

CHAPTER – VIII

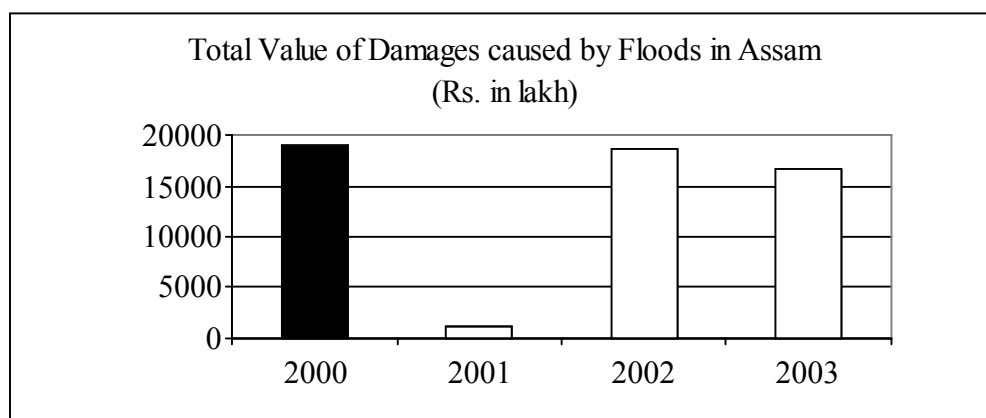
FLOOD AND FLOOD CONTROL MEASURES

8.1.0. The recurrence of flood and erosion continued to be the burning problems of Assam. The State of Assam covers an area of 78,438 Sq. Km. and consists of two valleys viz., the Brahmaputra Valley and the Barak Valley. The Brahmaputra and Barak are the two main rivers, which cause major problems during the monsoon period of every year in the shape of flood, bank erosion and drainage congestion. In fact, the successive waves of devastating floods in almost every year have virtually destroyed the economy, more particularly, the rural economy of the State. The main factors causing extensive floods are the adverse physiography of the region, heavy rainfall, excessive sedimentation, frequent occurrence of earthquakes, hill/ land sliding, reduction of forest area and encroachment of the riverine area. Usually Assam experiences incessant rainfalls during the monsoon season, which normally commence from the month of May and remain till mid October. Apart from this, occurrence of floods in Assam has direct correlation with rainfall in the catchments areas of neighbouring states of Arunachal Pradesh, Meghalaya, Mizoram, Nagaland and the adjacent country of Bhutan.

8.1.1. In Assam, the flood and erosion cause enormous damages to the crops, livestock, land, property and bring untold miseries to the people at large. The major flood that had occurred in the State was in 1954, 1962, 1966, 1972, 1977, 1984, 1988, 1998, 2002 and 2004 though the flood of less magnitude occurs almost every year. The National Flood Commission had estimated the area vulnerable to floods in Assam as 31.60 lakh hectares against 335.16 lakh hectares for whole India. Assam thus accounts for 9.4 per cent of total flood prone area of the country. As a result, the State has not been able to achieve the desired progress and prosperity, in spite of having vast natural resources. Flood in three to four waves is an annual feature, which very often wipes out major chunk of the fruits of the people's labour. During the year 2003, a total of 932.11 thousand hectares of area were affected by floods resulting heavy damages, the value of which is estimated at Rs.16,569.22 lakh. However, the affects of flood during 2004 was more severe as the area affected is estimated at 3142.68 thousand hectares, resulting huge loss to standing crops besides loss of 497 human lives and 65967 cattle heads. The table 8.1 shows the extent of damages caused by flood in the State over the last five years.

