

CHAPTER – VI

IRRIGATION

Irrigation is the main input of Agricultural economy of the State. To cope with the growing problem of food shortage due to formidable increase of population and natural calamities etc., multiple cropping, modernization of agricultural practices in agricultural sector is highly essential. For a sustained development in the agricultural sector availability of assured irrigation facility is undoubtedly the most important prerequisite. Thus, the importance of irrigation development bears special significance in the context of efforts towards economic development of the State.

Out of the total geographical area of 78.44 lakh hectares, the Gross Cropped Area of Assam is 39.99 lakh hectares. Against this, the ultimate irrigation potential i.e. the ultimate Gross Irrigation Potential (Annually Irrigable Area) has been estimated at about 27 lakh hectares, which constitutes 67.5 per cent of the Gross Cropped Area. Out of the estimated ultimate Irrigation Potential of 27 lakh hectares necessary plan has been taken up to irrigate 10 lakh hectares through Major and Medium Irrigation projects from surface water sources and 17 lakh hectares through Minor Irrigation Schemes (including ground water schemes).

The development programmes for improvement of irrigation facility in Assam taken up under two broad heads, viz., Major & Medium Irrigation and Minor Irrigation. While the Irrigation Schemes are classified as Major, Medium and Minor, they are categorised as Surface Flow, Surface Lift (For Major / Medium and Minor) and Ground Water Lift (for Minor only). Three Departments, viz. Irrigation, Agriculture and Panchayat and Rural Development are associated with development of irrigation facilities in the State. While the Irrigation Department, being the Nodal Department for development of irrigation in the State, executes and maintains Major, Medium and Minor Irrigation Schemes, the irrigation works of the other two departments are confined to Minor Schemes like Shallow Tube Wells, Low Lift Points and Temporary Minor Irrigation Schemes only.

Out of the Gross Cropped Area of 39.99 lakh hectares of the State the Irrigation Department created potential of 7.76 lakh hectares up to 2009-10 of which 2.39 hectares through Major & Medium Irrigation Projects and the rest 5.37 lakh hectares Minor Irrigation Schemes including the Shallow Tube Wells and Low Lift points implemented through Assam State Minor Irrigation Development Corporation (ASMIDC) Limited. The position of creation of irrigation potential under different sectors is shown below.

Department/ Agency	Gross Irrigation Potential Created upto 2009-10 (in hectares)		
	Major & Medium Irrigation Sector	Minor Irrigation Sector	Total
Irrigation Department	239239	387470	626709
ASMIDC	NIL	149205	149205
Total	239239	536675	775914

Source: Chief Engineer, Irrigation Department, Assam

Creation of Irrigated Area and Utilisation of Potential

During 2006-07 and subsequent years the State irrigation Department undertake various irrigation schemes in the State under Accelerated Irrigation Benefit programme (AIBP) funded by the Government of India. At present 727 minor irrigation schemes are under progress of which 173 schemes have been completed achieving 67021 hectares of irrigation potential (including revival of lost potential). Remaining 554 schemes are expected to be completed by 2012-13 through which 260045 hectares of irrigation potential will be achieved. Apart from this 2(two) Major/Medium Irrigation Projects viz., Pahunara Irrigation Project and Modernisation of Jamuna Irrigation Project have been completed with the fund received under the AIBP during the year 2007-08 and 2008-09 respectively. These two projects help in achieving a potential of 11751

and 11700 hectares. At present 4(four) Major/Medium Irrigation Projects are in ongoing stage and 47132 hectares irrigation potentials have been achieved including revival of lost potential. These 4(four) projects are expected to be completed by 2011 to achieve balance potential of 79844 hectares.

