

1.0 Background

The Brahmaputra Board was set up under the Ministry of Irrigation (now renamed as Ministry of Water Resources) by the Government of India under an Act of Parliament called '**The Brahmaputra Board Act, 1980 (46 of 1980)**' for the planning and integrated implementation of measures for the control of floods and bank erosion in the Brahmaputra Valley and for matters connected therewith. The Board office started functioning with Headquarters at Guwahati with effect from 11th January 1982. The jurisdiction of the Board covers entire Brahmaputra and Barak Valley, spreading in all the States of the North Eastern Region including Sikkim and part of West Bengal falling under Brahmaputra Basin.

The main functions of Brahmaputra Board are -

- (a) Undertaking 'Survey & Investigation' in Brahmaputra & Barak Valley and preparation of Master Plans for control of floods, bank erosion and improvement of drainage in the Brahmaputra Valley and activities connected therewith, including development and utilization of water resources of the Brahmaputra Valley for irrigation, hydropower, navigation and other beneficial purposes,
- (b) Preparation of Detailed Project Reports and estimates including apportionment of cost among States in respect of the dams and other projects,
- (c) Formulation of programme, in consultation with State Governments, for construction / implementation of dams and other projects identified in the Master Plans, approved by Government of India, in phases,
- (d) Finalization of standards and specifications for construction, operation and maintenance of such dams and other projects and
- (e) Construction, operation and maintenance of Multipurpose and other Water Resources Projects, identified in the Master Plans, on approval of Government of India.

2.0 Activities

2.1 Preparation of Master Plans

Brahmaputra Board undertakes 'Survey & Investigation' and formulates Master Plans of Basins and Sub-Basins, as mandated under the Brahmaputra Board Act, 1980. Apart from 'Survey & Investigation', secondary data are collected from various State and Central Government Departments and other sources as well. Water Resources and other Departments of the State(s)

are associated in formulation of Master Plans. On completion, Master Plans are circulated among Members of Brahmaputra Board for their views. On modification in incorporation of views of members, Master plans are placed in the meeting of Brahmaputra Board. Finally, on clearance by the Brahmaputra Board, Master Plans are submitted to Ministry of Water Resources. After obtaining approval of Government of India, Master Plans are provided to State Governments for implementation of recommendations. So far Brahmaputra Board has formulated 60 Master Plans.

Master Plans have been formulated in parts (Master Plan Part-I, Master Plan Part-II and Master Plan Part-III). Master Plan of River Brahmaputra (Main Stem) was formulated under Part-I and Master Plan of Barak River and its tributaries (except Dhaleshwari) under Part-II. Part-III has 55 Master Plans of tributaries of Brahmaputra River, Rivers of Tripura, Dhaleshwari River – a tributary of Barak River and Majuli Island.

During XII Plan additional 11 Sub-Basins are identified for preparation of Master Plans under part-III.

Status of Preparation of Master Plan

Sl No.	Activity	Status
A	Main River	Master Plans have been approved by Government of India in the year 1997 and furnished to the State Governments for implementation of recommendations.
1	Brahmaputra (Main Stem) - Part-I	
2	Barak and its Tributaries – Part-II	
B	Tributories (till XI Plan) – Part-III	
1	Buridehing	
2	Dikhow	
3	Dhansiri	
4	Koouli Kolona	
5	Puthimari	
6	Ranoanadi	
7	Gumti	
8	Pagladiya	
9	Noa-nadi	
10	Dikrong	
11	Muhuri	

Sl No.	Activity	Status
12	Jia-Bharali	
13	Manu	
14	Champamati	
15	Disang	
16	Jinary	
17	Na-Noi	
18	Juri	
19	Burima	
20	Dhalai	
21	Jiadhoh	
22	Bharalu	
23	Lohit	
24	Majuli Island(Special Case)	
25	Khowai	
26	Ghiladhari	
27	Jinjiram	
28	Dhaleswari	
29	Moridhal	
30	Jhanji	
31	Subansiri	
32	Gaurang	
33	Haora	
34	Gabharu	
35	Gadadhar	
36	Bhogdoi	
37	Belsiri	
38	Kulsi-Deosila	
39	Depota	
40	Dhansiri (North)	
41	Barnadi	
42	Buroi	
43	Brahmajan	
44	Beki-Manash-Aie	
45	Dudhnoi-Krishnai	
46	Bargang	
47	Tipkai	

