



## Year End Review 2022 Department of Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti

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The Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti is responsible for laying down policy guidelines and programmes for the development and regulation of country's water resources. It aims to ensure optimal sustainable development, maintenance of quality and efficient use of water resources to match with the continuously growing demands on this precious natural resource of the country. Several key policies and schemes are implemented by the department and guidelines issued from time to time to ensure optimal implementation of these schemes and policies at the grassroot level. Several key initiatives achievements and developments have taken place in the department throughout the year 2022, some of which are highlighted below.

- In 2022, National Mission for Clean Ganga completes 50 projects & sanctions 43 new projects amounting to Rs. 2056 Crore
- Prime Minister chairs 2<sup>nd</sup> National Ganga Council meet on 30th December 2022 via VC in Kolkata
- PM inaugurates 7 sewerage infrastructure projects- 20 STPs & 612 km network at a cost of more than Rs 990 crore
- PM lays the foundation stone for 5 sewerage infrastructure projects to be developed under NMCG at an estimated cost of Rs 1,585 crore
- Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) for 2021-26 with an outlay of ₹93,068 Crore to benefit about 22 lakh farmers
- Against target of 34.63 Lakh Ha irrigation potential of 24.35 Lakh Ha (*approx. 70.31%*) created through AIBP works of the prioritized projects during 2016-17 to 2021-22
- Ganga Quest 2022 observed active participation of over 1.73 lakh persons from India as well as over 180 countries
- National Water Mission launched special campaign – “Catch the Rain” for improving water conservation across the nation
- Bureau of Water Use Efficiency (BWUE) set up under administrative control of Department of Water Resources, RD & GR on 20.10.2022 for promotion, regulation and control of efficient use of water in irrigation, industrial and domestic sector
- Ken-Betwa Link Project, 1<sup>st</sup> inter-linking of rivers project being implemented with estimated cost of ₹14,605 crore having central support of ₹9,317 crores is planned to be completed by March, 2030





- Under DRIP Ph-II, co-financed by World Bank and AIIB, inclusion of additional four states namely *Karnataka, Uttarakhand, Uttar Pradesh and West Bengal* has been notified by the World Bank in June 2022
- After enactment of landmark Dam Safety Act in December 2021, Union Government constituted *National Committee on Dam Safety* and established *National Dam Safety Authority (NDSA)* on 17<sup>th</sup> February 2022
- Since the inception of FMP/RMBA (till March 2022), Central Assistance of Rs. 6686.79 crores released to States/UTs under FMP component of Flood Management & Border Area Programme (FMBAP) scheme and CA of Rs. 1095.16 crores have been released to UTs/States under RMBA component of FMBAP scheme
- President of India inaugurated 7<sup>th</sup> India Water Week 2022 from 1<sup>st</sup>– 5<sup>th</sup> November 2022 with the theme “Water Security for sustainable Development with Equity”

### **A. National Mission for Clean Ganga:**

In December 2022, Namami Ganga Mission was recognized as one of the top ten initiatives of the World Restoration Flagship of the UN Decade. Namami Ganga was chosen from over 160 submissions made from across the world. Additionally, the documentary “Ganga: River from the Skies” made in collaboration with National Geographic India won international accolades by winning awards under 3 categories in Asian Academy Creative Awards 2022- Best Documentary, Best Current Affairs and Best Natural History or Wildlife Programme; and Best Natural History/ Wildlife Show at Asian Television Awards 2022.

In 2022, the National Mission for Clean Ganga (NMCG) sanctioned 43 projects at a total cost of Rs 2,056 Cr., bringing the cumulative total to 406 projects sanctioned worth Rs 32,898 Cr. In the same period, NMCG also completed 50 projects which resulted in the completion of total 224 projects.

With regard to sewerage infrastructure 25 projects, comprising of 41 STPs for creation/ rehabilitation of 910 MLD treatment capacity and laying of 427 km sewer network between January to November 2022 has been done. Till date, 176 sewerage infrastructure projects have been sanctioned in the Ganga Basin for the creation of 5,270 MLD treatment capacity and 5,213 km sewer network.

Several public outreach programmes were also organized by NMCG, which included Ganga Quest, Ganga Utsav etc. - all of which received an overwhelming response. Ganga Quest 2022 saw active participation of over 1.73 Lakh persons from India as well as from over 180 countries. Ganga Utsav 2022, dedicated to the Azadi Ka Amrit Mahotsav campaign, celebrated the declaration of River Ganga as the National River. 75 separate events in Ganga and its tributary basin cities and towns will be organized by August 2023, with 3-day events in 15 major cities like Haridwar, Mathura, Delhi, Kanpur, Varanasi, Patna, Bhagalpur, Kolkata etc. and 1-day events in 60 smaller towns/cities. The events will promote local culture, and activities under Arth Ganga such as Ghat Mein Haat, Ghat Par Yoga, Ganga Artis etc. will be promoted.

In 2022, focus has also been on developing and promoting Arth Ganga concept, under which several initiatives has been undertaken. Key highlights include –



· Release of over 6 million IMC & Mahseer fingerlings, and ranching of over 70,000 Hilsa in Ganga

River



· Launch of JALAJ Livelihood Model (biodiversity sensitive tourism-based boat safaris) launched at



locations on 16th August 2022. This will be replicated at 75 locations

· Launch of Web Based Tool to monitor Health Status of Urban Water Bodies



This year, NMCG participated in the prestigious Singapore World Water Week 2022 held from 17<sup>th</sup> to



1<sup>st</sup> April 2022 and organized a session on “Sustainable Wastewater Management in Developing Countries: An Innovative Indian Approach in River Rejuvenation” on 17<sup>th</sup> April 2022. From 24<sup>th</sup>



August to 1<sup>st</sup> September 2022, NMCG also participated in Stockholm International Water Week 2022. On 24<sup>th</sup> August 2022, NMCG hosted a session on “Zero Liquid Discharge Cities”.

NMCG along with C-Ganga hosted the 7<sup>th</sup> India Water Impact Summit, based on the theme “Restoration and Conservation of Small Rivers in a Large Basin with a focus on Mapping and Convergence of 5Ps (People, Policies, Plans, Programmes and Projects)”.

**2<sup>nd</sup> meeting of National Ganga Council:** The Prime Minister, Shri Narendra Modi chaired the National Ganga Council meet held on 30<sup>th</sup> December 2022 via video conferencing in Kolkata. During the meeting, PM emphasized on ways to enhance various forms of herbal farming along the Ganga. Prior to the meeting, PM laid foundation stone and dedicated Namami Gange and Drinking Water & Sanitation Projects to the nation. PM inaugurated the 7 sewerage infrastructure projects (20 Sewage Treatment Plants and 612 km network) at a cost of more than Rs 990 crore. These projects will add sewage treatment capacity of over 200 MLD in the State of West-Bengal. PM also laid the foundation stone for 5 sewerage infrastructure projects (8 Sewage Treatment Plants and 80 Km Network) to be developed under National Mission for Clean Ganga (NMCG) at an estimated cost of Rs 1,585 crore. These projects will add 190 MLD new STP capacity in West Bengal.

