farmers;
- g. development of rural infrastructure such as growth centers, and roads, bridges and culverts connecting such centers;
- h. provision of small irrigation and flood control related infrastructure;
- i. preventing destitution through rural maintenance program; and
- j. covering at least one full administrative district under any project with one or more of the program components of productive employment, rural infrastructure and small-scale irrigation and flood control infrastructure to find out the replicability.

Projections for RDI sector during the Fifth Five-Year Plan are shown in Table 6

Table 6. Projection for development of RDI in Public Sector During Fifth Plan

Program	Unit	Projection
Productive employment generation	Million person	1.3
Employment under infrastructure program	Million person-days	175
Growth center development	Number	600
Feeder Road Category-B	Kilometre	7,000
Rural Road	Kilometre	15,000
Bridges and Culverts	Metre	100,000
Small Scale Water Management Related Infra.	Kilometre	1,000
- Embankment	Kilometre	4,000
- Khal/Canal	Kilometre	350
Water Control Structure		
Maintenance of Physical Infrastructure	Kilometre	10,000

FINANCIAL OUTLAY DURING FIFTH PLAN

An amount of Tk. 87,002 million has been projected for the development of RDI in the Public Sector. The program-wise break up of the outlay is shown in Table 7.

Table 7. Public Sector Financial Outlay for Development of RDI During Fifth Plan

Program	Financial Outlay
Production and Employment Program (PEP)	20,000.00
Infra. Dev. Program (including irrigation related infrastructure)	56,000.00
Other Programs (including special programs and action research)	11,002.48
Total	87,002.48

ROLE OF NGOs AT A GRASS ROOT LEVEL DEVELOPMENT

During the FFYP, the number of non-government organizations (NGOs) also increased throughout the country. The process was helped by easy availability of donor funds for NGOs. The donors supported the NGOs to supplement the government's delivery system to reach the poor, and to play a more creative role to make - them conscious. This argument created an indirect pressure on the government to make its delivery system to be more efficient. The resultant competition between the GOs and NGOs to reach the poor brought the questions of cost-effectiveness, transparency and accountability of using public fund under sharper focus.

STRATEGIES FOR PARTICIPATORY PLANNING DURING FIFTH PLAN

Alleviation of poverty and employment generation is the central objectives of the Fifth Plan. Given the market failure, the public sector must play the role of a catalyst in associating the vast segment of the populace who are under privileged and often are left out of the development process. Local level participatory planning, therefore, will start with building a mechanism where people, at large, especially in the vast expanse of the rural areas, will provide inputs to the planning process of the country. People at the grass root level, through conscience building, consultation and participation, will get the scope of determine the local needs and priorities and integrate them into an overall planning exercise of the country through their elected local bodies.

WOMEN IN DEVELOPMENT

Women constitute about 49 percent of the population. Various indicators reveal that the status of women is much lower than that of men. According to a 1995/96 survey, of the 56 million labour force, only 21.3 million are female. Women are generally pushed into the unskilled labour force.

The shared responsibility for women's equality and development is strongly emphasized in the Beijing Platform for Action, which was endorsed by the Government of Bangladesh in September, 1995. The Fifth Five-Year Plan of Bangladesh will be people centered. The main aim of the Plan is to integrate women's development into the macro framework and to reduce gender disparity in all sectors through integration of women into the main stream development efforts. A major thrust of the Plan will be on developing skills of women with the aim to yield a sustainable increase in productivity of the existing women labour force and opening up new windows of opportunities for future entrants into the labour force.