Sl No.	Activity	Status
48	Sankosh	Master Plans are under processing in Ministry of Water Resources for approval of Government of India.
49	Tangani	
50	Torsa-Raidak	
51	Teesta	
52	Simsang	Master Plans were completed in the year 2011-12 and submitted to Ministry of Water Resources for approval of Government of India.
53	Kynshi	
54	Um-n-got	
55	Jaldhaka	
C	Tributaries (during XII Plan)	
56	Waikhyrwi	Master Plans have been completed and are under process of circulation among Board Members.
57	Umtru	
58	Ganol	
59	Bugji	Master Plans are under preparation.
60	Dareng	
61	Umsohryngkew	
62	Umiew	Master Plans are identified for preparation during XII Five Year Plan.
63	Myntdu	
64	Lubha	
65	Imphal River	
66	Feni River	

49 Master Plans have been approved by the Government of India and are under implementation by States. 8 Master Plans have been completed and approved by Brahmaputra Board and are under processing for approval in the Ministry of Water Resources. Another 3 Master Plans have been completed and are under process of circulation among Board Members. The balance 8 Master Plans are under various stages of formulation.

2.2 Flood Management and Anti-erosion Schemes

Brahmaputra Board has taken up and implemented successfully certain

flood management and anti-erosion schemes. Some schemes are still continuing and some are planned to be taken up during the current working season. Details on the above are furnished below-

2.2.1 Completed Flood Management and Anti-erosion Schemes

2.2.1.1 Anti-erosion Measures to protect Kushiabil and Durgajan Village at Dimapur on River Dhansiri (South) in Nagaland

Anti-erosion works to protect erosion affected areas of river Dhansiri South was taken up in two Phases. The Phase-I of work was taken up as 'Anti-erosion Measures to protect Kushiabil, Durgajan and Nagarjan Village at Dimapur on River Dhansiri (South) in Nagaland' was started in September, 2005 and completed in March, 2006 at a cost of ` 0.802 crore.



Anti-erosion works under execution to protect Kushiabil and Durgajan villages at Dimapur on River Dhansiri(South) in Nagaland

An area of 150 ha has been benefitted for execution of the scheme.

2.2.1.2 Anti erosion scheme to protect Mao Colony, Kuki Village and Assam Rifle Transit Camp area at Dimapur from flood and erosion of river Dhansiri (S)

Under Phase -II, this scheme was taken up by Brahmaputra Board during X Five Year Plan and successfully completed during the year 2007-09 with an estimated cost of ` 1.797 crore to protect Mao Colony, Kuki Village and Assam Rifle Transit Camp area at Dimapur from flood and erosion of river Dhansiri (S). An area of 13.35 ha has been protected on execution of the

scheme.

2.2.1.3 Anti-erosion Works at Nagrijuli on Puthimari River for protection of Nagrijuli, Rangia town, Mukalmua and Barbhag from flood and erosion

The Scheme titled 'Anti-erosion works at Nagrijuli on Puthimari River for protection of Nagrijuli, Rangia town, Mukalmua and Barbhag from flood and erosion' at an estimated cost of ` 4.89 crore was administratively approved in the last year(2007) of X Five Year Plan and could not be started during X Five Year Plan due to shortage of time. The work successfully completed in the year 2008-09 and protected an area of 35.11 ha got protected on completion of the scheme.



2.2.2 Ongoing Flood Management and Anti-erosion Schemes

2.2.2.1 Protection of Majuli Island from floods and erosion

Majuli is the largest inhabited River Island in the world. It is situated between latitudes 26°45'N and 27°10'N, and longitudes between 93°40'E and 94°35'E. Majuli has been the cultural capital and the cradle of Assamese civilization since the 16th century. Sankardeva, a pioneer of the medieval-age neo-vaishnavite movement, preached a monotheist form of Hinduism called as Vaishnavism and established



monasteries and hermitages known as 'Satras'. The 'Satras' preserve antiques like weapons, utensils, jewellery and other items of cultural significance. The inhabitants of Majuli are mostly tribals - predominantly from the Mishing, Deori and Sonowal Kacharis tribes. Majuli is also famous for pottery.



Majuli Island has constantly been subjected to erosion by the mighty Brahmaputra. Responsibility for undertaking anti-erosion works for protection of Majuli Island was given to Brahmaputra Board in the year 1999. Physical activities on the ground started in the year 2004.

