

Induction Material Of Central Ground Water Board



**Compiled at: Central Ground Water Board, CHQ, NH-IV,
Faridabad**

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**SUBJECTS DEALT WITH BY THE 'CENTRAL GROUND WATER BOARD',
MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA
REJUVENATION**

- Aquifer Mapping for delineation & disposition of aquifer systems to develop aquifer management plan.
- Periodic long term monitoring of ground water regime for creation of time series data base through existing and enhanced ground water observation wells.
- Capacity building in all aspects of ground water development and management through training, information dissemination, education and awareness.
- To enhance ground water sustainability through artificial recharge and rainwater harvesting as a measure for checking the depleting trend of ground water.
- Regulation of ground water development and sustainable management of ground water resources in coordination with State Government Organizations.
- Promoting R&D programme in the field of ground water quality improvement.
- Technical assistance to defence and Govt. organizations for identification of ground water sources for their Water supply.

Allocation of Work at Central Head Quarter

Survey Assessment & Monitoring

Wing Head: Member (SAM)

- National Project on Aquifer Management.
- Preparation, implementation and progress monitoring of Annual Plan of Central Ground Water Board.
- Monitoring of Ground Water regime & development.
- Remote Sensing and GIS.
- Ground Water Modelling studies.
- Data information storage, retrieval, processing and dissemination (NDC & Web hosting).
- E-Governance and IT Plan.
- Preparation of EFC/SFC memo pertaining to activities of Ground Water Management and Regulation.
- Hydrology Project.
- Drawing and Map Section.
- Administrative & technical supervision of activities of the Regional Directorates and Divisional offices of MER/NCCR/SER/ER/NER.

Sustainable Management & Liaison

Wing Head: Member (SML)

- Artificial recharge studies and water conservation.
- Project Appraisal and Perspective Planning for sustainability of ground water resources.
- Matters related to Parliamentary Committees, Parliament Questions and VIP references.
- Conjunctive use studies of surface and ground water.
- Liaison with Central and State Agencies including institutional financing agencies viz., NABARD, CAPART, NGOs and Panchayati Raj Institutions, etc. and other banks etc. for ground water development and management.
- Preparation of EFC/ SFC memo pertaining to respective activities.
- I EC Activities in the Central Ground Water Board.
- Administrative & technical supervision of activities of the Regional Directorates and Divisional offices of NWHR/ NHR/ NWR/ UR/ NR/ SUO, Delhi.
- Also acts as Member Secretary, Central Ground Water Authority. The activities include :
 - a. Regulation of Ground Water Development and Management.
 - b. Policy, planning and implementation of regulatory activities.
 - c. Notification of areas for ground water development and management and monitoring of regulatory directions.
 - d. Issuance of NOC for ground water withdrawal to industrial/infrastructural/mining projects.
 - e. Legal matters pertaining to CGWA.

Exploratory Drilling & Material Management

Wing Head: Member (EDMM)

- Activities Related to Exploratory Drilling and its Monitoring.
- Preparation of EFC/SFC for their activities.
- Activities Related to Material Management.
- Activities Related to Stores, procurement of machinery & equipments etc. (including scientific instruments)
- Preparation of Tenders & EOI etc. for Outsourcing of work for scientific and engineering activities.
- Administrative & technical supervision of activities of the Regional Directorates and Divisional offices of SR/ SWR/ SECR/ KR.

Water Quality & Technology Transfer

Wing Head: Member (WQ & TT)

- All activities related to Water Quality.
- Assessment of ground water resources.
- Preparation of Hydrogeological atlases, maps etc.
- Plan and monitor Geophysical activities of the Board.
- Plan and monitor Hydrological and Hydrometeorological activities of the Board.
- Benchmarking and technological upgradation of CGWB.
- Special studies on various aspects.
- International & Bilateral cooperation, symposia, National/ International Trainings/ Awards/ Fellowships etc.
- Preparation and publication of Bhujal News
- Liaison with Water Quality Assessment Authority (WQAA)/Research Institutions/ Universities for R&D schemes.
- Preparation of EFC/ SFC memo pertaining to respective activities.
- Liaison with to Water Quality Assessment Authority.
- All chemical labs & accreditation of Chemical labs.
- Ground Water Pollution Studies, Isotope studies/Chemical cell planning and monitoring.
- Climate change studies under National water mission.
- Technology transfer to National & International institutions and various Central / State organizations
- Water Quality & Technology Transfer is responsible for administrative and technical supervision of activities related to water quality, assessment of water Resources.
- Administrative and technical supervision of activities of the Regional Directorates and Divisional offices of WR/ WCR/ CR/ NCR.

