Revised Action Taken Report on the 9th Report of 2021 of C&AG on ground water management (submitted in September 2023)

S.I. No	Recommendation	Action taken/ Proposed to be taken
1	The Department may ensure that assessment of ground water resources, water level and quality is done at the prescribed intervals so as to maintain current data on the status of ground water in the country and to utilise such data for planning management strategies.	Periodic Assessment of dynamic ground water resources is done jointly by CGWB and the respective state governments. Last such assessment was done for the year 2022 and the reports have already been published. It has been decided to assess the dynamic ground water resource on an annual basis for every water year (June to May) and accordingly a Resolution No. T-13014/1/2019 dated 8th Feb 2022 has been published by this Department. For the year 2022 the Assessment has been carried out jointly by the Central Ground Water Board and State/UT Nodal/Ground Water Departments under the guidance of state level committees and overall coordination of the Central Level Expert Group constituted by DoWR, RD & GR, MoJS. Tthe entire assessment has been done using the GIS based web portal 'India-Groundwater Resource Estimation System (IN-GRES)'. Process for the year 2023 has already been initiated. Copy of the resolution and gazette dated 8th February 2022 is given in Annexure 2.3.
2	The Department may take action to increase the number of observation wells with Digital Water Level Recorders and Telemetry to monitor ground water in line with the targets	CGWB has already initiated process for installation 14,260 DWLRs with telemetry system (7,000 under PIB project, 2000 under GWM&R scheme scheme and balance 5,260 under NHP). The activity is targeted to ne completed by 31st March 2026. Out of these 14260, i. tenders for 5260 DWLRs under NHP has already been awarded and the work is in progress.

	committed under the Ground Water Management and Regulation Scheme/ National Hydrology Project.	ii. tenders for construction of 7000 piezometers with DWLRs under PIB project have already been initiated ii.tenders for installation of DWLRs under GWM&R will be initiated in the current year, 2023-24.
3	The Department may take expeditious action to revise the Model Bill and also pursue with the remaining States for bringing comprehensive laws/regulations to deal with ground water management.	Ground water being a State subject, the Model Ground Water Bill prepared by the Union Government is circulated to the States since 1970 to facilitate the formulation of groundwater legislation by the States. The States are being regularly pursued for enacting ground water legislations. The model bill has been revised several times taking into consideration the various legal pronouncements concerning ground water and hydrogeological scenario. So far 20 States/ UTs have enacted Ground Water legislation. Further, Central Ground Water Authority (CGWA) has been constituted under section 3 (3) of the "Environment (Protection) Act, 1986" for the purpose of regulation and control of ground water development and management in the Country. The latest guidelines for control and regulation of groundwater extraction with pan-India applicability was notified by the Ministry on 24 September 2020. In addition, this Department has time to time advised the States for creation of their own Groundwater Boards and regulation for groundwater extraction within the overall ambit of Central Government guidelines. Latest reminder has been issued through DO letter from Secretary, DoWR to Chief Secretaries on 11 Oct 2021. To tackle all water related matters in a holistic and unified manner a draft model bill i.e. "Model State Integrated Water Resource Management Bill 2023" is under finalization in Ministry of Jal Shakti.
4	The Department should address the human resource constraints of CGWB/CGWA by also engaging with other experts and going for strategic partnerships to ensure smooth	Following steps have been taken for strengthening of manpower in CGWB. • As on date around 70% of the posts in scientific cadre are filled. Proposals for filling remaining vacancies (30%) have been sent to UPSC/SSC. The recruitment is being taken up in mission mode. It is expected that the vacancy percentage will be brought down from 30% to 12% by December, 2023. (Requisition sent to UPSC/SSC are attached)