Total area of the land mass of

Majuli Main Island was 502.21 sq km in the year 2004. Since the year 2004, with regular implementation of ant-erosion / bank protection measures by Brahmaputra Board, the total area of Majuli Island has increased to 523.88 sq km till the year 2014. Currently, works under Phase-II and Phase-III are under execution, since 11th Five Year Plan. Spillover works - such as completion of five spurs, river bank revetment, laying porcupines, construction of 'Raised Platforms' in low lying flood vulnerable areas are under execution and targeted to be completed during the working season of the year 2014-15.

Financial Implication

Expenditure incurred by Brahmaputra Board on undertaking measures for protection of Majuli Island from floods and erosion since January 2004 under various Phases is detailed below-

(` in crore)

Sl No	Description	Estimated Cost	Actual Expenditure	Remarks
	Immediate Measures (Year 2004-2005)	6.22	6.09	Completed
	Phase- I (Years 2005-2011)	56.07	52.62	Completed
	Emergent Measures (Year 2008)	4.99	4.75	Completed
	Phase-II & Phase-III (March' 2014)	115.99	91.19	78.87% of physical progress has been achieved
	Total	183.27	154.65	

Outcome

The following are the major

achievements -

- o 'Raising and Strengthening' of 96.2 km of Embankment has been accomplished.
- o Without exception, there has continuously been loss of land of Majuli Island. Since implementation of protection measures by Brahmaputra Board trend of land loss got reversed. Particulars on net gain of land mass in Majuli Island are tabulated below -

Year	Area of Majuli Island (in sq km)	Net Area reclaimed (in sq km)
2004	502.21	
2008	506.37	4.16
2011	520.26	13.89
2013	522.73	2.47
2014	523.88	1.15
Total		21.67

Plan Ahead

Ministry of Water Resources, Government of India has constituted a 'Standing Committee of Experts' under the Chairmanship of Member (River Management), Central Water Commission to undertake visits to the work sites, advice / recommend and monitor implementation of protection measures. Based upon recommendations of 8th visit of 'Standing Committee of Experts' on Majuli, Brahmaputra Board has formulated a scheme - **Protection of Majuli Island from Floods and Erosion-Phase-IV** - at the estimated cost of ` 200.13 crore for implementation during the 12th Five Year Plan. The scheme is under 'Techno-Economic' appraisal in Central Water Commission.

2.2.2.2 Avulsion of Brahmaputra at Dhola-Hatighuli (Restoration of Dibang and Lohit Rivers to their original courses)



Avulsion of left bank of River Lohit occurred just before its confluence with Dibang near Dhola-Hatighuli located in Dumdooma, Civil Sub-division of Tinsukia district - in the year 1989, due to breach in Saikhowa Bund. Gradual widening of the channel with time

was threatening existence of more areas of Tinsukia and Dibrugarh Districts of Assam, situated all along the newly developed channel. Initially significant combined flow of Dibang and Lohit rivers started to flow through Ananta Nala to Dangari - a tributary of river Dibru. Since the year 2000 the Balu Nala became dominant and almost entire diverted flow of Lohit and Dibang Rivers started passing through Balu Nala. Gradual widening of the channel with time was threatening existence of more areas of Tinsukia and Dibrugarh Districts of Assam, situated all along the newly developed channel.

The scheme "Avulsion of Brahmaputra at Dhola-Hatighuli (Measures for diversion of River Dibang to its original course) with ancillary anti-erosion measures" prepared by Government of Assam was approved by Ministry of Water Resources, Government of India in the Technical Advisory Committee (TAC) meeting held in May, 2002 and the Brahmaputra Board was entrusted with the responsibility for execution of the scheme. Total expenditure of ` 71.64 crore has so far been incurred by Brahmaputra Board



on execution of works envisaged under Phase-I through Phase-IV as mentioned hereunder-

(` in crore)

Sl.	Description	Estimated Cost	Actual Expenditure	Remarks
1	Phase-I (January 2003 to July 2004)	10.47	10.47	Completed
2	Phase- II (January 2004 to July 2004)	5.22	4.16	Completed
3	Phase-III (March 2007 to July 2007)	8.47	8.58	Completed
4	Phase-IV	54.53	48.43(up-to March' 2014)	99.80% of the physical progress has been achieved
	Total	78.59	71.64	