Rajiv Gandhi National Ground Water Training & Research Institute

Wing Head: Member (RGI)

- Rajiv Gandhi National Ground Water Training and Research Institute (RGI) located at Raipur, Chhattisgarh caters to the training requirements of Central Ground Water Board and also many Central and State Govt. Organizations, Academic Institutes, NGOs etc.
- During XII Plan, RGI under HRD and Capacity Building Scheme of MoWR is implementing a three tier training programme keeping in view the requirements of the National Project on Aquifer Management. These trainings will enable creation of a trained workforce for implementation of National Project on Aquifer Management and overall sustainable development of ground water resources.
- As a part of this three tier training programme, during the XII Plan period a total of 174 Tier I (National Level) training courses are proposed in which professionals from Central/State Govt. departments, Academic Institutions etc are to be trained. Under Tier II (State Level) training programme, a total of 222 courses are proposed in which ground water professionals, NGOs, VOs, PRIs etc are proposed to be trained. Similarly, 1250 Tier III (Block Level) training programme are proposed in which NGOs, PRIs, Progressive Farmers and other stakeholders at grassroots level are to be trained.

Finance & Accounts

Wing Head: Member (Finance)

- Compilation and submission of the Budget Estimates, Revised Estimates, Performance Budget, Notes for Demands for Grants, Supplementary Grants, Annual Plan, Five year Plan proposals of the Board to the Ministry.
- Allocation of budget to all the offices of the Board and to monitor and control the expenditure as per the sanctioned budget.
- Compilation and submission of the expenditure returns to the Ministry and Controller of Accounts etc.
- Scrutiny of the cases relating to procurement of stores, equipment, machinery etc. from financial angle.
- To attend and settle the audit paras, audit notes, audit objection etc and to prepare a disposal sheet of outstanding paras when ever so required.
- Advise and apprise Chairman and Members of the Board in respect of financial matters of the Board from time to time.

Administration

Wing Head: Director (Administration)

- All activities related to Administration of the Board.
- _____
- _____
- _____

**Year-wise and Activity -wise Financial Outlay for the XII Plan period for
the Scheme of Ground Water Management & Regulation**

(Rs. in Crore)

S. No.	Activities	2012-13 (Actuals)	2013-14	2014-15	2015- 16	2016-17	Total
1	Aquifer Mapping						
IA	Aquifer Mapping on 1:50,000 scale	39.21	100.73	217.16	523.08	1071.27	1951.45
IB	Aquifer Mapping on 1:10,000 scale		1.75	37.09	29.40	31.46	99.70
	Sub-total (I)	39.21	102.48	254.25	552.48	1102.73	2051.15
	Rounded off	39.00	102.00	254.00	553.00	1103.00	2051.00
II	Participatory Ground water Management						
IIA	Ground water Management Programme Facilitation		0.10	32.93	65.94	233.18	332.15
IIB	Participatory Outreach Programme for end users			12.40	24.68	100.15	137.23
IIC	Travel, Contingency, overhead, impact evaluation and service charges			10.00	20.00	76.00	106.00
	Sub-Total (II)	-	0.10	55.33	110.62	409.33	575.38
	Rounded off	-	0.10	55.00	111.00	409.00	575.00
III	Technological upgradation	15.95	86.26	95.25	43.93	63.79	305.18
	Rounded off	16.00	86.00	95.00	44.00	64.00	305.00
IV	Ground Water Monitoring, Assessment, Regulation, Publication, Seminars, Awards, Domestic travel Expenses, Office Expenses, Petrol, Oil and lubricants, Salary(P), Spill over works	62.32	86.36	71.29	75.61	92.78	388.36
	Rounded off	62.00	86.00	71.00	76.00	93.00	388.00
	Grand Total (I to IV)	117	274	475	784	669	3319

Brief Write-up about Regional, Divisional and State Unit offices of the Central Ground Water Board

The Board has 18 Regional offices, each headed by a Regional Director, supported by 17 Engineering Divisions headed by Executive Engineer and 11 State Unit Offices for undertaking various field activities.