Item	Unit	2000	2001	2002	2003	2004
1	2	4	5	6	7	8
1. Area effected	Hectare	966053.00	239511.00	674148.00	932113.00	3142685.40
2. Population affected	No.	3888385	542634	755058	5651954	13493394
3. Human lives lost	No.	36	4	6	5	49
4. Loss of Cattle	No.	19988	1	429	431	6596
5. Villages affected	No.	5090	127	680	756	1223
6. Area eroded	Hectare	.	5348.00	429657.00	12589.60	7829.7
7. Value of crop loss	Rs. in lakh	17351.57	835.71	14559.9	14700.00	-
8. Value of houses damaged	Rs. in lakh	1648.45	259.41	4118.6	1869.2	-
9. Total value of damages	Rs. in lakh	19000.02	1095.21	18678.60	16569.2	-

Source : Water Resources Department, Assam.



FLOOD CONTROL MEASURES:

8.1.2. In order to prevent the menace of recurring floods, different flood management schemes/projects are in operation in the State. The Table 8.2 shows the achievement under various flood control programmes in Assam.

TABLE-8.2
ACHIEVEMENT UNDER VARIOUS FLOOD CONTROL PROGRAMMES IN ASSAM

Item	Unit	Upto the end of 8 th Five Year Plan	Upto the end of 9 th Five Year Plan	2002-2003	2003-2004	Total
1	2	3	4	5	6	7
1. Embankments and R/S	Km.	4448.00	4458.60	1.10	0.75	4460.45
2. Drainage channels	Km.	850.69	850.69	Nil	Nil	850.69
3. Protection and Anti Erosion Work	No.	629	681	4	2	687
4. Major Sluices	No.	85	85	Nil	Nil	85
5. Benefited Area	Lakh Hect.	16.17	16.181	0.001	0.001	16.183
6. Retirements	Km.	-	47.47	-	-	47.47

Source : Water Resources Department, Assam.

8.1.3 Achievement of flood control measures and expenditure made in Assam under different heads by Water Resources Department during the last six years are shown in tables 8.3 to 8.7.

TABLE-8.3
ACHIEVEMENT

Year	Embankment and R/S (Km.)	Retirement (Km.)	Anti-Erosion Works (No.)	Drainage (No.)	Benefited area (Hectare)	Expenditure (Rs.in lakh)
1	2	3	4	5	6	7
1998-1999	2.00	23.275	10	Nil	300	1301.65
1999-2000	2.00	1.750	7	Nil	1000	1606.38
2000-2001	2.00	-	7	40% of 1 No.	200	1635.00
2001-2002	2.10	-	14	-	200	800.00
2002-2003	1.10	-	4	Nil	100	941.22
2003-2004	0.75	-	2	Nil	100	878.79

Source : Water Resources Department, Assam.

TABLE-8.4

ACHIEVEMENT UNDER CENTRAL LOAN ASSISTANCE		
Year	Achievement	Expenditure (Rupees in lakh)
1998-1999	48 Nos. of schemes in progress.	1800.00
1999-2000	48 Nos. of schemes on the verge of completion	750.00
2000-2001	8 Nos. of Schemes physically completed, 36 Nos. of Schemes on the verge of completion	1129.67
2001-2002	4 Nos. of schemes physically completed	NIL
2002-2003	39 Nos. on-going schemes	NIL
2003-2004	37 Nos. on-going schemes	Rs.150.00 (ACA)
Source : Water Resources Department, Assam.		

TABLE-8.5

ACHIEVEMENT OF SCHEMES UNDER NON-LAPSABLE CENTRAL POOL OF RESOURCES		
Year	Achievement	Expenditure (Rupees in lakh)
1998-1999	25 Nos. of schemes costing Rs.64.074 crore taken up.	500.00
1999-2000	R/S - 314 Km. , Embankment - 5.994 Km. , A/E - 3 Nos.	500.00
2000-2001	25 Nos. of ongoing schemes	500.00
2001-2002	25 Nos. of on-going schemes	500.00
2002-2003	28 Nos. of on-going schemes	2525.00
2003-2004	28 Nos. schemes (13 Nos. physically completed and another 15 Nos. at various stages of completion)	2618.00
Source : Water Resources Department, Assam.		