Outcome

The following are the important achievements of protection measures undertaken to restore original flow channels of Dibang and Lohit-

- Measures undertaken for diversion of flow of Dibang to original course had been extremely effective. Water flow in Balu Nola - through which almost entire combined flow of both rivers after avulsion used to flow - got reduced substantially. Outcome of efforts was on expected line.
- 11 villages under Doomduma Revenue Circle in an area of about 1500 ha got protection from floods, since the year 2004 onwards, on construction of retirement bund at Hatighuli area on Left bank of Lohit river.
- An area of about 900 ha just behind the Tie-bund, on country side, got protection from floods and erosion, on construction of Tie-bund in the year 2003-04. Cultivation has started, afresh, in the area between the Tie-bund and the Ghoramora channel.
- There had been appreciable erosion along left bank of River Lohit in Rohmaria area for last above 50 years till the year 2003. On account of protective measures undertaken in the upstream areas of Rohmaria on Lohit River, a substantial area, eroded earlier in the vicinity has been reclaimed. Heavy silt deposition has occurred along left bank and bank line at places has shifted towards river side.

- The pilot channel, excavated for restoration of flow direction of Lohit towards west, got silted up after the monsoon of the year 2004. Thus, the pilot channel became ineffective after initial days of monsoon.

Plan Ahead

As per recommendation of the Standing Committee of Experts on Majuli during its 8th visit in January, 2013 following two DPRs under Phase-V of 'Restoration of Debang and Lohit Rivers to their original courses at Dhola-Hatighuli' were formulated and submitted to the CWC for appraisal –

- i. Restoration of Lohit and Dibang Rivers to their original courses: Construction of diversion embankment across avulsed channel of river Lohit at Kaliaghat, Dholla-Hatighuli – Estimated cost: ` 363.18 crore
- ii. Conversion of existing Tie Bund across spill channel of river Dibang from Ch. 480 m to Ch. 2550 m into full fledged embankment at Bahbari - Estimated cost: ` 9.22 crore

The DPRs are under techno-economic appraisal of Central Water Commission.

2.2.3 Flood Management and Anti-erosion Schemes planned to be taken up during current working season

2.2.3.1 Protection of Balat Village in Meghalaya on River Umngi

Required formalities like Techno-economic clearance from Central Water Commission, providing land by the State Government free of cost and post project maintenance by the State Government before execution of the scheme 'Anti-erosion works for protection of Balat Village in Meghalaya on river Umngi' at an estimated cost of ` 10.18 crore have been completed and tendering process has been initiated.

2.3 Drainage Development Schemes

41 Drainage congested areas have been identified in approved Master Plans prepared by Brahmaputra Board. Detailed Project Reports in respect

of 22 such drainage congested areas have been prepared. Detailed Project Reports in respect of 19 such areas are under various stages of preparation. Out of 22 schemes for which DPRs have been prepared, 2 schemes namely, Harang and East of Barpeta have been completed and 4 are under execution.

Status of identified Drainage Development Schemes

Sl No	Name of Drainage Scheme	Tributary / Sub-Basin	Basin	Area affected (sq.km)	State	Status
A - Schemes cleared by Central Water Commission						
1	Harang	Barak	Barak	242	Assam	On completion of execution, schemes were handed over to Water Resources Department, Government of Assam.
2	East of Barpeta	Beki-Manas Aie	Brahmaputra	180		
3	Borbhag	Pagladiya	Brahmaputra	56		Schemes are under execution.
4	Amjur	Barak		52.5		
5	Jengrai	Subansiri	Brahmaputra	18		
6	Jakaichuk	Jhanji	Brahmaputra	100		
7	Kailashahar	Manu	Manu-deo	18	Tripura	Execution is suspended due to inability of State Government to provide requisite land.
8	Singla	Barak	Barak	322	Assam	
9	Rudrasagar	Gumti	Gumti	22	Tripura	The scheme has been handed over to State Government of Tripura for execution.
10	Demow	Disang	Brahmaputra	226	Assam	The scheme was initially handed over to State Government of Assam for execution. Subsequently,