	functions in processes of groundwater management and governance.	• 16 dossiers of Scientist "B" and 20 dossiers of Senior Technical Assistant have been received and it is expected that all may join by the end of August 2023. Thus the percentage of filled Scientific cadre by end of August 2023 will be 75% and by the end of December 2023, 71 posts of Asstt. Hydrogeologist are expected to be filled up. Therefore, the filled percentage of scientific cadre by the end of December will be 87%. • In addition to this a comprehensive proposal for cadre review including creation of additional Scientific and technical manpower is under consideration of DoP&T. (Summary of cadre review proposal is attached) • In the meantime, young professionals have been engaged on temporary basis to fulfill the immediate requirements. (Approval copy of Young Professional attached) 1. UPSC proposals given in ***Annexure-2.9(i)*** ***2.*** SSC proposals given in ***Annexure-2.9(i)*** 3. Cadre review proposal given in ***Annexure-2.9(ii)*** 4. YP approval copy given in ***Annexure-2.9(iii)***
5	For effective implementation of Ground Water Regulation and Management, Department should address the human resource crunch reported by the State Governments and also encourage them to adopt latest technologies for assessment and monitoring of ground water.	A separate proposal for strengthening of Central Ground Water Authority (CGWA) has been submitted to Ministry of Finance. Further, this Department has advised the States/UTs through DO letter dated 04 January 2021 written by Secretary (DoWR) to all the Chief Secretaries of States/UTs regarding posting of adequate number of officials in their State Ground Water Department/State Ground Water Authority and for delegation of adequate financial/administrative powers for their effective functioning. To encourage the States to adopt latest technologies, the National Hydrology Project is providing support for strengthening of water related infrastructure viz. installation of DWLRs etc and capacity building of professionals in State Government. Rajiv Gandhi National Ground Water Training and Research Institute (RGNGWTRI), Raipur carries out trainings for professionals of State Government on technical aspects related to ground water assessment and management. Assessment of dynamic ground water resources is an important activity of CGWB which is carried out in association with the State Governments. To facilitate automated assessment of ground water resources a software/web-based application "INDIA-GROUNDWATER RESOURCE ESTIMATION SYSTEM (IN-GRES) (https://ingres.iith.ac.in/)" has been developed by CGWB in

		association with IIT-Hyderabad. IN-GRES provides a common and standardized platform for GW Resource Assessment for the entire country. Concerned officers of the State Governments have been imparted training on use of the cloud-based system. For the first time, the entire assessment has been done using the GIS based web portal 'India- Groundwater Resource Estimation System (IN-GRES)'.
6	Central Ground Water Authority and State agencies need to develop effective coordination with various other agencies granting consents to projects to ensure that the requisite permissions to extract ground water are also obtained.	CGWA has already developed a mechanism to invite member(s) of State Ground Water Authority/Agency in the meeting of CGWA on rotational basis to have close interaction with them and also to have uniformity in opinion as far as sustainable management/regulation of groundwater resources are concerned. Further, meeting with concerned officers of State Governments is also being held at the level of this Department to resolve any pending issues which is beyond the powers of CGWA. Further, CGWA is also interacting with licensing agencies like FSSAI, BIS, MoEF&CCetc to ensure that the NOC for groundwater extraction is included in the Consent to Operate. As per available information, FSSAI &MoEF&CC have already included this provision whereas matter is being pursued with other agencies/organization.
7	Central Ground Water Authority and State agencies may develop a mechanism to ensure timely processing of requests for ground water extraction.	To ensure timely processing of requests for ground water extraction, CGWA has made the NOCAP web-portal fully operational and all applications are being processed through this portal only. Further, NOCAP portal has also been fully integrated with National Single Window System developed by the Department for Promotion of Industry and Internal trade (DPIIT) for ease of filing of applications by the proponents at one place. In oder to make the NOC issue process decentralized, effective and less time consuming, powers for issuances of NOC upto 100 KLD has been delegated to the Regional Directors. Need for timely issuance of NOC by State GW Authorities was stressed by the Secretary, DoWR in meeting of all States taken by him on 5th April 2023.
8	Central Ground Water Authority and State agencies need to establish a system for periodic inspections and review of the	Guidelines to regulate and control ground water extraction in India were notified by the Ministry of Jal Shakti vide the Gazette Notification dated 24th September, 2020. Amendments thereof have also been issued vide Gazette notification dated 29.03.2023. The guidelines, inter alia include the following provisions:

	projects to ensure compliance to the conditions mentioned in the No Objection Certificates.	Non-compliance of conditions mentioned in the No Objection Certificate may be taken as sufficient reason for cancellation of no objection certificate accorded/ non-renewal of No Objection Certificate.
9	Central Ground Water Authority and State agencies need to enforce penal provisions strictly as per the Environment Protection Act/State Acts/ Rules against the cases of violation of conditions mentioned in the No Objection Certificates for effective ground water regulation.	• Section 16 of S.O. 3289(E) dated 24.09.2020 specifies the amount of penalty for non-compliance of various conditions specified in the NOC. Periodic site inspections/field verifications are being carried out by CGWA/CGWB officers posted at Regional Director offices of CGWB to check compliance of NOC conditions/illegal extraction of groundwater by the proponents. Inspections are also carried out before the renewal of NOC for ground water withdrawal. Further, NOC for groundwater extraction is renewed only after the compliance of all the conditions is done by the proponents and penalty is imposed for non-compliance of conditions and for illegal extraction of groundwater. In addition, penalty/environmental compensation to the tune of Rs 56.20 Cr has been realizedby CGWA against 4441proponents who were found extracting groundwater illegally/violated NOC conditions since issue of new guidelines dated 24 Sep 2020.
10	Given the targets of the Department and limited expenditure incurred vis a vis budget outlay, the Department may review its strategy for utilising the allocated funds and completing the planned activities under the Ground Water Management and Regulation Scheme. The Department may	As informed earlier CGWB had hired a PMC and had outsourced many activities. It had also entered into MoA with exeprt agencies for completion of the NAQUIM studies. The entire targeted area has been covered by March 2023. The GWMR Scheme has been approved for continuation till 2026. Activities and budget utilization under the GWM&R scheme are being closely monitored at various levels in CGWB and the Ministry.

	also consider putting in place a business continuity plan for the scheme.	
11	The Department may develop a strategy for expeditious completion of aquifer mapping and modelling of the identified area within a reasonable time period.	As per the timelines, the entire identified area of ~25 lakh km^2 has already been covered by March 2023. Ground water modeling is being taken up by the CGWB in identified areas as per the need. Modeling studies for around 4.00 lakh sq km areas mostly comprising of water stressed pockets have already been finalized through in-house studies and in partnership with IIT, Kanpur and IISC, Bengaluru .
12	Central Ground Water Board may take suitable action to develop the web-based system for easy dissemination of information regarding aquifer mapping on priority basis.	NAQUIM reports are being disseminated through CGWB website. A web-based system (aims-cgb.org) has been put in place for dissemination of NAQUIM outputs. In addition to above, a GIS based Information and Management System for dissemination of NAQUIM outputs is under development as a part of the WARIMS (Water and Allied Resource Information and Management System). WARIMS is an integrated platform and is being developed by National Water Informatics Centre (NWIC) Further, groundwater levels, water quality information can also be accessed through India-WRIS portal maintained by National Water Informatics Centre.
13	The Department may ensure proper coordination between Central Ground Water Board and State Governments for implementing the recommendations made in the National Aquifer	A multi-tiered approach is followed for sharing of the outputs of aquifer mapping studies. • The findings are shared with the State Governments through Ground Water Coordination Committees • At district level, findings are shared with District Authorities (DM/DC). So far reports in respect of 650 districts have been shared • Findings of National Aquifer mapping studies are disseminated through Public Interaction Programs (PIP) at grassroots level, which is a continuous process. So far 1376 public interaction