The Prime Minister reflected on the importance of the project for Rejuvenation of River Adi Ganga, infamously known as TollyNala, and a tributary of Ganga, in Kolkata. Recognizing the bad situation of the river, the project has been approved by NMCG at an estimated cost of Rs. 653.67 crore that includes construction of modern sewerage infrastructure comprising of 3 Sewage Treatment Plants (STPs) of 10 million litres per day (MLD), 11.60 MLD and 3.5 MLD capacities. This project is 100% centrally sponsored and the Centre will bear all financial cost of the project.

PM Shri Modi, while elaborating on river Ganga as navigational waterways informed that over 1,000 waterways are being constructed in India and conveyed that our aim is to make modern cruise ships sail in Indian rivers. With substantial development of waterways, India’s cruise tourism sector is all set to embark on a grand new journey. PM Shri Modi announced that on 13th January 2023, World's longest river cruise will sail from Kashi to reach Dibrugarh via Bangladesh travelling 2300 km.

### **B. Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)-Accelerated Irrigation Benefit Programme (AIBP):**

The Government of India on 27.07.2016 approved funding of the 99 prioritized irrigation projects (and 7 phases) with an estimated balance cost of Rs. 77,595 Crore (Central share- Rs. 31,342 crores; State share- Rs. 46,253 crores) for completion in phases. The works include both the AIBP and CAD

work



funding arrange



for both Centra



assistance (CA) and



State Share made



through

NABARD under Long Term Irrigation Fund (LTIF). Targeted Irrigation Potential to be created under the scheme is 34.63 Lakh ha. An expenditure of Rs.56271 crore (upto March 2022) has been reported to be incurred by the concerned State Governments on these projects since 2016-17. In January 2020, Ministry of Finance conveyed the continuation of ongoing centrally sponsored scheme up-to 31.03.2021.

**Physical Progress:** Against the target of 34.63 Lakh Ha. Irrigation Potential of about 24.35 Lakh ha. has been created through AIBP works of the prioritized projects during 2016-17 to 2021-22. The potential created during 2022-23 shall be available only after the end of cropping season.

**Project Completed under PMKSY-AIBP:** AIBP works of 50 prioritized projects out of identified 99 projects (and 7 phases) were reported to be completed till date. Out of this, 4 projects have been reported to be completed during 2022-23 till date.

### **Implementation of PMKSY AIBP (including CADWM) during 2021-26:**

The Government of India has approved implementation of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) for 2021-26 with an outlay of ₹93,068 Crore on date 15-Dec-2021 to benefit about 22 Lakh farmers. The Union Cabinet has approved central support of ₹37,454 Crore to States and ₹20,434.56 Crore of debt servicing for loan availed by Government of India for irrigation development during PMKSY 2016-21. Accelerated Irrigation Benefit Programme, HarKhet KoPaani and Watershed Development components have been approved for continuation during 2021-26. Total additional irrigation potential creation targeted during 2021-26 under AIBP is 13.88 Lakh hectare. Apart from focused completion of 60 ongoing projects including their 30.23 lakh hectare command area development, 6 additional projects have been taken up till date. Also, two national projects, namely Renukaji Dam Project (Himachal Pradesh) and Lakhwar Multipurpose Project (Uttarakhand) have also been included for central funding of 90% of works of water component under the scheme.

### **A slew of Innovative measures and modification have been made to improve implementation and maximize benefits, such as:**

- Inclusion of new Major / Medium Irrigation (MMI) projects as well as funding of National Projects under AIBP.
- Financial progress requirement is dropped for inclusion of a project under AIBP and only physical progress of 50% to be considered.
- Advanced stage (50% physical progress) criteria is relaxed for projects having command area of 50% or more in Drought Prone Area Programme (DPAP), tribal, Desert Development Programme (DDP), flood prone, Tribal area, Flood prone area, left wing extremism affected area, Koraput, Balangir and Kalahandi (KBK) region of Odisha, Vidarbha & Marathwada regions of Maharashtra and Bundelkhand region of Madhya Pradesh & Uttar Pradesh, as also for Extension Renovation Modernization (ERM) projects and also for States with net irrigation below national average.
- Reimbursement is allowed for due central assistance in subsequent years also.
- Project completion permitted with physical progress of 90% or more.
- Online Management Information System (MIS) has been developed for monitoring of the projects. A nodal officer for each of the 99 priority projects has been identified who updates the physical and financial progress of the project regularly in the MIS.
- GIS based Application has been developed for geo-tagging of project components. Remote Sensing Techniques have been used for digitization of the canal network of the projects. Further, the Command

Area estimation in the command of 99 priority projects is being carried out annually through remote sensing.



To resolve the issue of Land Acquisition (LA) and increase water conveyance efficiency, use of Underground Pipeline (UGPL) has been actively promoted. Guidelines for Planning and Design of Spined Irrigation Network were released by this Ministry in July'2017.



• Pari-passu implementation of Command area development works in the commands of these projects



envisaged to ensure that the Irrigation Potential Created could be utilized by the farmers. New Guidelines bringing focus on Participatory Irrigation Management (PIM) have been brought out.



Further, transfer of control and management of irrigation system to the Water Users' Association (WUA) has been made necessary condition for the acceptance of CADWM completion.



The Financial Progress under PMKSY-AIBP is as follows:

(Rs. in crore)

Funds Released	2016-17 to 2021-22	2022-23 (so far)	Total	Funds released in 2021-22
Central Assistance	15308	142	15450	1862
State Share	28422	684	29106	2307
<b>Total</b>	<b>43730</b>	<b>826</b>	<b>44556</b>	<b>4169</b>

**Special Package for Maharashtra:** A Special Package approved on 18.07.2018 which provides Central Assistance to complete 83 Surface Minor Irrigation (SMI) projects and 8 Major / Medium Irrigation Projects in drought prone districts in Vidarbha and Marathwada and rest of Maharashtra in phases up to 2023-24. The overall balance cost of the said projects as on 1.4.2018 is estimated to be Rs.13651.61 Crore. Total CA is estimated to be Rs. 3831.41 Crore including reimbursement for expenditure during 2017-18. Balance potential of 3.77 Lakh Ha would be created on completion of these schemes. CA of Rs. 1935 crores have been released under the scheme so far. Under the scheme, 28 SMI projects have been reported to be completed by the State Government of Maharashtra. Ultimate Irrigation Potential of these 28 projects is 20437 ha. Overall irrigation potential of 128205 ha. has been reported to be created through all these projects during 2018-19 to 2021-22. Further potential created during 2022-23 shall be available only after the end of cropping season.