The utilisation of irrigation potential in respect of State Government owned irrigation projects/schemes under Irrigation Department during the first three years of XIth Five Year Plan period is shown below:

Year	Irrigation Potential Utilised (Figures in hectares)								
	Kharif crops season			Rabi & Pre-Kharif crops season			Total		
	Minor	Major/ Medium	Total	Minor	Major/ Medium	Total	Minor	Major/ Medium	Total
2007-08	41795	32668	74463	10486	4322	14808	52281	36990	89271
2008-09	40775	34902	75677	10923	9071	19994	51698	43973	95671
2009-10	77495	70274	147769	11178	9907	21085	88673	80181	168854

Source: Source: Chief Engineer, Irrigation Department, Assam

It is pertinent to mention that the utilisation of irrigation potential is not upto the mark and there is a gap between the created irrigation potential and potential actually utilised. The primary reason of less utilisation of irrigation potential is that that the cultivators are reluctant to take advantage of irrigation facilities. In order to encourage the farmers to go for multiple cropping, Farmers' Motivation Training Programmes are conducted from time to time.

Review of Annual Plan 2008-09

Major/Medium Irrigation

Plan allocation for 2008-09 for Major/Medium Irrigation sub-sector was ` 8730.00 lakh. This included ` 5530.00 lakh as AIBP component, ` 1200.00 lakh as State Plan component and ` 2000.00lakh from NABARD funding. Actual expenditure under AIBP funding during the year was ` 6223.94 lakh and potential achieved was 8795 hectares.

The physical target for Annual Plan 2008-09 was 25,658 hectares. Moreover a target of 5000 hectare had been fixed as revival of lost potential from NABARD scheme viz., Modernisation of Sukla Irrigation Project which however, will rise to 24400 hectares as revival of lost potential on completion.

Further, for restoration of one sick completed Medium Irrigation Project viz., Improvement of Rupahi Irrigation Project was taken up for execution under Assam Bikash Yojana with a proposed allocation of ` 80.00 lakh during 2008-09.

Minor Irrigation

The approved outlay for Annual Plan for 2008-09 of Minor Irrigation Sector was ` 4132.00 lakh. This includes AIBP component of ` 2877.00 lakh. The allocations for TSP & SCSP are ` 325.00 lakh and ` 730.00 lakh respectively.

The physical target for Annual Plan 2008-09 was 14379 hectares. Moreover, a target of 7775 hectares is kept for creation of additional potential, under assistance from NABARD.

Review of Annual Plan 2009-10

Major/Medium Irrigation

Plan allocation for 2009-10 for Major/Medium Irrigation sub-sector was ₹ 8400.00 lakh. This includes ₹ 5400.00 lakh as AIBP component, ₹ 1000.00 lakh as State Plan component and ₹ 2000.00 lakh as NABARD funding.

The physical target for Annual Plan 2009-10 was 74,786 hectares. Moreover a target of 24,400 hectare has been fixed as revival of lost potential from NABARD Scheme viz., Modernisation of Sukla Irrigation Project.

Under Assam Bikash Yojana, the work of Improvement of Rupahi Irrigation Project is going on with a budget allocation of ₹ 197.00 lakh during 2009-10. On completion of the Project a potential of 5668 hectare will be restored.

Minor Irrigation

The approved outlay for Annual Plan for 2009-10 of Minor Irrigation Sector was ₹ 3230.00 lakh. This includes AIBP component of ₹ 2410.00 lakh, ₹ 620.00 lakh as State Plan component and ₹ 200.00 lakh under Assam Bikash Yojana.

The physical target for Annual Plan 2009-10 was 135347 hectares. This includes 424 hectares in General area, 5659 hectare under NABARD, 128204 hectare under AIBP funding, 1060 hectare under Assam Bikash Yojana.

Command Area Development and Water Management (CADWM)

For bridging the gap between potential created and potential utilised and for equitable distribution of water within respective command, stress has been given not only for creation of additional irrigation potential but also on improvement of water use efficiency of created potential. During the XI Five Year Plan the physical target has been planned for 35755 hectare under CADWM programme. Accordingly 3(three) Irrigation Department namely (i) Kaldiya Irrigation Project, (ii) Dekadong Irrigation Project and (iii) Bardkarai Irrigation Project has been taken up by the State Irrigation Department. The Pahumara Irrigation Project has been proposed to be included under the CADWM programme in 2009-10.