	Mapping project reports.	programmes have been conducted in which nearly 1,20,000 persons have participated. • Regional Workshops were organised in 6 different cities across the country for sharing of the NAQUIM studies. • In addition to above, NAQUIM reports are also placed on CGWB website.
14	Participatory Ground Water Management, being one of the key activities for sustainable ground water management, may be executed in a time-bound manner through Atal Bhujal Yojana and this scheme may be considered for scaling up to the entire country, thus involving all the States.	Atal Bhujal Yojana is being implemented on pilot basis in seven States of India. A proposal for expansion of Atal Bhujal Yojana to other States has been initiated.
15	Central Ground Water Board may take appropriate action to ensure that recommendations of the report of the Expert Group for augmenting its infrastructure, technological upgradation and for capacity building are implemented within a reasonable time frame.	For infrastructure and technological upgradation, a dedicated component for technological upgradation has been included in the Ground Water Management and Regulation scheme. For the next five years total outlay of Rs 112 cr has been made against this component. Upgradation of chemical laboratories through procurement of advanced equipment has been taken up on priority. NABL accreditation of the chemical laboratories of CGWB has also been taken up and so far, 9 out of 16 laboratories have received NABL accreditation. For the remaining labs the process is in progress. Further, in the next five years CGWB has planned to install 14,260 Digital Water Level Recorders with telemetry systems throughout the country to have real time groundwater level information. Capacity building through training is being taken up through Rajiv Gandhi National Ground Water Training and Research Institute at Raipur. In addition to this, specialized/international trainings are also being done periodically through National Hydrology Project (NHP).

16	The Department may impress upon the State Governments to review the performance of their ground water schemes and take measures to ensure that the envisaged results are achieved by adopting an integrated approach for recharge/augmentation of ground water.	This Department has interacted with various States/UTs to effectively utilize the funds available through various Central/State Government schemes for effective rainwater harvesting/recharge. To work in collaborative mode with States/UTs, Central Government launched Jal Shakti Abhiyan (JSA) in 2019, a time bound campaign with a mission mode and integrated approach intended to improve water availability including ground water conditions in the water stressed blocks of 256 districts in India including. In this regard, teams of officers from Central Government along-with technical officers from Ministry of Jal Shakti were deputed to visit water stressed districts and to work in close collaboration with district level officials to undertake suitable interventions through various Central/State Government schemes. In addition, Ministry of Jal Shakti has taken up the "Jal Shakti Abhiyan: Catch the Rain" (JSA:CTR) with the theme "Catch the Rain - Where it Falls When it Falls" too cover all the blocks of all districts (rural as well as urban areas) across the country during 22nd March 2021 to 30th November 2021. The campaign was launched by the Hon'ble Prime Minister on 22 March 2021. Further, this Department has time to time issued advisory to States/UTs for sustainable groundwater management. Recently vide DO letter dated 11 Oct 2021 from Secretary (DoWR) to all the State Chief Secretaries, they have been advised for suitable interventions adopting a multi-sectoral and convergent approach along the lines of Jal Shakti Abhiyan. Further, they have been advised to review their free/subsidized electricity policy to farmers (if applicable), bring suitable pricing policy and to work towards crop rotation/diversification/other initiatives to reduce over-dependence on groundwater. To push the States further, a DO letter dated 24.04.2020 jointly signed by Secretary, Department of Rural Development, Secretary, DoWR, RD & GR, Secretary, Department of Land Resources and Secretary, Department of Drinking Water & Sanitation has been sent to Chief Secretaries of all States/UTs to emphasize personal efforts for significant positive impact in the area of water conservation and water management in the country. The Secretary, DoWR held a meeting on 05.04.2023 with all States as regard to enactment to GW Act and adopting MoJS regulatory guidelines. The States were also advised to do the needful for mandatory RWH.