						Government of Assam requested Brahmaputra Board for execution of the scheme. The scheme is included in the XII Five Year Plan for implementation.
11	Joysagar	Kopili-Kolong	Brahmaputra	55	Assam	The scheme has been dropped from the list of identified Drainage Development schemes of Brahmaputra Board.
B – Schemes under appraisal in Central Water Commission						
12	Pola	Pola	Barak	71	Assam	The schemes are under appraisal in Central Water Commission.
13	Dharmanagar	Juri	Juri	20	Tripura	
14	Kalamonijan	Kopili (Jogijan & Lankajan)	Brahmaputra	100	Assam	
15	Nelli	Kopili	Brahmaputra	32		
16	Mori Kolong/ Puta Kolong	No-Noi	Brahmaputra	100		
17	Larsing	Barak	Barak	35		
C – Schemes under compliance of observations of CWC, in Brahmaputra Board						
18	West of Barpeta	Beki-Manas Aie	Brahmaputra	23	Assam	Compliance to observations of Central Water Commission is in process.
19	Ghagra	Barak	Barak	65		
20	Sonai	Puthimari	Brahmaputra	63		
21	Konwarpur	Demow	Brahmaputra	112		
22	Deroi	Disang	Brahmaputra	194		
D – Schemes under formulation in Brahmaputra Board						
23	Larua – Jaamira - Sessa	Buridehing	Brahmaputra	300	Assam	The schemes are under formulation in Brahmaputra Board.
24	Punir	Barak	Barak	31		
25	Bhereki Bill	Jiadhoh	Brahmaputra	96		
26	Ghiladhari	Ghiladhari	Brahmaputra	144		

27	Gelabill	Bhogdoi	Brahmaputra	5		
28	Mora-Pichalamukh	Dikrong	Brahmaputra	8		
29	Pakania	Ranganadi	Brahmaputra	16		
30	Namdang	Dikhow	Brahmaputra	10		
31	Sisa Pathar	Dikrong	Brahmaputra	12		
32	Tingrai	Buridehing	Brahmaputra	11		
33	Khatra	Barnadi	Brahmaputra	15		
34	Batha	Nanai	Brahmaputra	40		
35	Haria- Nanoi	Nanai	Brahmaputra	NA		
36	Depota	Depota	Brahmaputra	NA		
E – Schemes Dropped from the list of identified schemes of Brahmaputra Board						
37	Rongsai	Jinjiram	Brahmaputra	147	Assam	The schemes have been dropped from the list of identified schemes of Brahmaputra Board.
38	Sessa		Brahmaputra	59		
F – Schemes under examination for deletion from the list of identified schemes of Brahmaputra Board						
39	Badri	Barak	Barak	33	Assam	The schemes are under examination for deletion from the list of identified schemes of Brahmaputra Board.
40	Mora-Dikrong	Dikrong	Brahmaputra	26		
41	Sukhsagar	Gumti	Gumti	50	Tripura	

2.3.1 Completed Drainage Development Schemes

2.3.1.1 Harrang Drainage Development Scheme

The Scheme was initially approved for implementation under North Eastern Council (NEC) funding in the year 1991 as a pilot scheme at an estimated cost of ` 4.9 crore. The scheme could not be executed due to non-



allocation of funds by NEC. The Brahmaputra Board took up the scheme in IX Plan at an estimated cost of ` 4.89 crore. However, due to certain modifications in design parameters, the estimate had to be revised. Revised estimate amounting to ` 30.49 crore has been approved by Ministry of Water Resources. The execution of this scheme was taken up by Brahmaputra Board in IX Five Year Plan and completed in March 2011. The scheme has objective to facilitate benefit to 8,300 families and make available 79 sq km additional land between April to September and 39.5 sq km between October to March for agricultural activities. On completion, the scheme was handed over to Water Resources Department, Government of Assam.

2.3.1.2 East of Barpeta Drainage Development Scheme

The original estimate of the project was for ` 1 .34 crore and it was revised to ` 2.96 crore. The scheme was taken up for execution in March, 2009 and completed in June, 2011. Expenditure incurred against this scheme is ` 2.70 crore up-to March, 2012. The scheme has been completed and handed over to Water Resources Department, Government of Assam.



2.3.2 Ongoing Drainage Development Schemes

2.3.2.1 Jakaichuk Drainage Development Scheme

The scheme is under execution in Brahmaputra Board since the year 2008. An amount of ` 1.35 crore till March, 2012 has been spent against the estimated cost of ` 2.96 crore with physical progress of 45% and further progress of work was held up since November 2010 due to objection of the local inhabitants on non- existence of an overflow section in the sluice designed by IIT, Guwahati. The overflow section has been finalized the work has been resumed in January, 2014 and targeted to complete during the year 2014-15. The overall physical progress is 65% and expenditure is ` 1.57 crore upto March'2014.