Review of Annual Plan 2008-09 and 2009-10

The approved Annual Plan for the year 2008-09 was ₹ 1200.00 lakh to create a physical target of 7292 hectare. However, only 5935 hectares (81.4 percent) of the physical target could be achieved during the year.

The state Government has made budget provision of ₹ 670.00 lakh out of the total fund of ₹ 1340.00 lakh (₹ 670.00 lakh as Central Share) for implementation CAD programme during the year 2009-10 alongwith ₹ 70.00 lakh against the new proposed project i.e. Pahumara CAD Project. The physical target of 2750 hectares has been fixed for the project for the year 2009-10. In respect of on-going Bardikrai Irrigation Project although no budgetary provision has been made during the year 2009-10, physical target of 500 hectares has been fixed against the Scheme. Moreover, budget provision of ₹ 100.00 lakh has been made during the year against the Integrated Irrigation Scheme for Kollong and Sonai River Basin which was not considered for Central Assistance under the CADWM Programme during the year 2003.

Area Irrigated During 2009-10

The table below shows the crop season-wise area irrigated during the year 2009-10 in different districts of Assam from Government sources of irrigation:

CROP SEASON-WISE AREA IRRIGATED DURING THE YEAR 2009-10 (Provisional) (In Hectare)

Sl. No.	Name of district	Kharif	Rabi & Pre-Kharif	Total
1.	Dhubri	624.00	447.60	1071.60
2.	Kokrajhar	6325.00	16.00	6341.00
3.	Bongaigaon	263.20	34.26	297.46
4.	Goalpara	1752.00	411.60	2163.60
5.	Barpeta	12286.00	4088.33	16374.33
6.	Nalbari	189.00	78.55	267.55
7.	Kamrup (Metro & Rural)	4540.10	1656.50	6196.60
8.	Darrang	6163.00	1572.00	7735.00
9.	Sonitpur	11981.00	15.50	11996.50
10.	Lakhimpur	289.00	272.00	561.00
11.	Dhemaji	-	606.00	606.00
12.	Morigaon	554.00	654.50	1208.50
13.	Nagaon	33011.00	6522.85	39533.85
14.	Golaghat	1731.50	255.21	1986.71
15.	Jorhat	977.00	85.45	1062.65
16.	Sivasagar	817.50	27.13	844.63
17.	Dibrugarh	1232.00	6.00	1238.00
18.	Tinsukia	1085.00	36.10	1121.10
19.	Karbi Anglong	16233.50	1926.00	18159.50
20.	Dima-Hasao	3915.00	-	3915.00
21.	Karimganj	131.00	13.00	144.00
22.	Hailakandi	290.00	-	290.00
23.	Cachar	2130.00	-	2130.00
24.	Chirang	5592.00	1363.00	6955.00
25.	Baska	14837.00	207.00	15044.00
26.	Udalguri	20820.00	790.00	21610.00
	Total	147769.00	21084.58	168853.58

Source: Chief Engineer, Irrigation Department, Assam

Realisation of Irrigation Service Charges

As sufficient fund is required for operation and maintenance of Irrigation Schemes and the fund provided in the state's budget is not adequate, the State Irrigation Department has introduced the system of realisation of service charges from the beneficiary cultivators since 1993. The rates of Irrigation Service Charges have

been revised during 2000-01 to cope with the increasing cost of maintenance and in accordance with the Fiscal Reform Measures of the State Government. The current rates of Irrigation Service Charges are as follows:

IRRIGATION SERVICE CHARGES

Crops	Rate/Bigha. (Rs)	Rate/Hect. (Rs)
Kharif	37.50	281.24
Wheat and Other Rabi	75.00	562.50
Early Ahu	100.00	751.00
Ahu	100.00	751.00
Jute	20.00	150.00
Sugarcane	29.60	222.00

Source: Chief Engineer, Irrigation Department, Assam

In spite of Government's Notification for realisation of Irrigation Service Charges from the beneficiary cultivators the position of realisation is not upto the satisfaction due to various reasons-

1. Poor economic condition of the cultivators;
2. General tendency of the beneficiary cultivators to get free water from Govt. Irrigation Schemes;
3. Absence of legal authority of Water Users' Associations empowering them to collect Irrigation Service Charges;
4. Some authorities have not permitted to collect the Irrigation Service Charges.
5. Adverse law and order situation in some areas for certain periods.