**Polavaram Irrigation Project:** Polavaram Irrigation Project was declared as National Project under Section 90 of AP Reorganization Act, 2014, which came into force on 1st March 2014. The project with 2454 m of earth-cum-rockfill dam and 1128.4 m long spillway aims at irrigating 2.91 Lakh ha in East Godavari, Visakhapatnam, West Godavari and Krishna districts besides several other benefits envisaged by it. Central Government is funding 100% of the remaining cost of the irrigation component of the project, as on 01.04.2014. Government of Andhra Pradesh is executing the irrigation component of the project on behalf of Government of India. The approved cost of the Project as per Revised Cost Committee (RCC) Report is Rs. 47725.74 Cr (at 2017-18 price level). After declaration as National Project, a sum of Rs. 226.043 crore has been released for execution of





Polavaram Irrigation Project so far. As reported by Water Resource Department, Government of Andhra Pradesh, an expenditure of Rs 20744.23 crore has been incurred on the project works up to 31.12.2022.



WPRS has been involved in conducting physical, mathematical and desk studies on various components of Polavaram Irrigation Project. Studies were carried out on 2-D physical model (1:50 scale) of spillway for finalizing the layout of spillway and stilling basin by testing spillway profiles for pressures and stilling basin for efficient energy dissipation. On 3-D comprehensive physical model (1:140 scale) of spillway and power intake, studies were carried out to optimize the design layouts of approach channel, guide bund and spill channel. These studies would improve the flow conditions in-front of spillway and downstream of spillway and in spill channel and its further downstream. Mathematical model studies for river behavior and scour estimation and protection measures related to construction of diaphragm wall were carried out. Mathematical model studies were carried out for assessing the flow conditions in the spill channel. Other studies include the spillway concrete cooling studies, 3D Pseudo- dynamic and 2-D dynamic stress analysis of one spillway block and instrumentation of Polavaram concrete gravity dam.

**C. Dam Rehabilitation and Improvement Project (DRIP) Phase II and Phase III:** India ranks third globally after China and USA with 5334 large dams in operation. About 411 dams are under construction. In addition, there are several thousand smaller dams. These dams are vital for ensuring the water security of the Country. The Union Cabinet approved externally aided DRIP Phase II and Phase III in its meeting held on October 29, 2020. 19 States and 3 Central Agencies are involved in the scheme with a provision for rehabilitation of about 736 dams (14% of large dams). The Budget Outlay is Rs. 10,211 crores (Phase II: Rs. 5107 Cr, Phase III: Rs. 5104 Cr) and duration of Scheme is ten (10) years, to be implemented in two phases, each of six (6) years duration with two (2) years overlap.

The funding pattern of Scheme is 80:20 (Special Category States), 70:30 (General Category States) and 50:50(Central Agencies). The Scheme also has provision of Central Grant of 90% of loan amount for special category States (Manipur, Meghalaya and Uttarakhand).

The Scheme has four components; (i) Rehabilitation of dams and associated appurtenances to improve the safety and operational performance of selected dams in a sustainable manner; (ii) Dam safety Institutional Strengthening to strengthen the dam safety institutional setup in participating States as well as at the Central level; (iii) Incidental Revenue Generation for sustainable operation and maintenance of dams; and (iv) Project Management.

The Phase II of the Scheme is being co-financed by two multi-lateral funding Agencies - World Bank and Asian Infrastructure Investment Bank (AIIB). The Loan Agreement and the Project Agreements with World Bank in respect of 10 States and CWC, has been declared effective since October 12, 2021. The inclusion of additional four States (Karnataka, Uttarakhand, Uttar Pradesh and West Bengal) has also been notified by the World Bank in June 2022. The Loan signing with AIIB for remaining US\$ 250 million held on 19<sup>th</sup> May, 2022 with original 10 States. The tenders amounting to Rs. 2100 Cr has been published. The contract(s) for approximately Rs. 1100 Cr has been awarded. An expenditure of Rs. 392 Crore has been incurred under the scheme by various partner Implementing Agencies.



**Hirakud Dam Project:** Hirakud Dam is built across the Mahanadi River, about 15 km from Sambalpur in the state of Odisha. It is the longest earthen dam in the world. It is one of the first major multipurpose river valley projects started after India's independence.



CWPRS has been involved in hydraulic model studies for additional spillways of Hirakud Dam, Odisha (under DRIP). It was proposed the construction of two additional spillways to safely pass the additional flood of 27182 m<sup>3</sup>/s, due to revision in the design flood from 42450 m<sup>3</sup>/s to 69,632 m<sup>3</sup>/s. 2-D physical sectional (1:40 scale) and 3-D physical comprehensive (1:100 scale) model studies are being carried out to finalize the designs of left bank additional spillway and their components to enhance the discharging capacity of the Hirakud dam.

CWPRS has also been involved in carrying out inspection of many dams in Maharashtra along with Dam Safety Review Panel (DSRP). Till date more than 50 Projects have been inspected and valuable suggestions are given towards instrumentation, seepage control, in-situ investigations, review of structural safety and remedial measures. Detailed reports as per CPMU, DRIP format is prepared for the Projects inspected. Prior to carrying out rehabilitation measures, many laboratory studies are being conducted at CWPRS towards suitable grout mix design, shotcrete mix design, epoxy-based injection systems and repair materials pertaining to many Projects. At present more than 15 studies are in progress related to seepage control and repairs/rehabilitation of dams.

#### **D. Central Water Commission:**

CWC has conducted in-house Sedimentation Assessment Studies of 08 reservoirs using remote sensing technologies during 2022. These in-house studies have been conducted using Microwave data (instead of optical data). The advantage of using microwave data is that the images are not affected by cloud cover, and we get images of the reservoirs near FRL during monsoon season as well (which is relatively difficult with optical imageries as when the reservoir is full, most of the time it is monsoon season and it is cloudy). In addition to the in-house studies, a batch of 40 reservoirs, covering all the major river basins of India, has been outsourced in August, 2022 for sedimentation assessment using satellite remote sensing technique.

Post-project Environmental Impact Assessment studies for three projects namely Ukai; Tawa; and Eastern Kosi Canal have been completed during 2022. Reservoir Operation Rule Levels for Srisailem and Nagarjuna Sagar reservoirs were prepared as per KWDT-1 award, TAC approved notes, and interstate agreements.

The Secretariat of the Indian National Committee on Irrigation & Drainage (INCID), India's representative national committee in the International Commission on Irrigation & Drainage (ICID), is housed at CWC. INCID Secretariat, in partnership with ICID, organized a 1.5-day Side Event – “Conclave on Water Security of India” during the 7th India Water Week, held at Greater Noida from 1-5th November, 2022.