Regional offices:

Divisional Offices:

National Ground Water Training & Research Institute (RGNGT&RI):-

The Rajiv Gandhi National Ground Water Training & Research Institute (RGNGT&RI), which coordinates the capacity building activities of the Board functions from the CGWB, Raipur.

VACANCY POSITION OF SCIENTIFIC POSTS as on 01.03.2015

	<i>Sanctioned</i>	<i>Filled</i>	<i>Vacant</i>	<i>Net Vacancy</i>			
				<i>DR</i>	<i>PR</i>	<i>Ex-Cadre</i>	<i>Total</i>
'A' (Gazetted)	403	308	95	56	37	2	95
'B' (Gazetted)	219	115	104	64	40		104
Group B (Non Gazetted)	179	97	82	60	22		82
Group C	83	35	48	43	5		48
G. TOTAL	884	555	329	223	104	2	329

Vacancy Position of Engineering Establishment, as on 01.03.2015

<i>Group</i>	<i>Sanctioned</i>	<i>Filled</i>	<i>Total Vacant</i>	<i>Vacant</i>		
				<i>Direct</i>	<i>Promotion</i>	<i>Net Vacancy</i>
'A' (Gazetted)	56	42	14	02	12	14
'B' (Gazetted)	110	38	72	28	44	72
'B' (Non-Gazetted)	265	148	117	12	105	117
'C' (Non-Gazetted)	1462	1159	303	258	45	303
Total A+B+C	1893	1387	506	300	206	506

Vacancy Position of Ministerial cadre as on 01.03.2015

<i>Group wise Detail</i>	<i>Sanction ed</i>	<i>Filled</i>	<i>Vacant</i>	<i>Post under revival</i>	<i>Detail of Vacancy</i>				<i>Plan</i>	<i>Non Plan</i>
					<i>Direct</i>	<i>Promotion</i>	<i>Ex-cadre</i>	<i>Total</i>		
<i>Group-A</i>	8	3	5	-	0	5	0	5	3	5
<i>Group-B (Gazetted)</i>	36	20	16	-	0	16	0	16	9	27
<i>Group-B (Non-Gazetted)</i>	203	172	31	-	2	29	0	31	23	180
<i>Group-C</i>	1136	771	365	-	154	208	3	365	34	1102
<i>Total</i>	1383	966	417	-	156	258	3	417	69	1314

Topics of Interest

Organizational History of Central Ground Water Board:

The Central Ground Water Board, as the National apex organization under the Ministry of Water Resources, River Development and Ganga Rejuvenation, Govt. of India is vested with the responsibilities to carry out ground water management studies, exploration, monitoring of development, management and regulation of country's vast ground water resources. A brief history of the organization is as follows:

- An Exploratory Tube wells Organisation (ETO) was created in 1954 as a subordinate office under the Ministry of Food, Agriculture, Community Development and Cooperation (Department of Agriculture) to carry out ground water exploration in the alluvial areas of the country to delineate the regional aquifer systems and evaluate their yield potential.
- On 3rd October 1970 the ETO was renamed as Central Ground Water Board.
- At that time, it was felt that there was need to have a national unified organization for all works related to ground water surveys, exploration, assessment and management in the country. On the recommendations of the Committee on Science and Technology, the Standing Group of Ministers on Science and Technology chaired by Prime Minister Smt. Indira Gandhi, in its meeting on Sept 9, 1971 approved the merger of Ground Water Wing of the Geological Survey of India (GSI) with the Central Ground Water Board.
- The merger was effected on August 1, 1972 which gave all the administrative and financial powers and flexibility of operation necessary for CGWB's effective functioning.
- With this, Central Ground Water Board was constituted as an apex organization at the national level with a full time Chairman and two full time Members namely the Chief Hydrogeologist and the Chief Engineer.
- In order to streamline staffing pattern, SIU carried out detailed study (1980) and gave its report on staffing pattern of Head Quarters, Regional, Divisional and District Unit Office.
- A High Level Multi-disciplinary Committee (HLMC) was set up in 1989 to review the role, functions and responsibilities of CGWB in terms of achievements and developments over the past three decades. The HLMC report (1990) highlighted the importance of ground water development and indicated the measures to be taken for achievement of tasks and mandate assigned to CGWB. The Committee reviewed the functions and gave the revised mandate. The government of India accepted some of the recommendations of the Committee. The mandate of CGWB was revised and the post of Chairman was upgraded to the level of Additional Secretary. The posts of Chief Hydrogeologist and Chief Engineer including 2 more posts were also upgraded and re-designated as Members in the level of Joint Secretary. Four wings Survey, Assessment and Monitoring; Sustainable Management & Liaison; Training & Transfer of Technology; Exploratory Drilling & Material Management; each headed by Member were created to fulfil the revised mandate.
- In the year 2013, one more post of Member (RGI) has been created for the Rajiv Gandhi National Ground Water Training & Research Institute and the post of Member (T&TT) has been re-designated as Member (Water Quality & Technology Transfer).
- In the year 2014, one post of Member (Finance) has been created to assist the Board in financial matters.
- In order to provide scientific and technical support to the mandate, Central Ground Water Board conduct training programmes for various levels of ground water professionals/ sub-professionals from CGWB, States, Universities and NGOs. The courses include induction level courses for newly recruited scientists, engineers and drilling professionals; refresher courses for scientists on advanced techniques of ground water investigation, development and management; and training of trainers.
- The Board had established Rajiv Gandhi National Ground Water Training & Research Institute in 1997 at Raipur. Infrastructure facilities were created by redeploying officers and staff from Central Ground Water Board. The building of the Institute has since been taken over by the Chhattisgarh State to house Legislative Assembly in 2000. The institute is being re-launched at Raipur in the newly allotted land by the Government of Chhattisgarh, Presently the training courses are being conducted at

hired building.

- Central Ground Water Authority has been constituted under Section 3 (3) of the Environment (Protection) Act, 1986 to regulate and control development and management of ground water resources in the country.
- The Authority has been conferred with the following powers: (i) Exercise of powers under section 5 of the Environment (Protection) Act, 1986 for issuing directions and taking measures in respect of all the matters referred to in sub-section (2) of section 3 of the said Act.(ii) To resort to penal provisions contained in sections 15 to 21 of the said Act.(iii) To regulate and control, management and development of ground water in the country and to issue necessary regulatory directions for the purpose. (iv) Exercise of powers under section 4 of the Environment (Protection) Act, 1986 for the appointment of officers.

Dynamic Ground Water Resources:

Ground Water Resources Assessment is carried out at periodical intervals jointly by State Ground Water Departments and Central Ground Water Board under the overall supervision of the State Level Committee on Ground Water Assessment. Previous such joint exercises were carried out in 1980, 1995 and 2004 and 2009.

The assessment involves estimation of dynamic ground water resources or annual replenishable ground water resources (recharge), annual ground water draft (utilization) and the percentage of utilization with respect to recharge (stage of development). The assessment units (blocks/ watersheds/mandals/firkas) are categorized based on Stage of Ground Water Development (Utilization) and the long term water level trend. The methodology for assessment is broadly based on Ground Water Resources Assessment Methodology, 1997 with additional inputs from Ground Water Estimation Methodology in Hard Rock Terrain (2004) and R&D Advisory Committee on Ground Water Estimation (2010).

Rainfall is the main source of annual replenishable ground water resource. Most part of India receives rainfall mainly during SW monsoon. Major part of country including Northern, Central and Eastern India receives annual normal rainfall between 75 and 150 cm. Highest rainfall of more than 250 cm is received in the North Eastern States and along West Coast in the Konkan region whereas western Rajasthan receives about 15 cm of rainfall in a year. The average rainfall for the three year period (2009 to 2011) is within the normal range for major parts of the country. Excess rainfalls during this period have been recorded mainly in West Rajasthan, Saurashtra and Kutch whereas NE region and meteorological subdivision of eastern Uttar Pradesh recorded deficient rainfall.