		Master Plan for Artificial Recharge to Groundwater- 2020 has been prepared by CGWB in consultation with States/UTs which is a macro level plan indicating various structures for the different terrain conditions of the country. The Master Plan - 2020 envisages construction of about 1.42 crore rain water harvesting and artificial recharge structures in the country to harness 185 Billion Cubic Metre (BCM). For capturing details of ground water interventions, National Water Informatics Centre (NWIC) in association with CGWB has developed a portal for capturing details of Artificial Recharge Structures constructed by various agencies (https://indiawris.gov.in/wris/#/ars). NWIC has also developed a mobile app for data capture at field level.
17	The Department may review the mandate of CGWB and take steps to strengthen the organisation to achieve the commitments made by the country in the 2030 agenda for Sustainable Development Goals.	The mandate of CGWB is to develop and disseminate technologies, and monitor and implement national policies for the scientific and sustainable development and management of India's Ground Water Resources, including their exploration, assessment, conservation, augmentation, protection from pollution and distribution, based on principles of economic and ecological efficiency and equity. CGWB is working tirelessly to achieve the mandate given to them and constantly liaising with States/UTs/Stakeholders to achieve the desired result. In furtherance of this mandate they have actively participated in the Jal Shakti Abhiyan initiated by the Central Government and actively advise the states/UTs to ensure effective recharge/water harvesting. Further, since the water is a State subject, the role of Central Government/CGWB is mainly advisory in nature and actual work is to be executed at the levels of State Government. However, all efforts are being made by CGWB to advise States/UTs through various scientific studies like National aquifer Mapping study, collection of groundwater quality information, identification of recharge structures including site selection (wherever sought by the States), periodic groundwater assessment in the country etc. Government of India launched Jal Shakti Abhiyan (JSA) in 2019, a time bound campaign with a mission mode approach intended to improve water availability including ground water conditions in the water stressed blocks of 256 districts in India. In this regard, teams of officers from Central Government along-with technical officers from CGWB & CWC were deputed to visit water stressed districts and to work in close collaboration with district level officials to undertake suitable interventions.
18	The Department may assess the progress made under each of the identified targets and take definite action to ensure that India is able to achieve the relevant Sustainable Development Goals as committed.	

		In addition, Ministry of Jal Shakti has taken up the "Jal Shakti Abhiyan: Catch the Rain" (JSA:CTR) with the theme "Catch the Rain - Where it Falls When it Falls" to cover all the blocks of all districts (rural as well as urban areas) across the country during 22nd March 2021 to 30th November 2021. The campaign was launched by the Hon'ble Prime Minister on 22 March 2021. Periodic assessment of ground water withdrawal is an important prerequisite for ensuring sustainable withdrawal. CGWB in association with State ground water departments carries out assessment of dynamic ground water resources including assessment of ground water withdrawal, based on which the assessment units are categorized into different categories like Over-exploited, Critical, Semi-Critical and Safe. This information is used for prioritization of areas for ground water management interventions. A web-based system has been put in place for efficient assessment of ground water resources. Further, to have timely interventions to improve the groundwater situations the periodic groundwater assessment process has now been made on yearly basis. For regulation and control of ground water withdrawal industries, mining, infrastructure projects etc., Central Ground Water Authority (CGWA) has issued revised guidelines for issuing NOC for ground water withdrawal in different categories of assessment units. The CGWA is also being strengthened to achieve effective regulation at site. States are also being pushed to work towards effective sustainable groundwater management. Amendment to guidelines have been issued vide Gazettee Notification dated 29.03.2023. National Aquifer Mapping and Management (NAQUIM) Programme is being implemented under the Ground Water Management and Regulation Scheme. Under the programme an area of ~25 lakh km^2 has been identified for coverage and has already been covered by March 2023. The findings of NAQUIM studies are being shared with the State Governments for implementation. Central Government has taken a number of important measures for conservation, management of ground water including effective implementation of rain water harvesting in the country, which can be seen at URL:http://jalshakti-dowr.gov.in/sites/default/files/Steps_to_control_water_depletion_Feb2021.pdf.

		Due to continuous monitoring at the level of this Department, CGWB and active involvement of States/UTs, the groundwater resources of the country as on 2022, if compared with groundwater resources as on 2017 shows a significant improvement in the groundwater conditions in the country. Following improvements have been recorded. • The annual ground water recharge of the country is 437.44 bcm, which is showing an increase of 1.29 bcm and 5.58 bcm as compared to 2020 and 2017 assessments respectively. • The ground water extraction of the country is 239.16 bcm, which decreased by 5.76 bcm and 9.53 bcm as compared to 2020 and 2017 assessments. • The Stage of Extraction for the country is 60.08%, showing a reduction by 1.5% as compared to 2020 (61.6%) and 3.25% as compared to 2017 (63.33 %).