2.3.2.2 Borbhag Drainage Development Scheme

Brahmaputra Board took up the execution of Borbhag Drainage Development Scheme during the year 2006. The scheme was subsequently revised to ` 11.70 crore in the year 2010. Two components of the work - (1) Raising and strengthening of embankment and (2) Re-sectioning of channel have already been completed. The design of sluice regulator is modified by Central Water Commission and



techno-economic clearance for the revised estimate amounting to ` 14.80 crore was received through letter No: 17/7/ Appraisal/BB/2012-M&AG/1037-40 dated 29. 06. 2012. Physical progress up to March'2014 is 50.59% at the total expenditure of ` 5.70 crore. The scheme is targeted to complete by the Year 2014-15.

2.3.2.3 Amjur Drainage Development Scheme

Techno-economic clearance of the scheme for an amount of `14.15 crore was received in January 2006. Execution of Amjur DDS was taken up in the year 2006-07. Out of the two components (i.e. construction of sluice regulator and raising and strengthening of embankment), the work for raising and strengthening of existing embankment was taken up first. Process of land acquisition for construction of new embankment as well as remaining part of 'Raising and Strengthening' work is going on. The District Administration of Cachar handed over 45 Bigha and 7 Katha of land for construction of new embankment (475 m) and raising and strengthening of 3675m existing embankment. An estimate amounting to ` 1.83 crore was submitted by District Authority of Cachar towards compensation of land measuring 44 Bigha and 4 Katha for construction of sluice and appurtenant structure. The Central Water Commission(CWC) has furnished the drawings of the sluice on 25th July, 2013 and revised DPR for ` 56.37 crore has been submitted to CWC on 28th October 2013. On receipt of TAC clearance of revised estimate, the

tendering process could be initiated. Expenditure incurred up to March'2014 is ` 13.94 crore (including cost of land acquisition) with overall physical progress of 33.50%.

2.3.2.4 Jengrai Drainage Development Scheme(DDS)

Techno-economic clearance of Jengrai DDS was received in the year 2006-07. The scheme is presently under execution. The physical progress of work under Jengrai DDS is 27% at the total expenditure of ` 1.04 crore against the sanctioned amount of ` 1.49 crore. Further progress of work was held up since March 2008. Revised estimate for ` 5.23 crore has been techno-economically cleared by CWC through letter No: 17/7/Appraisal/BB/2012-M&AG/1687-89 dated 5th December, 2013. The remaining work will be completed in next two working seasons.

2.2 Preparation of Detailed Project Reports of Water Resource Projects

The Brahmaputra Board undertook 'Survey & Investigation' and preparation of Detailed Project Reports (DRPs) of 15 Multipurpose Water Resources Projects. Out of above, DPRs of 5 projects – Subansiri, Dihang, Tipaimukh, Bairabi and Pagladiya Dam project – have already been completed. The Government of India handed over Subansiri and Dihang to National Hydroelectric Power Corporation (NHPC), Tipaimukh to North Eastern Electric Power Corporation Limited (NEEPCO) - subsequently NEEPCO handed over the project to NHPC), Bairabi to Mizoram Government and subsequently Mizoram Government entrusted the project to M/S Sikaria Power Limited. The execution of the Pagladiya Dam Project remained with Brahmaputra Board. The Pagladiya Dam project could not be completed due to inability of the State Government to provide lands for further progress of the project. The Pagladiya Dam Project was finally declared closed on 31st May 2013. Two Projects namely, Noa-Dehing and Kushi have been declared as National Projects by Government of India. Detailed Project Report (DRP) of the above two project are completed and submitted to Ministry of Water Resources.