The aquifer properties of rock formations have significant influence in ground water recharge. Porous formations like alluvial formations in the Indo-Ganga Brahmaputra basin having high specific yield values and are the most important repository of ground water resources. Ground water occurrences in the fissured formations, which occupy almost two-third part of the country including peninsular India, on the other hand are limited to weathered, jointed and fractured portions of the rocks. Ground water level is the basic indicator of the ground water regime of an area.

The annual replenishable ground water resources have been assessed as 433 bcm. Keeping an allocation for natural discharge, the net annual ground water availability is 398 bcm. The annual ground water draft (as on 31st March, 2011) is 245 bcm. The Stage of ground water development works out to be about 62%. The development of ground water in different areas of the country has not been uniform. Out of 6607 assessment units (Blocks/ Mandals/ Talukas/Firkas) in the country, 1071 units in various States have been categorized as 'Over-exploited' i.e. the annual ground water extraction exceeds the net annual ground water availability and significant decline in long term ground water level trend has been observed either in pre-monsoon or post- monsoon or both. In addition 217 units are 'Critical' i.e. the stage of ground water development is above 90 % and within 100% of net annual ground water availability and significant decline is observed in the long term water level trend in both pre-monsoon and post-monsoon periods. There are 697 semi-critical units, where the stage of ground water development is between 70% and 100% and significant decline in long term water level trend has been recorded in either Pre-monsoon or Post-monsoon. 4530 assessment units are Safe where there is no decline in long term ground water level trend. Apart from this, there are 92 blocks/firkas completely underlain by saline ground water.

There is no significant change in the overall Stage of Ground water development from 61% in 2009 to 62% in 2011. As was noticed in the previous estimation, the over-exploited areas are mostly concentrated on three parts iii of the country. In north western part in Punjab, Haryana, Delhi, Western Uttar Pradesh where though replenishable resources is abundant but there have been indiscriminate withdrawals of ground water leading to overexploitation. In western part of the country, particularly in Rajasthan, Gujarat where due to arid climate, ground water recharge itself is less leading to stress on the resource and in peninsular India like Karnataka, Andhra Pradesh and Tamil Nadu where due to poor aquifer properties, ground water availability is less. In some areas of the country, good continuous rainfall and management practices like ground water augmentation and conservation measures through government and private initiatives have resulted in improvement in ground water situation which is also reflected in the change in Category from Over-exploited and Critical (in 2009 assessment) to other categories (in 2011 assessment).

Ground water resources assessment like other fields of science requires continuous refinements. The issue becomes more relevant considering the strong linkage between assessment and ground water management. Some of the suggestions to bring in further refinements in the ground water resources assessment approach are – aquifer characterization and parameter estimation, ground water assessment on a larger scale (smaller assessment unit) for better management of the resources, holistic water balance studies taking into consideration all the hydro-meteorological components of the hydrological cycle, case studies on quantitative evaluation of ground water management interventions and consequent changes in ground water assessment.

Master Plan for Artificial Recharge to Ground Water:

India is a vast country with diverse geological, geomorphological and hydrometeorological conditions, which give rise to widely varying ground water situations. The hydrogeological units are broadly classified into unconsolidated, consolidated and semi-consolidated formations. Indo-Gangetic plains and coastal areas are occupied by unconsolidated formations. Almost two third of the country, mainly Peninsular India is covered by consolidated formations. Semi-consolidated formations occupy parts of both Peninsular and extra Peninsular India. Proliferation of ground water development by stakeholders of various sectors has resulted in water scarcity, quality deterioration and other related development problems in many areas of the country. As a result, substantial decline in ground water levels is being observed both in hard rock terrain as well as alluvial areas. Ground water quality in coastal area has also been affected due to excessive ground water development and resultant sea water ingress. Pollution of ground water due to unplanned disposal of industrial effluent and sewage is also on the rise. The ground water development in such areas needs to be watched and augmented through suitable recharge measures to provide sustainability and protection to ground water reservoir.