However, the Department is endeavouring to realize the Service Charges from the beneficiary cultivators. The status of Irrigation Charges actually realised during the last ten years is presented below:

IRRIGATION CHARGES REALISED

(Rupees in Lakh)

Year	Amount realized
2000-2001	0.23
2001-2002	0.24
2002-2003	1.74
2003-2004	2.86
2004-2005	4.92
2005-2006	3.53
2006-2007	2.02
2007-2008	1.96
2008-2009	2.02
2009-2010	3.40

Source: Chief Engineer, Irrigation Department, Assam.

In order to improve the position of realisation of Irrigation Service Charges the Department has undertaken the following steps-

- a. The Assam Irrigation Act, 1983 as well as the Assam Irrigation Rules, 1997 was enacted;
- b. The Assam Irrigation Water Users' Act, 2004 has been enacted.

- c. District wise Farmers' Motivation Training Programmes are conducted time to time to create awareness about the utility of irrigation for Multiple Cropping with a view to uplift their economic condition of cultivators through scientific agriculture.
- d. 795 Water Users' Associations (WUA) have been constituted in the Command Areas of Irrigation Schemes/Projects.
- e. District wise WUA Farmers' Training was conducted to adopt scientific agriculture in Irrigation Command.
- f. Out-of-State exposure visit in Tamilnadu, Andhra Pradesh and Jharkhand have been organised for officials of Irrigation Department, NGOs and WUA farmers.

Irrigated Area As Per Agriculture Census-2005-06

As per Agriculture Census 2005-06 there is about 1.45 lakh hectare net irrigated area (including private sources) in the State of which 0.23 lakh hectare area irrigated from 'canal', 0.031 lakh hectare from 'tanks', 0.17 lakh hectare from 'tubewells' and 1.02 lakh hectare receives irrigation from 'other sources'. The table below shows the size class wise area receives irrigation from different sources in the State.

SIZE CLASS AND SOURCE-WISE AREA IRRIGATED IN ASSAM

(Area in Hectare)

Sl. No.	Size Class (in Ha)	Area under Operational Holding	Area Receiving Irrigation from Sources					Net Irrigated Area
			Canal	Tanks	Wells	Tube wells	Other Sources	
1	Below 0.5	353051.83	1904.95	1197.90	28.13	1545.57	10486.60	15163.15
2	0.5-1.0	407092.81	2538.38	281.01	80.01	2374.69	9879.69	15153.78
3	1.0-2.0	718383.23	5499.75	331.41	66.71	4146.96	18333.57	28378.40
4	2.0-3.0	496982.96	3862.86	379.48	37.94	2471.65	10661.63	17413.56
5	3.0-4.0	349023.18	3354.49	198.91	25.41	2004.46	9996.45	15579.72
6	4.0-5.0	203932.59	1647.67	125.39	11.04	845.12	6617.06	9246.28
7	5.0-7.5	177267.26	2379.52	135.41	16.60	775.95	6222.10	9529.58
8	7.5-10.0	44203.07	395.95	64.33	0.00	415.22	2237.11	3112.61
9	10.0-20.0	34251.16	80.40	28.02	0.00	252.87	2398.58	2759.87
10	20 & above	264354.79	1456.23	400.01	65.06	1863.33	25580.87	29365.50
11	All Classes	3048542.88	23120.20	3141.87	330.90	16695.82	102413.66	145702.45

Source: Agriculture Census, 2005-06