INCID invites and processes the nominations for ICID's annual awards including the World Heritage Irrigation Structure (WHIS) Awards. 4 nominations were processed and sent to ICID for consideration for the WHIS-2022. In 2022, India won the highest number of (four) WHIS awards namely 1) Baitarani system, Odisha. 2) Lower Anicut, Tamil Nadu 3) Rushikulya Irrigation System, and 4) Sir Arthur Cotton Barrage, Andhra Pradesh

#### **Participation in 24th Congress of ICID**



The 24th Congress and 73rd International Executive Council (IEC) of International Commission on Irrigation & Drainage (ICID) was held in Adelaide, Australia during 3-10 Oct-2022. Hon'ble Minister of Jal Shakti and officials from CWC participated in the event. Indian National Committee on Irrigation and Drainage (INCID) stall was exhibited during the event. Further, meetings were held with foreign delegates on issues related to water resources.

The next ICID event i.e., 25<sup>th</sup> Congress of ICID and 75<sup>th</sup> IEC of ICID is proposed to be held at Visakhapatnam (Vizag), Andhra Pradesh during 1-8 Nov, 2023. The Organizing Committee for the said event is chaired by Sh. Kushvinder Vohra, Member (WP&P) & Ex-Officio Additional Secretary, Govt. He along with other representatives of INCID have visited Visakhapatnam to select the venue of the conference, and other areas of interest such as Study Tour, and discussing with Govt of A.P. officers. The event is expected to witness a footfall of about 1000+ delegates from all over the world. INCID, in association with NWA, Pune, organized a Webinar series titled WALMI Meet-2022 to discuss the activities of various WALMIs/IMTIs along with their issues, solutions and constraints.

### **India-EU Water Partnership (IEWP):**

The India-EU Water Partnership (IEWP) is an outcome of the 'Joint Declaration on Water' adopted by India and the EU on 30 March 2016 during the 13th EU-India Summit in Brussels, to enhance cooperation on water issues, including 'Clean Ganga' programme of the Government of India. A 'Memorandum of Understanding on the India-EU Water Partnership' was signed in October 2016, with an objective to strengthen the technological, scientific and the management capabilities of India and EU in the area of water management on the basis of equality, reciprocity and mutual benefit.

The India-EU Water Partnership (IEWP) Phase-1 concluded on 30 October 2020 and Phase 2 has started from 1 November 2020 for a period of three years. The 2nd Phase of IEWP is under progress. IEWP organized the 5th India EU Water Forum on Water Cooperation on 27th October, 2022 at New Delhi. The 5th India - EU Water Forum brought together a wide range of stakeholders from both India and the EU and its EU Member States with the objective to exchange views on good practices, regulatory approaches, business solutions and research and innovation opportunities in the water field in India and the EU.

Further, activities for the development of Tapi River Basin Management (RBM) plan under 2nd Phase of India European Union Water Partnership (IEWP) have been initiated.

### **India Denmark Co-operation:**

Under co-operation with Denmark, emanating from declaration made by Prime Minister of India after meeting Prime Minister of Denmark, a Centre of Excellence for Smart Water Resources Management (CoESWaRM) and Smart Lab for Clean Rivers in Varanasi on the lines of Smart City Lab in Panji was proposed to be established.

Consequently, Letter of Intent and MoU were signed between two countries on 03.05.2022 and 12.09.2022 respectively. Simultaneously, two separate Notes viz. setting up of Smart Lab and centre of Excellence, were drafted in consultation with Denmark side

### **Support for Irrigation Modernization Program (SIMP):**

Support for Irrigation Modernization Program (SIMP) is a new initiative taken up by DoWR, RD&GR with Technical Assistance (TA) from the Asian Development Bank (ADB) to modernize Major/ Medium Irrigation (MMI) projects in the country. Initiative of the program is



to improve water use efficiency, increase crop water productivity and ultimately increase farmer's income in the command area of the project through application of national/ international best practices. For overall implementation and management of the programme, a Central Irrigation Modernization office (CIMO) has been setup under Chief Engineer (POMIO), CWC supported by national/ international consultants.

SIMP is proposed to be taken up in 4 phases. SIMP Phase-1 concluded on 31.12.2021 under which MMI projects have been shortlisted for inclusion under 1st batch of projects for preparation of Irrigation Modernization Plans (IMPs) out of the 57 proposals received from 14 States/ 2 UTs.

Hereupon, SIMP Phase-2 has been initiated with the Phase-2 consultants (Team Leader & Dy. Team Leader) engaged. A joint consultation meeting by CWC and ADB has been held with the Chief Engineers of the concerned projects and other senior officials from the State's WRDs wherein the Phase-2 workplan has been discussed in detail and views of the States have been taken.

As 1st step for preparation of IMPs, FAO developed RAP-MASSCOTE (Rapid Appraisal Procedure-Mapping System and Services for Canal Operation Techniques) workshops are being organized in each of the project area with the support from the Phase-2 consultants. 1st such workshop has been successfully convened for the Vani Vilasa Sagara project (Karnataka) during 05-16 Dec'2022.

**Publications related to Water Resources:** - Three publications have been published

- The publication 'Compilation of Status of Ongoing Major and Medium Project-2021' released in November 2022.
- The publication 'Water Sector at a Glance-2021' released in November 2022.
- The publication 'Pricing of water in public system in India-2022' released in November 2022

A total of 902 Glacial Lakes and Water Bodies have been monitored using satellite remote sensing in the year 2022. This activity is carried out every month from June to October. Of these, 544 are Glacial Lakes and 358 are Water Bodies. All Glacial Lakes upto size of 10 ha as per NRSC 2009 inventory and few more Glacial Lakes of size even smaller than 10 ha as identified by SDC have been included for monitoring.

During the year 2022, 2 new Flood Forecasting Stations (2 Inflow) have been added in the States of Telangana and Madhya Pradesh. During the period from 1<sup>st</sup> May to 14<sup>th</sup> December 2022, 11511 flood forecasts (6476 Level and 4336 Inflow) were issued, out of which 10812 (6476 Level and 4336 Inflow) forecasts were within limit of accuracy. Daily Flood Situation Reports and Special Advisories were also issued during extreme flood situations. 554 Red and 618 Orange Bulletins were also issued and updated on hourly and 3-hourly basis respectively. All flood information were updated in FF Website, Twitter and Facebook Pages of Flood Forecasting of CWC.

Automated online 5 days flood advisory for all the flood the level and inflow forecasting stations were maintained with specific domain name (<https://aff.india-water.gov.in>) in place of IP address (<https://120.57.99.138>). The 5 days advisory has been migrated from physical server to a secured cloud server provide by NWIC for ensuring cyber security, timely run for the model, uninterrupted power & internet connectivity. A para on "Flood Situation for next five days" in respect of stations likely to be above warning level was added in the "Daily Flood Situation Report cum Advisory" based on the 5 days advisory. Ensemble forecasting based on NCMRWF 23-member forecast has been adopted. The technique of bias correction was also adopted for better 5 days flood advisory. The



three hourly gridded rainfall product was developed from station near real-time data as observed by IMD, CWC and DHM Nepal. The same is proposed to be incorporate the similar data observed by the state Governments and project authorizes during monsoon season 2023.