Central Ground Water Board (CGWB) prepared a “National Perspective Plan for Recharge to Ground Water by utilizing Surplus Monsoon Run-off” in 1996. The availability of non-committed surplus monsoon run-off in 20 River Basins of the country was analyzed vis-a-vis the sub-surface available space under different hydrogeological situations for saturating the vadose zone to 3m below ground level. It was estimated that it is possible to store 21.4 M.ha.m of surplus monsoon runoff in ground water reservoir, out of which 16.05 M.ha.m can be utilized. The plan presented a conceptual framework for utilization of surplus monsoon run-off for artificial recharge of ground water.

CGWB had prepared a Master Plan for Artificial Recharge to Ground Water in the year 2002. The Master Plan envisaged the number of artificial recharge and water conservation structures in the country as 39 lakh at an estimated cost of Rs. 24,500 crores. Based on the above, State Agencies and CGWB have taken up the construction of artificial recharge structures on a large scale under State/Central sector schemes.

Problems that may arise in coastal and hard rock aquifers and over-development in isolated pockets in Safe blocks are also to be addressed in coming years. The ground water quality issues also need to be focused on new areas of integrated approach in rain water harvesting and recharge to ground water. Considering this, some changes in the methodology in artificial recharge are proposed.

Based on the experience gained under demonstrative artificial recharge program and artificial recharge to ground water through dug well scheme, the need for identification of specific new areas in different States for additional artificial recharge to ground water was felt. To implement schemes in an effective manner, State-wise presentation of the base data on existing recharge structures and proposals in the pipeline is required. Also, the feasibility of diverting flood water or surplus run off from

rainfall from one region to another region is examined. The new guidelines for taking up recharge schemes without affecting the existing surface water storage structures are also envisaged.

The Chairman, CGWB, constituted a Committee to prepare new guidelines for revision of Master Plan for artificial recharge to ground water for the country and the Committee submitted the report in September 2008. The committee recommended broad guidelines for selection of priority areas schemes for different agroclimatic areas and use of transported water for recharge, creation of data base on existing recharge structures for planning any new schemes in a given time and other recommendations. The demand side management of ground water resources was given stress by the Committee.

Based on the recommendations of the Committee, the present revised Master Plan is prepared on the basis of hydrogeological parameters and hydrological data base available for each State. The identification of feasible areas for artificial recharge to ground water was made on the basis of depth and declining trend of ground water levels. The decadal average depth to water level for post monsoon period was taken to estimate the sub-surface storage space for recharge and volume of water needed to saturate the vadose zone to 3m below ground level. The quantification of surplus monsoon run-off was made for the identified areas/sub-basins. The computations for surface water available to harness in each identified areas were made to plan the feasibility of different artificial recharge structures. Based on the hydrogeological situation of each of the states the feasible number of different artificial recharge structures and their cost estimates were made.

A total area of about 9,41,541 sq.km. has been identified in various parts of country where artificial recharge to ground water is feasible. This also includes hilly terrain of Jammu and Kashmir, Himachal Pradesh, Uttarakhand, North Eastern States & Islands where the structures are proposed to improve the sustainability of springs and freshwater.

It is estimated that annually about 85,565 MCM of surplus run-off is to be harnessed to augment the ground water. Most of the basins of the country, particularly in Peninsular India are having marginal/negligible surplus runoff, where considerable space in underground reservoirs is available. Hence, surplus runoff is not available for recharge to ground water in various areas, which otherwise need artificial recharge. The surplus runoff available in North Eastern States, Himachal Pradesh and Islands is very high and due to limited space available underground for recharge, the surplus run off calculation is not separately given. However, for the stabilization of springs and improving the ground water scenario in existing localized ground water extraction areas, few recharge structures are identified and will be executed by considering the local ground slope and vulnerability of landslides, etc. in these areas.

In rural areas, suitable structures like percolation tanks, check dams, nala bunds, gully plugs, gabion structures etc. and sub-surface techniques of recharge shaft, well

recharge etc. have been recommended. Provision to arrest ground water flow through ground water dams has also been made in some states.

