

MINISTRY OF WATER RESOURCES

DEMAND NO. 104

Ministry of Water Resources

A. The Budget allocations, net of recoveries, are given below:

(In crores of Rupees)

Major Head	Actual 2010-2011			Budget 2011-2012			Revised 2011-2012			Budget 2012-2013			
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
Revenue	460.12	449.18	909.30	624.20	500.93	1125.13	535.75	500.93	1036.68	1373.20	539.20	1912.40	
Capital	60.36	1.95	62.31	95.80	1.80	97.60	84.25	1.80	86.05	126.80	1.80	128.60	
Total	520.48	451.13	971.61	720.00	502.73	1222.73	620.00	502.73	1122.73	1500.00	541.00	2041.00	
1. Secretariat-Economic Service	3451	...	37.68	37.68	...	69.98	69.98	...	70.25	70.25	...	75.28	75.28
Major and Medium Irrigation													
2. Central Water Commission	2701	2.95	147.80	150.75	3.00	149.50	152.50	4.00	150.21	154.21	...	156.58	156.58
3. Central Soil & Materials Research Station	2701	...	7.74	7.74	...	8.31	8.31	...	8.31	8.31	...	8.49	8.49
4. Central Water & Power Research Station	2701	...	32.57	32.57	...	35.67	35.67	...	35.67	35.67	...	36.42	36.42
5. National Institute of Hydrology	2701	...	9.80	9.80	...	8.50	8.50	...	8.50	8.50	...	10.05	10.05
6. Research and Development Programme	2701	41.36	...	41.36	45.89	...	45.89	36.70	...	36.70	92.00	...	92.00
7. Others													
7.01 Boards and Committees	2701	...	2.13	2.13	...	2.95	2.95	...	2.97	2.97	...	2.95	2.95
	4701	...	...	...	...	...	...	...	...	...	...	...	...
Total		...	2.13	2.13	...	2.95	2.95	...	2.97	2.97	...	2.95	2.95
8. Non-Plan Grants to States													
8.01 Assistance for Sutlej Yamuna Link Canal Project	3601	...	...	...	...	2.06	2.06	...	2.06	2.06	...	18.04	18.04
9. Development of Water Resources Information System	2701	28.93	...	28.93	46.84	...	46.84	46.84	...	46.84	64.45	...	64.45
	2702	0.07	...	0.07	0.06	...	0.06	0.11	...	0.11	0.01	...	0.01
	3601	10.39	...	10.39	11.04	...	11.04	10.98	...	10.98	10.48	...	10.48
	3602	0.04	...	0.04	0.06	...	0.06	0.07	...	0.07	0.06	...	0.06
Total		39.43	...	39.43	58.00	...	58.00	58.00	...	58.00	75.00	...	75.00
10. Infrastructure Development	2701	2.82	...	2.82	3.00	...	3.00	2.15	...	2.15	3.20	...	3.20
11. Hydrology Project													
11.01 EAP Component	2701	25.03	...	25.03	76.00	...	76.00	46.54	...	46.54	64.40	...	64.40
11.02 Non EAP Component	2701	2.19	...	2.19	4.00	...	4.00	3.46	...	3.46	5.60	...	5.60
Total- Hydrology Project		27.22	...	27.22	80.00	...	80.00	50.00	...	50.00	70.00	...	70.00

(In crores of Rupees)