ABL accreditation received for 2 more CWC laboratories situated at Beharpore and Bhopal resulting in NABL accreditation of 19 out of 23 CWC laboratories. A report named “Standard Operating Procedures for Level-II Water Quality Laboratories of CWC” was published in October, 2022.

**CWC Activities under National Hydrology Project (NHP):** Achievements include completion of consultancy work for “Study on the issue of Flood and Siltation in River Ganga and its Tributaries due to Farrakka Barrage in the state of Bihar”; Completion of Phase-I i.e., Development Phase of consultancy work for “Physical based Mathematical Modelling for estimation of Sediment Rate and Sediment Transport in Seven river Basin”. Completion of 70% work of Development (Phase-1) for the consultancy work for “Extended Hydrological Prediction (multi week forecast) for Yamuna, Narmada and Cauvery basins”. Completion of “Reservoir Sedimentation Studies using Hydrographic survey for 20 reservoirs”. Award of work for procurement of additional 50 numbers of ADCP and 19 nos. Non-contact Discharge Measuring System or Velocity Radar System (VRS) as an effort for modernization of hydro-meteorological observation. 40 nos. ADCP and 5 nos. VRS has already been supplied and installed at the concerned sites. Procurement of DEM from NRSC at a contract value of 13 crores has been completed for the consultancy work of “Early Flood Warning System Including Inundation Forecast in Ganga Basin”; Award of consultancy for “Consultancy Services for Development of Decision Support System near to real time for Integrated Reservoir Operation System of Ganga Basin”. Successfully installation, testing and commissioning of Real Time Data Acquisition System (RTDAS) for Narmada Control Authority (NCA), Bhopal by CWC at 44 nos. sites and in Arunachal Pradesh for Water Resources Department, Govt of Arunachal Pradesh at 33 nos. sites by CWC. Procurement of additional 50 numbers of ADCP and 19 nos. Velocity Radar System for the regional offices of CWC as an effort for modernization of hydro-meteorological observation; Modernization of training facilities in NWA Pune & Modernization of Water Quality Monitoring activity by providing state of art equipment.

Under the consultancy for “Early Flood Warning System Including Inundation Forecast in Ganga Basin” during 2021 has completed tasks related to “collection and analysis of hydro- meteorological and hydrological data, river cross-section survey at 500 locations and integration of surveyed cross-section with high resolution DEM (50%). The development of 1D & 1D-2D coupled model is in progress for inundation forecasting.

Award of contract is in final stage for non-consultancy services of “Reservoir Sedimentation Studies using Hydrographic survey for 87 reservoirs- Phase-II”.

**Coastal Management Information System (CMIS):**Implementation of Coastal Management Information System (CMIS) in the States of Tamil Nadu, Kerala and UT of Puducherry was awarded to IIT Madras, Chennai and a tripartite MoU was signed among CWC, IIT, Madras and respective States/UTs (Kerala, Tamil Nadu and Puducherry) for establishment of one coastal data collection site in each States/UT. Establishment of three no. of coastal data collection sites has been completed under this project& sites have been handed over to CWC on 31.05.2021.Data collection activities are now being carried out by CWC at the three nos. of coastal data collection sites (Devanari-Tamil Nadu, Karaikal-Puducherry, Ponnani-Kerala).

Implementation of Coastal Management Information System (CMIS) at 2 sites, one each in Maharashtra (northern region) and Gujarat (southern region) was awarded to CWPRS, Pune and a tripartite MoU was signed among CWC, CWPRS and respective States (Gujarat and Maharashtra) for three years. Establishment of two no. of coastal data collection sites (Satpati-Maharashtra, Anidanti Motidanti-Gujarat) is in progress under this project.

The procurements of most of the instruments except water and grab sampler have been completed. All the procured instruments are installed or being used for data collection except DWRB units. Installation of DWRB has been planned subsequent to obtaining insurance. Meteorological, Bathymetric, Beach/Coastline survey, River discharge data observation are being carried out. The project completion period has been extended for a period two years i.e., up-to June, 2024.

Implementation of CMIS at 3 sites, 2 in Goa and 1 in Southern Maharashtra, work was awarded to NIO, Goa and a tripartite MoU was signed among CWC, NIO and respective States (Goa and Maharashtra) for three years. Establishment of three no. of coastal data collection sites (Tarkhali-Maharashtra, Benaulium-Goa, Baga-Goa) is in progress under this project.

Procurement of most of the equipment has been completed except DWRB, Tide Gauge and CTD. Data collection work is under progress for parameters namely Beach Profile Survey, Shoreline change, On shore and Off shore sediment, Wind, Marine Current, Riverine data and Bathymetry survey work. The project completion period has been extended for a period two years i.e., up-to November, 2024.

**Monitoring of Reservoir:** Central Water Commission is monitoring live storage status of reservoirs of the country on weekly basis and is issuing weekly bulletin on every Thursday. During 2022, 10 reservoirs has been added and presently 143 number of reservoirs are being monitored by CWC, having total live storage capacity of **177.464 BCM** which is about **68.83%** of the live storage capacity of 257.812 BCM which is estimated to have been created in the country. Out of these reservoirs, 46 reservoirs have hydropower benefit with installed capacity of more than 60 MW. The weekly bulletin contains current storage position vis-à-vis storage status on the corresponding day of the previous year and average of last 10 years on the corresponding day.

Weekly Bulletin is shared with Prime Minister Office, NITI Aayog, Ministry of Jal Shakti, Ministry of Power, Ministry of Agriculture & Farmers Welfare, India Meteorological Department, and the Water Resources Departments of concerned states and also uploaded on the CWC website. This weekly bulletin is also shared with Crop Weather Watch Group (CWWG) of the Ministry of Agriculture and Farmers Welfare of which representative of CWC is also a member. The meeting of CWWG is convened on every Friday to review agricultural activities across the country and to suggest remedial measures to states in case of distress situation.

**CWPRS Activities under National Hydrology Project (NHP):** CWPRS proposal under NHP included establishment of state-of-the-art Hydro-Met-WQ Instruments testing calibration and certifying facility, Training and support to IAs on Hydromet instrumentation, Bathymetry survey etc., strengthening existing research facilities, Infrastructure development, Capacity building, Purpose driven studies involving special technical support within the overall framework of National Hydrology Project etc.



The total expenditure since the beginning of project up-to 30.11.2022 is INR 15.56 crore. Major activities completed so far under NHP are as follows. Establishment of state-of-the-art Testing Calibration & Certifying Facility (TCCF) at CWPRS for selected Hydro-Met-WQ Instruments is in progress.