The revised Master Plan envisages construction of about 1.11 crore artificial recharge structures in urban and rural areas at an estimated cost of about Rs. 79,178 crores. This comprises of around 88 lakh recharge structures/ facilities utilizing rain water directly from roof top and around 23 lakh artificial recharge and rain water harvesting structures for conserving surplus runoff and recharging ground water in aquifers. The break-up includes around 2.90 lakh check dams, 1.55 lakh gabion structures, 6.26 lakh gully plugs, 4.09 lakh nala bunds/cement plugs, 84,925 percolation tanks, 8281 sub-surface dykes, 5.91 lakh recharge shaft, 1.08 lakh contour bunds, 16235 injection wells and 23172 other structures which includes point recharge structures recharge tubewells, stop dams, recharge trenches, anicuts, flooding structures, induced recharge structures, weir structures etc. In North Eastern States and Sikkim, emphasis has been given to spring development and 2950 springs are proposed for augmentation and development.

The areas having existing recharge structures are recommended to revisit for evaluating their performance and supplementing advanced techniques such as recharge shafts, recharge bores and tube wells for improving the overall efficiency of recharge structures.

The need for conservation of ground water has been emphasized in urban areas. The roof top rainwater harvesting is proposed both by augmenting the ground water storage as well as by storing it in specially built tanks. It is estimated that 88 lakh roof top rainwater harvesting structures are feasible in the country at an estimated cost of Rs. 16,266 crores. The total cost of the revised Master Plan for Artificial Recharge to Ground water is estimated around Rs. 79,178 crores. The cost estimates have been computed on the basis of costs of various structures in the year 2011. The actual implementation of the plan is suggested to be taken up in a phased manner over a time period of 10 years. Part of the estimated cost of the order of Rs 15,000 crores may be utilized by Ministry of Water resources, Government of India to fund the recharge projects to States as central assistance and also for taking up action research program like construction of injection wells in identified deeper aquifers of the country.

The ongoing MGNREGA work will be also used to improve the existing rain water harvesting and recharge structures, creating specific supply channels and desilting of trenches, ponds etc. The community participation at Panchayat level for such work through concerned central ministries is estimated at Rs 20,000 crores for a period of 10 years.

The stakeholder industries (existing/new) would be involved in implementing rain water harvesting and recharge to ground water as part of Ministry of Environment & Forest directions with technical guidance of CGWB and state agencies. The expected contribution from industrial sector is estimated at Rs. 20,000 crores. The balance of about Rs. 24,178 crores would be spent by State/Central Government Departments under various programmes by involving the line Departments in the State, particularly

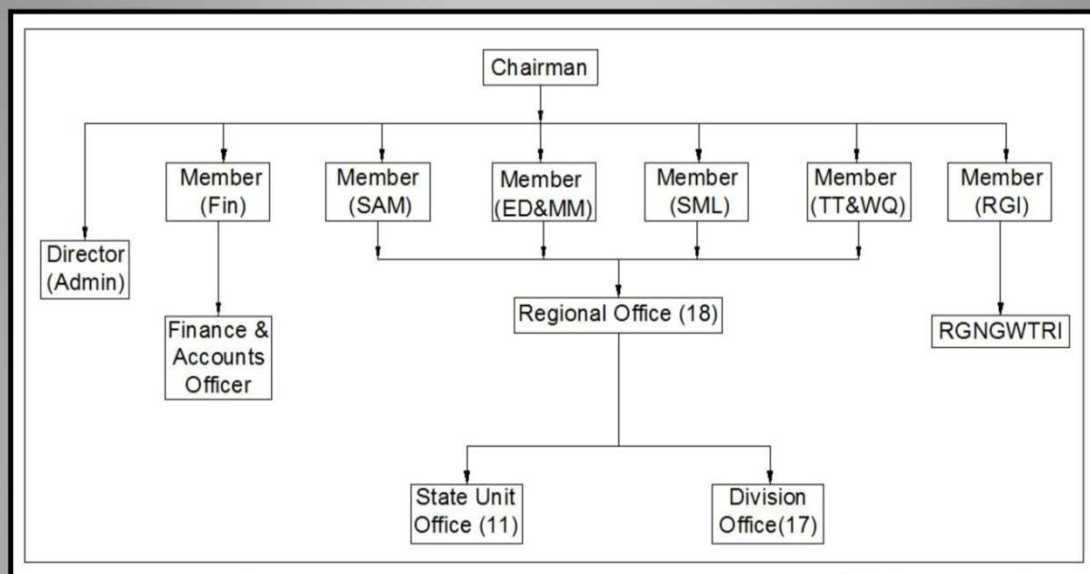
Integrated Watershed Development Department, Forest Department, Public Works Department, Horticulture Department, Roads and Buildings Department, Agriculture Department and Water Supply Departments.