	Major Head	Actual 2010-2011			Budget 2011-2012			Revised 2011-2012			Budget 2012-2013			
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
12.	Investigation of Water Resources Development Scheme	2701	44.27	...	44.27	52.00	...	52.00	52.00	...	52.00	...	...	...
13.	Information, Education and Communication	2701	13.30	...	13.30	25.00	...	25.00	18.00	...	18.00	...	...	...
14.	Dam Safety Studies and Planning	2701	1.11	...	1.11	3.00	...	3.00	2.00	...	2.00	...	...	...
15.	River Basin Organization/Authority	2701	...	...	...	4.00	...	4.00	...	...	...	...	...	...
16.	Human Resource Development/Capacity Building	2701	...	...	...	...	...	...	...	...	...	85.00	...	85.00
17.	River Basin Management	2701	...	...	...	...	...	...	...	...	...	106.00	...	106.00
18.	Implementation of National Water Mission	2701	...	...	...	...	...	...	...	...	...	200.00	...	200.00
19.	Irrigation Management Programme	2701	...	...	...	...	...	...	...	...	...	90.00	...	90.00
20.	<i>Dam Rehabilitation and Improvement Programme (DRIP)</i>													
	20.01 EAP Component	2701	...	...	...	...	...	...	...	...	...	19.00	...	19.00
	20.02 Non EAP Component	2701	...	...	...	...	...	...	...	...	...	5.00	...	5.00
	<i>Total- Dam Rehabilitation and Improvement Programme (DRIP)</i>		...	...	...	...	...	...	...	...	...	24.00	...	24.00
	Total-Major and Medium Irrigation		172.46	200.04	372.50	273.89	206.99	480.88	222.85	207.72	430.57	745.20	232.53	977.73
	Minor Irrigation													
21.	Central Ground Water Board	2702	...	100.46	100.46	...	105.02	105.02	...	105.14	105.14	...	105.98	105.98
22.	Rajiv Gandhi National Training & Research Institute for Ground Water	2702	3.19	...	3.19	3.00	...	3.00	3.60	...	3.60	...	...	...
23.	Ground Water Management and Regulation	2702	80.93	...	80.93	117.00	...	117.00	129.00	...	129.00	288.00	...	288.00
24.	Infrastructure Development	4702	6.86	...	6.86	10.40	...	10.40	6.85	...	6.85	33.80	...	33.80
25.	Human Resource Development/Capacity Building	2702	...	...	...	...	...	...	...	...	...	15.00	...	15.00
	Total-Minor Irrigation		90.98	100.46	191.44	130.40	105.02	235.42	139.45	105.14	244.59	336.80	105.98	442.78
	Flood Control													
26.	Central Water Commission	2711	...	69.41	69.41	...	75.35	75.35	...	75.02	75.02	...	75.62	75.62
27.	Emergent Flood Protection Works in Eastern & Western Sectors	7601	...	3.00	3.00	...	3.00	3.00	...	3.00	3.00	...	3.00	3.00
28.	<i>Other Schemes of Flood Control</i>													
	28.01 Flood Forecasting	2711	24.02	...	24.02	34.00	...	34.00	34.00	...	34.00	44.00	...	44.00
	28.02 River Management Activities and Works related to Border Areas	2711	79.88	...	79.88	14.00	...	14.00	15.00	...	15.00	25.00	...	25.00
		3601	99.64	...	99.64	100.00	...	100.00	74.00	...	74.00	100.00	...	100.00
	<i>Total</i>		<i>179.52</i>	<i>...</i>	<i>179.52</i>	<i>114.00</i>	<i>...</i>	<i>114.00</i>	<i>89.00</i>	<i>...</i>	<i>89.00</i>	<i>125.00</i>	<i>...</i>	<i>125.00</i>
	28.03 Infrastructure Development	4711	9.48	...	9.48	13.00	...	13.00	4.00	...	4.00	10.00	...	10.00
	28.04 River Basin Management	2711	...	...	...	...	...	...	...	...	...	14.00	...	14.00

(In Crores of Rupees)

(In crores of Rupees)