TABLE-8.6

ACHIEVEMENT UNDER N.E.C. SCHEMES		
Year	Achievement	Expenditure (Rupees in lakh)
1998-1999	4 Nos. of schemes costing Rs.13.10 crore has been taken up	40.00
1999-2000	3 Nos. of schemes on the verge of completion	55.00
2000-2001	2 Nos. of Schemes completed both physically and financially, 1 No. of Scheme on the verge of completion.	49.87
2001-2002	1 No. of Scheme completed	179.60
2002-2003	1 No. ongoing scheme and 2 Nos. new schemes and survey schemes for small projects	NIL
2003-2004	1 No. ongoing scheme and 2 Nos. new schemes	100.00
Source : Water Resources Department, Assam.		

TABLE-8.7

ACHIEVEMENT UNDER JRC SCHEME		
Year	Achievement	Expenditure (Rupees in lakh)
1998-1999	3 Nos. of Schemes on the verge of completion	55.00
1999-2000	4 Nos. of Schemes on the verge of completion	105.20
2000-2001	2 Nos. of Schemes completed but financial liabilities to be cleared. 2 Nos. of schemes on the verge of completion	105.00 (Upto March/2000)
2001-2002	1 No. of scheme physically completed	44.25
2002-2003	1 No. of on-going scheme on the verge of completion	35.75
2003-2004	1 No. of scheme physically completed. 2 Nos. of ongoing schemes and 1 No. of new scheme	26.33
Source : Water Resources Department, Assam.		

Under Water Resources Department, Assam 251 Nos. of Flood Damage Repair (FDR) Schemes involving an amount of Rs.7870.93 lakh were taken up in different districts during the year 2003-2004.

By, adopting short-term measures, the State Water Resources Department has protected 16.183 lakh hectares of land from flood and erosion out of 31.60 lakh hectares of flood prone areas. For effective management of flood and erosion in the valley, long term measures in the form of storage reservoir in the upper catchments areas of the river basins and watershed management are considered very essential.

8.1.4 Damage due to flood of 2004:

All the 27 districts of Assam were affected by floods of 2004. Out of these 10 Nos. of districts namely Kamrup, Nalbari, Darrang, Sonitpur, Tinsukia, Dhemaji, Nagaon, Morigaon, Dhubri and Lakhimpur are the worst affected districts. The flood have caused large inundation wide spread devastation to standing crops, homestead, life and property, disruption of road and rail communication, public utilities, water supply installation, irrigation structures and flood control structures etc. The world famous Kaziranga National Park with its animal populations has been affected badly. The National Park of Manas, Orang and Dibru-Saikhowa along with Wild Life Sanctuaries Burha Chapari, Pobitora, Laokhowa and Barnadi have been affected by the floods. The National Highways/State Highways have been overtopped at several places. Bridges have been collapsed at several places of the National Highway.

This year floods have bearings of the failure of dams constructed in the upstream of Manas river in Bhutan and Kopili river in Assam.

8.1.5 Artificial lake formed at the U/S of Kurichu Hydel Project:

On the 10th July 2004, at 5.30 P.M. the artificial lake which was formed at about 30 KM upstream of Kurichu Hydel Project in Bhutan gave way due to retention of successive rain water and the entire volume of water rolled down with tremendous velocity through the Kurichu river (Manas-Beki-Aie river system) and finally entered into the Indian territory at Mathanguri and created havoc downstream with inundation and avulsion. Barpeta district is the worst affected due to avulsion of Beki river.

8.1.6 Kopili Hydel Project on river Kopili:

Due to excessive rainfall in the upper catchments of the Kopili river, the reservoir of Kopili Dam Project (NEEPCO) was filled up on 21-07-2004 and the excess water had to be released down stream. As a result the entire Kopili embankment system got overtopped resulting in breaches and causing wide spread devastation in Nagaon and Morigaon districts. The embankment system of Kolong river got breached at 69 locations while the embankment system of Kopili river got breached at 93 locations.

Besides, these large numbers of breaches as many as 336 Nos., there are large-scale erosion at numerous places by the river Brahmaputra and its tributaries.