#### Major Activities related to Testing / Calibration Completed under NHP Include:

1. Current Meter Trolley: Up gradation of Current meter trolley up to 7.5 m/sec for Calibration and performance testing of 1) Current meter 2) ADCP 3) Side looking sensor 4) Flow tracker etc.
2. Automatic Weather Station: Establishment of Reference AWS, Field Testing setup
3. Establishment of Field-Testing setup (Field Calibrator) for AWS Sensor.
4. Establishment of Reference Ground Water station and Field Calibrator for Testing & Training purpose
5. Establishment of Water Quality Testing lab for Different parameters like pH, Electrical Conductivity, Turbidity, DO, Water temperature and Water Depth
6. Establishment of Reference Telemetry- GSM/GPRS Setup for Training Purpose to IA'S
7. Establishment of Reference Data Logger Setup for Training Purpose to IA'S
8. Establishment of Reference Surface Water Level Station for Training Purpose to IA'S
9. Bathymetry survey of three Dam in North East Dam Viz. Singda Reservoir, Khuga Reservoir, Khoupum Reservoir has been completed.

#### Technical assistance:

1. Bathymetry Survey of Jharkhand Dam Viz. Dhruva, Tenughat, Getalusandis in progress.
2. Bathymetry Survey of Jharkhand Dam Viz. Suryodi, Tenughat, Getalusand using Satellite Remote Sensing is in progress.
3. CWPRS Scientists have assisted various Central & State Implementing Agencies for finalization of specification of Hydro-Met-WQ Instruments & extended technical guidance whenever required.
4. CWPRS has inspected various Hydro-Met-WQ Instruments installed at various locations by state implementation agencies.
5. CWPRS have conducted various training programmes for Hydro-met RTDAS instrumentation.

Activities in Progress include; Establishment of Lab Testing Facility for Testing/ Calibration of AWS Sensor, Establishment of Lab Testing/ Calibration Setup for GW level Sensor, Establishment of Lab Testing/Calibration Setup for Telemetry- GSM/GPRS, Establishment of Lab Testing/Calibration Setup for Data Logger

#### E. Atal Bhujal Yojana (Atal Jal)

Atal Bhujal Yojana (Atal Jal) is a Central Sector Scheme of Government of India with an outlay of Rs 6000 Crore, with focus on community participation and demand side interventions for sustainable ground water management in identified water stressed areas in 8221 water stressed Gram Panchayats of 229 administrative blocks/ Talukas in 80 districts of seven States in the country viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh. The scheme, partly funded by the World Bank, was launched by the Hon'ble Prime Minister on 25.12.2019 and is being implemented from 1.04.2020 for a period of 5 years.



This unique scheme aims at increasing the capacity of States to manage their ground water resources and for ensuring their long-term sustainability with active participation of the local communities through a mix of top-down and bottom-up approaches. It also envisages convergence of various ongoing schemes for implementation of interventions for improving ground water availability with emphasis on demand management and also to inculcate behavioral changes in the community to ensure optimal use of available water resources.

The launch of Atal Bhujal Yojana heralds a change in the Government policy for ground water management by emphasizing the importance of community participation in planning, execution, and monitoring of scheme activities; convergence of ongoing schemes for implementing interventions aimed at improving ground water availability; focus on demand side management through improving water use efficiency and incentivizing participating States for awareness creation among the masses the importance of ground water.

Atal Bhujal Yojana also envisages improving the capacity of States for ground water governance through strengthening of institutions dealing with ground water management, improving ground water monitoring networks, creation of awareness among the public on the importance and criticality of ground water resources and building the capacity of the grass root level stakeholders to plan and utilize the available resources in a judicious manner. It also addresses the gender perspective by making it mandatory to include women in all activities of the scheme.

Atal Bhujal Yojana is expected to improve ground water conditions in the target areas and to contribute significantly to ensure ground water sustainability for interventions planned under the Jal Jeevan Mission (JJM). It is also expected to contribute to the Hon'ble Prime Minister's goal of doubling farmers' income and to result in optimal use of ground water by the stakeholders in the long-run.

Work done under the Scheme is as follows:

- i. National Inter-departmental Steering Committee has been constituted & National Programme Management Unit (NPMU) has been established.
- ii. Programme Guidelines have been issued.
- iii. Based upon three rounds of verification by TPGVA, incentives to the tune of Rs. 621.39Crore released to States for achievement of Disbursement Linked Indicator#1 public disclosure of ground water related information and reports and Disbursement Linked Indicator#2 preparation of Community-led Water Security Plans.
- iv. Web-based MIS to monitor progress of the scheme is in place for data entry.
- v. 99% of Water Security Plans are completed and submitted. Implementation of the interventions proposed under WSPs is going on.
- vi. Orientation trainings for State Programme Management Units of all seven States completed.
- vii. MoA signed with Arghyam for support in capacity building activities.
- viii. Capacity Building Framework document prepared and shared with States.
- ix. IEC programmes initiated by participating States.
- x. Training of Master Trainers for all Seven States completed.
- xi. Second meeting of National Inter-Dependental Steering Committee (NISC) for implementation of Atal Bhujal Yojana (Atal Jal) held on 28<sup>th</sup> June 2022.
- xii. Procurement of various equipment and construction of Piezometers are in advanced stage.





xiii. In order to evaluate the progress of the scheme as well as to suggest any course correction for the remaining period, Mid-Term Report cum World Bank Mission is starting from 19<sup>th</sup> December 2022.



### **Central Ground Water Board:**



**National Aquifer Mapping and Management Programme:** NAQUIM studies for aquifer mapping and management plan formulation have been taken up by CGWB under the scheme Ground Water Management & Regulation. During 2022 (1<sup>st</sup> January to 30<sup>th</sup> November 2022), Aquifer Maps and Management Plans for 5.7 Lakh km<sup>2</sup> have been prepared covering various parts of the country. So far, under the Aquifer Mapping programme, an area of 24.4 lakh km<sup>2</sup> has been covered out of the total ~25 lakh km<sup>2</sup> area identified for mapping in the country.



**High resolution aquifer mapping and management in Arid areas of India:** Central Ground Water Board (CGWB), Ministry of Jal Shakti has initiated also high-resolution mapping of aquifers using modern heli-borne geophysical survey in parts of the arid areas spread over the states of Rajasthan, Gujarat and Haryana. The study has been taken up in collaboration with Ministry of Science and Technology. CGWB and CSIR-NGRI, Hyderabad have signed a Memorandum of Agreement (MoA) for High Resolution Aquifer Mapping and Management in Arid Regions of North Western India, by using advanced Heli-borne Geophysical Surveys in parts of the States of Rajasthan, Gujarat Haryana, Punjab and Himachal Pradesh, covering an area of 3.88 lakhs sq km under the National Aquifer Mapping Programme with financial outlay of Rs. 54 Cr for Phase-I. The Heliborne Surveys have been proposed in two phases.