	Major Head	Actual 2010-2011			Budget 2011-2012			Revised 2011-2012			Budget 2012-2013			
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
<i>Total- Other Schemes of Flood Control</i>														
Total-Flood Control		213.02	72.41	285.43	161.00	78.35	239.35	127.00	78.02	205.02	193.00	78.62	271.62	
<i>29. Provision under schemes for the benefit of North Eastern Region and Sikkim</i>														
29.01	Research and Development Programme	2552	...	...	0.30	...	0.30	0.30	...	0.30	8.00	...	8.00
29.02	Pagladia Dam Project	2552	...	...	0.01	...	0.01	...	...	...	...	...	...
29.03	Development of Water Resources Information System	2552	...	...	1.00	...	1.00	1.00	...	1.00	10.00	...	10.00
29.04	Ground Water Management and Regulation	2552	...	...	3.00	...	3.00	3.00	...	3.00	30.00	...	30.00
29.05	Investigation Water Resources Development Scheme	2552	...	...	2.00	...	2.00	2.00	...	2.00	...	...	...
29.06	Flood Forecasting	2552	...	...	2.00	...	2.00	2.00	...	2.00	4.00	...	4.00
29.07	River Management Activities and Works related to Border Areas	2552	...	...	74.00	...	74.00	49.00	...	49.00	...	...	...
29.08	Infrastructure Development	4552	...	...	2.00	...	2.00	2.00	...	2.00	8.00	...	8.00
29.09	Human Resource Development/Capacity Building	2552	...	...	...	...	...	...	...	...	...	...	...
29.10	Irrigation Management Programme	2552	...	...	...	...	...	...	...	...	10.00	...	10.00
29.11	River Basin Management	2552	...	...	...	...	...	...	...	...	80.00	...	80.00
<i>Total- Provision under schemes for the benefit of North Eastern Region and Sikkim</i>														
		...	...	...	84.31	...	84.31	59.30	...	59.30	150.00	...	150.00
Other Transport Services														
30.	Farakka Barrage Project	3075	...	41.59	41.59	...	43.59	43.59	...	42.80	42.80	...	49.79	49.79
		5075	44.02	...	44.02	70.40	...	70.40	71.40	...	71.40	75.00	...	75.00
		5075	...	-1.05	-1.05	...	-1.20	-1.20	...	-1.20	...	-1.20	-1.20	
	<i>Net</i>		44.02	40.54	84.56	70.40	42.39	112.79	71.40	41.60	113.00	75.00	48.59	123.59
Grand Total		520.48	451.13	971.61	720.00	502.73	1222.73	620.00	502.73	1122.73	1500.00	541.00	2041.00	
(in crores of Rupees)														
	Head of Dev	Budget Support	IEBR	Total	Budget Support	IEBR	Total	Budget Support	IEBR	Total	Budget Support	IEBR	Total	
C. Plan Outlay														
1.	Major and Medium Irrigation	12701	172.46	...	172.46	273.89	...	273.89	222.85	...	222.85	745.20	...	745.20
2.	Minor Irrigation	12702	90.98	...	90.98	130.40	...	130.40	139.45	...	139.45	336.80	...	336.80
3.	Flood Control and Drainage	12711	213.02	...	213.02	161.00	...	161.00	127.00	...	127.00	193.00	...	193.00

	Head of Dev	Budget Support	IEBR	Total	Budget Support	IEBR	Total	(in crores of Rupees)					
								Budget Support	IEBR	Total	Budget Support	IEBR	Total
4. Other Transport Services	13075	44.02	...	44.02	70.40	...	70.40	71.40	...	71.40	75.00	...	75.00
5. North Eastern Areas	22552	...	...	...	84.31	...	84.31	59.30	...	59.30	150.00	...	150.00
Total		520.48	...	520.48	720.00	...	720.00	620.00	...	620.00	1500.00	...	1500.00

1. **Secretariat Economic Services:** Non Plan provision is for secretariat expenditure of the Ministry.

2. **Central Water Commission:** The provision is made for Central Water Commission.

6. **Research and Development Programme for Water Sector:** The main objectives of the scheme are (i) to find solutions to water resources related problems of the country to improve available technology and engineering methods and procedures, (ii) to maintain a lead in the latest technology (iii) to review the state of the art in the country in different branches of the subject area by collecting relevant information from national and international organizations and identify the knowledge gap to prepare and implement suitable strategy for bridging the gaps, (iv) to prepare, co-ordinate and recommend funding of research activities to be taken up by the various institutions in the country in water resources sector, (v) to disseminate information and stimulate thinking related to the subject by publishing journals, research news/digests arranging and conducting seminars/conferences/workshops, (vi) to promote educational, training and human resources development programmes in the water sector.

9. **Development of Water Resources Information System:** The scheme on Water Resources Information System proposes to establish databases and data banks at the national and state level by consolidating the data flowing mainly from the existing system. Watershed maps using satellite images and other information. Geographical Information System will be hosted for visual display of spatial information laid over watershed maps for pictorial understanding by planners and managers involved in water resources development.

Collection of basin Hydrological data of various river basin in the country is pre-requisite for an accurate assessment of water resources, planning their optimum utilization for the comprehensive development of the basins/ forecasting flood events and for setting inter-state water disputes. Due to inadequacy of Hydrological Observation (H.O.) sites, there is need to strengthen the network of H.O. sites as per WMO guidelines.

10. **Infrastructure Development:** The Infrastructure Development Scheme of the Ministry of Water Resources has been formulated by merger / integration of four existing schemes viz. (i) Land & Building (LB) and Information Technology (IT) Plan of Central Ground Water Board (CGWB), (ii) LB of the Central Water Commission (CWC), (iii) IT development of the Ministry and (iv) upgradation/modernization of computerization and IT system of CWC.