Status of Multipurpose Projects Identified for Investigation by Brahmaputra Board

Sl No	Name of Project	Basin	Installed capacity (MW)	Remarks
A- Completed DPR				
1	Dihang (Siang) Dam	Brahmaputra	20000	The projects have been handed over to NHPC for execution.
2	Subansiri Dam Project	Brahmaputra	4800	
3	Tipaimukh Dam	Barak	1500	The project was handed over

	Project			to NEEPCO for execution. Subsequently, NEEPCO handed over the project to NHPC.
4	Bairabi Dam Project	Barak	75	The project was handed over to Mizoram Government for execution and subsequently Mizoram Government handed the project to M/S Sikaria Power Limited.
5	Pagladiya Dam Project	Brahmaputra	3	Brahmaputra Board started execution of the project. On account of inability of Government of Assam in providing lands needed for implementation of the project, the project was declared closed on 31 st May 2014.
B - DPR Partially completed				
6	Debang Dam Project	Brahmaputra	4900	The project has been handed over to NHPC.
C - The project are under 'Survey & Investigation' and preparation of DPRs				
7	Noa-Dehing Dam Project	Brahmaputra	71	DPR is completed in March'2014 and is submitted to MoWR
8	Kulsi MP Project	Brahmaputra	55	DPR is completed in May'2014 and is submitted to MoWR
9	Simsang Dam Project	Others	65	The project is under 'Survey & Investigation'
10	Jiadhal Dam Project	Brahmaputra	70	The project is under 'Survey & Investigation'.
11	Killing Dam Project	Brahmaputra	85	The project is under 'Survey & Investigation'.
12	Kynshi Stage-I Dam Project	Others	450	Projects have been handed over to private developers by the Government of Meghalaya.
13	Kynshi Stage-II Dam Project	Others	450	
14	Lohit Dam Project	Brahmaputra	3000	'Survey & Investigation' has been completed. Project was entrusted to private developer by Government of Arunachal Pradesh for implementation.
15	Kameng Dam Project	Brahmaputra		Government of Arunachal Pradesh withdrew Forest Clearance for investigation and accordingly Board had to

				stop investigation.
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2.2.1 Development of Pagladiya Dam Project

The Government of India had cleared the construction and execution of Pagladiya Multi-purpose Dam project in January 2001 at an estimated cost of ` 542.90 crore by Brahmaputra Board. The Pagladiya Dam Project is planned for flood moderation to benefit an area of 40000 ha, irrigation to 54,160 ha of agricultural land and incidental power generation of 3 MW. The Project was proposed across Pagladiya River at Thalkuchi in Baksa District, Assam. The Project site falls under Bodoland Territorial Autonomous Districts (BTAD) in Assam.

Out of 7510 ha of land required for execution of Pagladiya Dam Project, 956 ha of land acquired by Government of Assam was made available to Brahmaputra Board. Due to inability of Government of Assam to acquire the balance 6554 ha of land for implementation of the project, the work was held up and as per decision of 53rd Meeting of Brahmaputra Board, all activities were closed on 31st May 2013. The Government of Assam has been requested to take over and make necessary arrangement for protection of 956 ha of land from unauthorized occupation. 26 personnel engaged for watch and ward of 956 ha of land have been disengaged from 1st June 2013.

3.0 Appraisal and Monitoring of Schemes under Flood Management Programme- a State Sector Scheme under Central Plan - in Brahmaputra and Barak Valley-

The Brahmaputra Board is entrusted with monitoring of schemes under Flood Management Programme – a State Sector Scheme under Central Plan - in respect of entire North Eastern Region including Sikkim and part of West Bengal falling under Brahmaputra Basin since X Plan. Details on schemes undertaken by Government of India under Flood Management Programme and monitored by Brahmaputra Board are shown below-

During X Plan

Sl No	Name of State	No of schemes	Central Grant released(` in crore)
1	Assam	44	78.8182

2	Arunachal Pradesh	7	16.3755
3	Manipur	4	7.911
4	Mizoram	3	6.1980
5	Tripura	7	12.7635
6	Meqhalaya	2	2.635
7	Naqaland	1	3.897
8	Sikkim	3	8.595
9	West Benqal	3	9.01

During XI Plan

Sl No	Name of State	No of schemes	Central Grant released(` in crore)
1	Assam	100	744.9
2	Arunachal Pradesh	21	78.77
3	Manipur	22	65.03
4	Mizoram	2	3.4
5	Tripura	11	20.91
6	Meqhalaya	0	0
7	Naqaland	11	28.96
8	Sikkim	28	82.86
9	West Benqal	6	13.39

Initially, the task of appraisal of schemes under Flood Management Programme of Government of India was with Central Water Commission and monitoring of progress of such schemes was with Brahmaputra Board. Subsequently, in consideration of familiarization of Brahmaputra Board with the schemes from the initial stage, it was decided that appraisal as well as monitoring of Flood Management Programme schemes of North Eastern Region may be assigned to Brahmaputra Board. In pursuance to decision contained in letter No: 5/6/2011-RMCD/660-92 dated 1st February 2012 Brahmaputra Board undertook appraisal of schemes under Flood Management Programme. During joint visits of officials of Brahmaputra Board and Water Resources Departments, scopes of some of the schemes were changed and some proposals were even considered unnecessary after visit of project sites and thus dropped. The objective behind entrusting the appraisal of Flood Management Schemes to Brahmaputra Board proved fruitful.