List of Chairman

DETAILS OF PERSONS WHO OCCUPIED THE POST OF CHAIRMAN, CGWB FROM MARCH 2002

Sl. No.	Name S/Shri	Period		Remarks
		From	To	
1.	Mukul Joshi Joint Secretary (A), MOWR	01.03.2002	13.03.2002	Additional Charge
2.	J.S. Burjia Joint Secretary (A), MOWR	20.03.2002	21.03.2003	Additional Charge
3.	S.S. Chauhan Member (ED& MM) , CGWB	22.03.2002	10.08.2003	Chairman, CGWB, Current Charge
4.	J.S. Burjia Joint Secretary (A), MOWR	11.08.2003	18.02.2004	Additional Charge
4.	P.C. Chaturvedi	19.02.2004	31.01.2005	Regular Chairman through DPC.
5.	Dr. Saleem Romani	19.02.2004	31.01.2005	Regular Chairman through DPC.
6.	K.S. Ramasubban Joint Secretary (A), MOWR	01.01.2007	31.03.2007	Additional Charge
7.	B.M. Jha	01.04.2007	31.08.2010	Regular Chairman through DPC.
8.	Dr. S.C. Dhiman	01.09.2010	30.09.2012	Regular Chairman through DPC under relaxation clause.
9.	Sushil Gupta	01.10.2013	31.7.2014	Regular Chairman through DPC under relaxation clause.
10	Ms. Urvilla Khati, JS	01.08.2014	31.10.2014	Addl. Charge
11	Dr. R.C. Jain, Member	1.11.2014	30.11.2014	Current Charge
12	K.B. Biswas, Member	1.12.2014	continue	Additional Charge

Organizational Chart of Central Ground Water Board



Central Ground Water Board is a multidisciplinary Scientific Organization headed by Chairman and supported by five technical Members along with Member (Fin) and Director (Adm.) heading the Finance and Administrative wings respectively.

Officers in Central Ground Water Board

Scientific Discipline

Sr. No.	Group	Post
1.	A	Chairman
2.	A	Member
3.	A	Regional Director Scientific / Engineering
4.	A	Scientist "D"
5.	A	Scientist "C"
6.	A	Scientist "B"
7.	A	Programmer
8.	A	Systems Analyst
9.	A	Artist
10.	B(G)	Assistant Artist
11.	B(G)	Assistant Chemist
12.	B(G)	Assistant Geophysicist
13.	B(G)	Assistant Hydrologist
14.	B(G)	Assistant Hydrogeologist
15.	B(G)	Officer Surveyor
16.	B(G)	Senior Cartographer
17.	B(G)	Chief Draftsman

Engineering Discipline

Sr. No.	Group	Post
1	A	Superintending Engineer
2	A	Executive Engineer
3	A	Assistant Executive Engineer
4	B(G)	Assistant Engineer
5	B(G)	Driller-in-charge
6	B(NG)	Senior Technical Assistant (Mechanical)
7	B(NG)	Foreman
8	B(NG)	Assistant Foreman
9	B(NG)	Junior Engineer
10	B(NG)	Store Superintendent
11	B(NG)	Driller-Cum-Mechanic
12	B(NG)	Master Mechanic
13	B(NG)	Master Electrician

.1 Ministerial Discipline

Sr. No.	Post
Group "A" Posts	
1	Member(Finance)
2	Director (Administration)
3	Finance & Accounts Officer
4	Deputy Director (OL)
5	Administrator
6	Sr Administrative Officer
7	Library & Information Officer
8	Assistant Director(OL)
Group "B" Gazetted Posts	
9	Administrative Officer
10	Senior Private Secretary
11	Private Secretary