During Phase-I, 1.01 lakh sq.km area had been proposed in 2020-22, out of which, 19,020 sq.km area is in priority areas of Sikar, Jaisalmer and Jodhpur districts of Rajasthan and Kurukshetra and Yamuna Nagar districts of Haryana. The area covered spread over 91 Administrative Blocks including 46 Blocks of Rajasthan, 36 Blocks of Gujarat and 9 Blocks of Haryana State.

**Assessment of Dynamic Ground Water Resources of India:** The assessment of Dynamic Ground Water Resources of each State/UT has been carried out jointly by Central Ground Water Board and State Nodal/Ground Water Department periodically as per the *Ground Water Estimation Committee 2015 (GEC-2015)* methodology under the guidance of the respective State/UT Level Committees (SLCs) and overall supervision of Central Level Expert Group (CLEG). As per the latest assessment in 2022, the total annual groundwater recharge in the country has been assessed as 437.60 bcm. The annual groundwater extraction is 239.16 bcm. The average stage of groundwater extraction for the country as a whole works out to be about 60.08 %. Out of the total 7089 assessment units (Blocks/ Mandals/ Talukas/Firkas) assessed in the country, 1006 (14 %) units are categorized as ‘Over-exploited’, 260 (4 %) units as ‘Critical’, 885 (12 %) units as ‘Semi-critical’ and 4780 (67 %) units as ‘Safe’ and 158 (2%) as ‘Saline’. The web-based application “INDIA-GROUNDWATER RESOURCE ESTIMATION SYSTEM (IN-GRES) developed by CGWB in association with IIT-Hyderabad for automated estimation of the dynamic ground water resources provides a common and standardized platform for GW Resource Assessment for the entire country.

Shri. Gajendra Singh Shekhawat, The Honourable Union Minister of Jal Shakti, has released the Report of “National Compilation of Dynamic Ground Water Resources of India 2022” on 9th November, 2022.





**Rajiv Gandhi National Ground Water Training and Research Institute (RGNWTRI):** As a part of the three-tiered training programme being implemented by Rajiv Gandhi National Ground Water Training and Research Institute (RGNWTRI), 84 trainings of various types (Tier I- 62, Tier II- 28 & Tier III- 57) were conducted during January to November 2022. Nearly 10677 participants included ground water professionals as well as users at grassroots level participated.

**Pradhan Mantri Krishi Sinchayi Yojana – Har Khet Ko Pani – Ground Water (PMKSY-HKGP-GW):** Pradhan Mantri Krishi Sinchayi Yojana (PMKSY) was formulated with the vision of extending the coverage of irrigation ‘Har Khet Ko Pani’ in a focused manner. The scheme of PMKSY was approved in 2015-16 has, inter-alia, a component of Ground Water for creating additional irrigation from ground water resources. Ground water component aims utilizing ground water for irrigation purpose in areas, where ground water is sufficiently available. Further, to enhance small and marginal farmer’s income in such areas by providing assured irrigation facility under the scheme. Operational guidelines for Ground Water component were issued by the Ministry of Water Resources, RD & GR, in July 2016. However, keeping in view of various requirements to implement the scheme and feedback received from State Governments, guidelines have been revised on 8.11.2018 and 28.05.2019.

The beneficiary under this scheme is small and marginal farmers only with priority to be given to SC/ST and Women farmers. Ground Water irrigation facility through Dug wells, Dug cum Bore wells, Tube wells and Bore wells etc. can be funded for schemes in areas categorized as SAFE and meeting the following criteria:

- ax. Less than 60 per cent of the annual replenishable groundwater resources have been developed.
- ax. Average annual rainfall of 750 mm or more to have availability of enough water for recharge;
- ax. Shallow groundwater levels within range of 15m below ground level or less during pre-Monsoon period.

Ground water development for irrigation is planned in such a way that after implementation of the project, stage of Ground Water extraction should not exceed 70% at any time. The guidelines outline measures to prevent over-exploitation and facilitate recharge to ground water. Suitable recharge measures are to be taken up under NRM component of MGNREGS or any other recharge scheme in the target area of the present scheme to provide sustainability to ground water. State/UT Government are supposed to ensure that micro-irrigation practices are implemented in at least 30% of the pro irrigated area in convergence with relevant scheme(s) of Central Government/State/UT Government



The scheme effectively launched in 2019-20 after revision of guidelines with target create nearly 1.5 Lakh ha of additional command area by constructing nearly 50,000 irrigation wells and benefiting more than 1.96 Lakh small and marginal farmers in 12 States namely Assam, Arunachal Pradesh, Gujarat, Nagaland, Manipur, Mizoram, Tripura, Tamil Nadu, Uttar Pradesh, Uttarakhand, Telangana and West Bengal.

So far 15 projects in 12 States amounting Rs.1719 crores were approved with Central assistance of Rs. 1270 crores up-to 27th November 2022 Rs 700.33crores has been released as central Assistance to 10 States. However, Telangana and West Bengal states have not yet signed MOA for implementation of the scheme with DoWR, Ministry of Jal Shakti.

As on November 2022, more than 29229 irrigation wells have been constructed and command area more than 77123 ha has been created, benefiting nearly 66440 small and marginal farmers.

### **G. National Water Informatics Centre:**

**Water Information Management System (WIMS):** It is a centralized web enabled data aggregating platform developed to capture both surface water and ground water resources data in automated manner through telemetric sensors and by manual data entry. Almost all central & State agencies are sharing their time series data on river level, discharge, reservoir level, ground water level, surface & ground water quality etc on the portal. New modules for ground water data report generation, historical data migration etc; to facilitate users have been completed in this year. Various updates were implemented for Water Quality data entry and report creation modules as per the inputs provided by CGWB.

**India-Water Resource Information System (India-WRIS):** It is a web portal for visualization and dissemination of water resources related information. The system now contains spatial, non-spatial, time series and static hydro-meteorological data like rainfall, river water levels and discharge, ground water levels, water quality, soil moisture, climatic, geological and other geo-morphological data on a standardized National GIS framework for utilization by users. There are 8 dynamic modules, 12 semi dynamic modules, 13 static modules and 10 utilities & tools available for the users to access, download and visualize the information. During the year, the modules like Reservoir, Soil Moisture, Evapo-transpiration, Water Resource Project have been revamped and a new forest/ tree cover module has been developed. Further, data related to hydro-structures, waterbodies, ground water resources and snow glacial lakes are updated with the latest data. The two portals / System are constantly being enriched through regular data updation and by adding new layers to make the portals more robust and dynamic.