The appraisal of schemes under Flood Management Programme of

Government of India was entrusted back to Brahmaputra and Barak Organization, Central Water Commission, Shillong through letter No: 5/6/2012-RMCD/4756-4824 dated 30.11.2012 by Central Water Commission. Reasons are not known.

FMP schemes appraised by Brahmaputra Board from 01.02.2012 to 30.11.2012 are shown in the table below –

Sl. No	Name of the State	No of schemes received	Appraised by Brahmaputra Board	Returned to State Governments	Submitted to CWC
1	Assam	87	60	4	23
2	Sikkim	44	27	17	0
3	West Bengal	11	6	4	1
4	Meghalaya	6	0	1	5
5	Arunachal Pradesh	2	0	2	0
6	Nagaland	1	0	1	0
7	Manipur	0	-	-	-
8	Mizoram	0	-	-	-
9	Tripura	0	-	-	-
	Total	151	93	29	29

4. North Eastern Hydraulic & Allied Research Institute

North Eastern Hydraulic and Allied Research Institute (NEHARI) was established in the year 1996 under Brahmaputra Board, as a follow up of historic 'Assam Accord' inked on the auspicious day – 15th August (Independence Day of India) – in the year 1985 in presence of then, Hon'ble Prime Minister of India Late Rajiv Gandhi. The Institute is situated in sprawling campus of 44 ha at Rudreswar in North Guwahati at a distance of 25 km from the main city, far from the madding crowd of the city, on the hillock in a conducive ambient.



The Institute was set up as pioneer laboratory of North Eastern Region for laboratory testing of soil, rock, concrete and construction materials for development of water resources and other projects. The Institute has

adequate facility for simulating / understanding river behavior through physical models.

Mandate

Undertaking field and laboratory investigations / tests, research and development works of basic and applied types in 'Geo-mechanics', 'Concrete Technology', 'Soil Characteristics', 'Construction Materials' and associated issues for development of Hydropower, Irrigation, Flood Control Projects

Activities

- Hydraulic Physical Model Testing for Erosion problem study & River training
- Soil mechanics
- Rock mechanics
- Concrete technology
- Construction material testing
- Geophysical investigations at site
- Sediment/Silt analysis



NEHARI has patronage of Central Soil and Material Research station (CSMRS), New Delhi and Central Water and Power Research Station (CWPRS), Pune – Internationally reorganized as apex Institutes in the field of laboratory testing of soil and construction materials and development of physical and mathematical models in the field of development of water resources. Experts/technical hands of NEHARI have initially been imparted training on the subject by both the above mentioned premier Institutes. During this short span of time, since its inception, NEHARI has successfully completed laboratory testing of soil and materials during investigation and also during execution of a number of projects in the water resources development.

Noteworthy among them are Lower Subansiri Hydro-electric Project, Middle Subansiri Hydro-electric Project, Lower Siang Project, Middle Siang Project, Dibang Dam Project, Laskar Mintu Project of Meghalaya, Tuirini, Tuipal and Kolodyne H.E. Project of Mizoram, Dikhu Hydel Project of Nagaland and others. Test reports prepared by NEHARI have been appreciated by CSMRS. In addition to above, the model studies of Majuli for long term solution for flood problem of Majuli Island and Jiabharali river at Chowkighat for Construction Bridge at the National Highway have also been completed.

With persuasive efforts made by Brahmaputra Board, Assam Power Generation Company Limited, Government of Assam has awarded the work for undertaking laboratory testing of construction materials for Lower Kopili Project to NEHARI in the month of September 2013.

Similarly NHPC has also awarded job for undertaking laboratory tests of materials for Tawang Barrage Project. Negotiations are going on with private hydropower developers to get works from them also.