11. **Hydrology Project:** To extend and promote the sustained and effective use of the Hydrological Information System by all implementing agencies concerned with water resources planning

and management in the thirteen States and eight Central Organisations are participating in HP-II and it is envisaged to continue in the XII Plan. The major activities are (i) Real Time Data Acquisition System (RTDAS), (ii) Construction of 1262 piezometers and installation of 1262 DWLRs, (iii) Decision Support System-Planning (DSS-P), (iv) Decision Support System-Real Time (DSS-RT), (v) Hydrological Design Aid-Surface Water (HDA-SW), (vi) Development of Real Time Stream-Flow Forecasting and Reservoir Operation System and installation of RTDAS equipments in Maharashtra, (vii) State Data Centre Buildings (viii) Construction of buildings at NWA, CWC, Pune, (ix) Establishment of Hydro-metrological networks,

(x) Up-gradation of WISDOM, (xi) Development of eGEMS and (xii) Aquifer Mapping.

16. **Human Resource Development/Capacity Building:** This comprises of four components viz. (i) Information, Education and Communication (IEC), (ii) National Water Academy (NWA), (iii) Rajiv Gandhi National Ground Water Training Institute (RGI) and (iv) Capacity Building Programme

17. **River Basin Management:** River Basin Management is a newly named scheme formulated by merging two ongoing schemes, namely, River Basin Organisation, Investigation of Water Resources Development Scheme. The scheme also includes, restructuring of CWC and activities of Brahmaputra Board under following schemes:

(i) River Basin Organization (RBO): RBOs would provide a forum to all the co-basin states for taking up necessary studies and evaluation etc., with a view to identify the most appropriate alternative for optimum utilisation of resources. Therefore formation of RBO needs to pursue with the concerned State Govts.

(ii) Investigation of Water Resources Development Scheme: This scheme is necessary to carry out the activities related to survey, field investigation, preparation of Pre-feasibility/Feasibility Reports (FRs) & Detailed Project Reports (DPRs) of various water resources development schemes including the schemes for Inter Basin transfer of water, preparation of DPR of National Projects and to carry out other studies and activities considered necessary incidental, supplementary or conducive to attainment of above objectives.

(iii) Restructuring of CWC: Restructuring of Central Water Commission is essential to address issues such as likely impact of Climate change, holistic planning & development of water resources considering river basin as a unit, effective coordination among planners at one hand and stakeholders at other hand, need to improve Efficiency in Operation and Management of Projects, Capacity Building and lack of integrated water resources development and management.

(iv) Brahmaputra Board: The Brahmaputra Board has been setup for planning and integrated implementation of measures for control of floods and bank erosion in Brahmaputra and Barak Valley and for matters connected therewith. The states of Arunachal Pradesh, Assam, Meghalaya, parts of the states of Manipur, Mizoram, Nagaland, Tripura Sikkim and a part of West Bengal falling within the Brahmaputra Basin. It is carrying out Survey, Investigation & preparation of Master Plan, Drainage Development Scheme and Anti-erosion works including protection of Majuli Island from flood and erosion Avulsion of Brahmaputra at Dhola-Hatighuli which are continuing activities.

18. **Implementation of National Water Mission:** The National Action Plan on Climate Change (NAPCC) launched by the Government of India has identified the approach to be adopted to meet the challenges of impact of climate change through institutionalization of eight national missions which inter alia includes a National Water Mission. The Mission Document for the National Water Mission was drafted by the Ministry of Water Resources through consultative process with full involvement of State Governments, concerned Central Ministries, NGOs, academicians etc. The objective of National Water Mission is conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management.

19. **Irrigation Management Programme:** Irrigation Management Programme is a new scheme introduced in the XII Five Year Plan of proposed outlay of ₹ 10000.00 Crores. Identifying the injudicious inter-sectoral and intra-sectoral distribution of water amongst various categories of water users, low water use efficiency, fragmented approach to water resources planning and development, low water user charges and meagre recovery as some of the major problems associated with the management of water resources in the country, 13th Finance Commission made various recommendations. Amongst those an incentive grant of ₹ 5000 crore is recommended for Water sector management to improve its outcome. The commission suggested conditionalities for eligibility of grant which include inter-alia state-wise targets for required rate of recover of Irrigation Service fees (ISF) for each year from 2011-12 to 2014-15.

20. **Dam Rehabilitation and Improvement Programme:** The Government has formulated the scheme for implementation of Dam rehabilitation and Improvement Project (DRIP) with the World Bank assistance under which rehabilitation of 223 Dams in the States of Kerala, Madhya Pradesh, Orissa and Tamil Nadu are proposed to be taken up along with the Dam Safety institutional strengthening in these four States and Strengthening of the Dam Safety Organization at National Level in Central Water Commission.

After signing the agreement with the World Bank, all the DRIP activities will be taken up in this financial year, which will be spread over 6 years. The project will improve the safety and operational performance of selected existing dams with reduced risk of failure. The primary beneficiaries are both urban and rural communities dependent on the concerned reservoirs for their water supply and livelihood as well as all downstream communities, who could be placed at physical and/or operational risk if dam safety is compromised. Also by institutional strengthening component, DSOs will become effective organizations that can take the lead in overseeing that dams remain safe from a structural and operational point of view. The proposed outlay for 2012-13 is ₹23.00 Crores.

23. **Ground Water Management and Regulation:** There is need for scientific planning in development of ground water under different hydrogeological situations and to evolve effective management practices for better ground water governance. The major activities proposed during 12th plan will be as follows- (i) Aquifer Mapping - The outcome of the Aquifer Mapping Programme would

include Identification of areas feasible for ground water development, ground water regulation, rainwater harvesting and Artificial Recharge, yield potential, Depth & design of wells, safe yields, water logged areas and quality problem areas etc. (ii) Strengthening of Ground Water Monitoring Observation Well- during XII plan, 10000 piezometers are proposed to be constructed by CGWB in priority areas and 10% of the wells shall be fitted with DWLR and telemetry system. The increased wells are to be monitored in participatory mode involving Panchayati raj institutions and civil society. The proposed ground water level and water quality monitoring network with well established monitoring protocols would provide base for planning development of ground water as well as adopting timely suitable management measures. During the XII Plan, CGWB proposes to carry out analysis of water samples collected from the above observation wells once in a year using sophisticated water quality equipment. It is proposed to analyze 1.1 Lakh Water samples in 5 years during the plan.

28.01. **Flood Forecasting:** Flood Forecasting has been recognized as an effective tool for flood management by providing advance warning to the flood prone areas. The work of flood forecasting and warning in India involves hydrological observations on interstate rivers and entrusted with the Central Water Commission. The existing data acquisition and transmission system, though time tested needs modernization by adopting present day state of art technology for automatic real time data collection its transmission and flood forecast formulation including dissemination thereof in order to have increased warning time for enabling concerned agencies to undertake mitigation measures for flood disaster risk reduction. CWC started modernization of its flood forecasting network during IX Plan. Flood Forecasting, a non-structural measure, ensures safety to the lives and properties of people during floods. The activity of flood forecasting being performed by CWC is required to be continued during XII Plan along with modernization of the existing network and expansion of automatic data collection, transmission and flood information dissemination.

28.02. **River Management Activities in Border Areas:** All the works i.e., expenditure on bilateral meetings with Nepal, Bhutan, China and Bangladesh, joint hydrological observation with Bangladesh for sharing of Ganga waters under Ganga Water Treaty with Bangladesh of 1996, flood forecasting activities on rivers flowing from Nepal, Bhutan, China to India including charges being paid to the Government of China for receipt of flood data of rivers Sutluj and Brahmaputra, expenditure on survey & investigation works in Nepal territory and establishment cost of Ganga Flood Control Commission (GFCC), etc, except establishment of GFCC, are of continuing nature and also important from the point of view of international cooperation. Therefore, these activities would continue during XII plan. Similarly, GFCC would continue to look into the flood problems of Ganga basin and therefore, its establishment also needs to continue.

The maintenance of flood protection works of Kosi and Ganga Barrages would continue on long term basis. Some of the bank protection works have been completed, but many of these ongoing works would spill over to XII Plan. In addition, some more erosion sites are under discussion with Bangladesh and once agreement is reached, works at those sites would have to be taken up. Therefore, these works would continue during XII Plan.

30. **Farakka Barrage Project:** This Plan scheme is recommended to be continued in view of the importance of the activity of maintenance of Farakka Barrage Project, its function in preservation and maintenance of Kolkata Port Trust and importance of the project for implementation of Indo Bangladesh Ganga water sharing treaty 1996. During XII Plan additional activities of decommissioning and commissioning of all damaged gates and river training bank protection works along rivers Ganga Padma and Bhagirathi including afflux bunds and guide bunds are proposed to be carried out. The scheme is basically a transport sector scheme. The major details of works proposed

under this scheme are (i) Anti-erosion works-Rs300 crore, and (ii) Replacement of damaged gates of barrage Rs 150 crore and (iii) Other works of operation and maintenance of the Project Rs 350 crore.