**Data Dissemination:** Apart from regular arrangements made with organizations under the Department of Water Resources RD & GR like Central Water Commission, Central Ground Water Board etc., arrangements have been made with Survey of India, Central Pollution Control Board and other departments of state governments for regular data sharing and further dissemination of information to public.

In WIMS, data on various hydro-meteorological parameters along with meta-data is shared with various user agencies and other stake-holders by means of FTP, APIs, DB exports. The data available in India-WRIS is shared through API with data.gov.in, an open government data platform and NRSC for developing flood forecasting applications.



**Development of State Water Informatics Centres (SWIC):** NWIC is encouraging and supporting States to establish State Water Informatics Centres (SWIC) as a state water resources data repository and development of State Water Resource Information System (State-WRIS) by providing them necessary technical guidance & IT infrastructure support. The SWIC will be responsible for the collection of data from different state departments/organizations, validating it and disseminating it through the State Water Resources Information System (State-WRIS) & developing State-specific tools and applications to feed the central system for basin and regional level policy planning and taking strategic decisions based on authentic data analytics. Policy framework for providing support to the States by NWIC has been sent to states as well as UTs. As of now, 11 states have signed the MoA for establishing SWIC with NWIC. Following the signing of the MoA, NWIC provided training on setting up the State-WRIS to experts/professionals from the states.

**Water and Allied Resources Information and Management System (WARIMS) (earlier IWCIMS):** Integrated Water and Crop Information and Management System (IWCIMS), now renamed as Water and Allied Resources Information and Management System (WARIMS) is being developed as an holistic and comprehensive platform that will integrate database, applications, models and information for identified use cases pertaining to water resources ranging from irrigation management, reservoir management, water use efficiency, water demand management, demand forecasting, flood forecasting, ground water quality and management etc. to provide support through Nine (09) themes with regards to planning, design, formulation and management of water resources and allied sectors. As of now, 10 States have signed MoA to come on-board for developing state-specific applications under WARIMS.

A feasibility study has been conducted and recommendations on technology stack, database, cloud and identification of stakeholder departments & agencies and in-depth studies of respective IT/Non-IT systems of all internal agencies of MoJS and implementation strategies have been suggested.

#### **H: Progress under the scheme “Irrigation Census”:**

Minor Irrigation Census conducted quinquennially in order to create a sound and reliable database on groundwater and surface water minor irrigation schemes in the country. The Minor Irrigation Census is conducted under the centrally sponsored scheme “Irrigation Census” with 100% central funding through which State Statistical Cells constituted under different States/UTs are also supported. The sixth Minor Irrigation Census with reference year 2017-18 is currently under implementation where in the Ministry has also launched the first Census of Water bodies covering all water bodies in the country, both rural and urban.

During 2022, the following progress under the scheme “Irrigation Census” has been achieved:

- i. The field work and data entry/validation work of 6<sup>th</sup> Minor Irrigation Census and first Census of Water bodies has been completed by all the States/UTs.
- ii. The admissible funds were released to States/UTs after thorough examination of proposals submitted by States/UTs for release of funds.
- iii. The releases were also made to the state Statistical Cells for incurring expenditure on salaries, allowances etc.

#### **I. Completion of balance works of North Koel Reservoir Project**





The Department has taken up the long pending project for completion of balance works of North Koel Reservoir Project, Bihar and Jharkhand on North Koel River is situated in the most backward tribal area of Palamu and Garhwa districts of Jharkhand. The Union Cabinet has approved the proposal for balance works of North Koel Reservoir Project at an estimated cost of Rs 1622.27 crore over three financial years from the start of the project. Project will provide irrigation benefit to 111,521 hectares of land annually in drought prone areas of Aurangabad and Gaya districts of Bihar and Palamu and Garwa districts of Jharkhand. Project also has the provision for supply of 44 MCM water for drinking and industrial water supply. 10% works on Dam & Appurtenant has been completed, 95% Progress has been achieved at Mohammadganj Barrage while 75% Progress achieved at Left Main Canal (LMC).

## **Flood Management and Border Areas Programme (FMBAP)**

The "Flood Management Programme (FMP)" and "River Management Activities and Works related to Border Areas" (RMBA) under operation during XII Five Year Plan were merged as "Flood Management and Border Areas Programme" (FMBAP) for the period 2017-18 to 2019-20 and further extended up-to March, 2021. Cabinet further provided approval to the scheme up-to September, 2022. The process for EFC approval from Cabinet up-to March, 2026 is underway. Since the inception of FMP/RMBA & till March, 2022, Central Assistance of Rs. 6686.79 Cr. has been released to Union Territories/State Governments under FMP component of FMBAP scheme and CA of Rs. 1095.16 Cr. has been released to UTs/States under RMBA component of FMBAP scheme.

### **K. India and Bangladesh Matters**

#### **India Bangladesh Water Resources Secretary Level meeting and 38<sup>th</sup> Ministerial level Joint Rivers Commission held in August 2022.**

The India-Bangladesh Water Resources Secretary level meeting under the framework of the Joint Rivers Commission was held on 23<sup>rd</sup> August 2022 at New Delhi. The 38<sup>th</sup> Meeting of the India-Bangladesh Joint Rivers Commission was held in New Delhi on 25<sup>th</sup> August, 2022. Shri Gajendra Singh Shekhawat, Hon'ble Minister for Jal Shakti, Government of the Republic of India and Chairman of India-Bangladesh Joint Rivers Commission presided over the meeting and led the Indian delegation. The Bangladesh delegation was led by Mr. Zaheed Farooque, MP, State Minister, Ministry of Water Resources, Government of the People's Republic of Bangladesh and Co-Chairman of the India-Bangladesh Joint Rivers Commission.

#### **MoU signed on 06<sup>th</sup> September 2022 on withdrawal of water common border river Kushiya.**

A Memorandum of Understanding (MoU) was signed on 6<sup>th</sup> September, 2022 between Ministry of Jal Shakti, Government of the Republic of India and Ministry of Water Resources, Government of the People's Republic of Bangladesh on withdrawal of up-to 153 cusecs of water each by India and Bangladesh from the common border river Kushiya during the dry season for the consumptive water requirements of each country. This Memorandum of Understanding will further strengthen the cooperation between India and Bangladesh on water resources management of common rivers. Both India & Bangladesh will withdraw an equal amount of water from the common stretch of Kushiya river during the dry season (1<sup>st</sup> November to 31<sup>st</sup> May). The Indian State of Assam will benefit from this MoU, as availability of assured water for consumptive requirements, will boost agriculture and other allied activities in the region, particularly in Karimganj District.





## India-Bangladesh 77<sup>th</sup>, 78<sup>th</sup> and 79<sup>th</sup> Joint Committee meetings for the sharing of Ganga/Ganges waters at Farakka between *India and Bangladesh* as per the treaty of 1996.



- a. The 77<sup>th</sup> meeting of the Joint Committee on sharing of the Ganga/Ganges Waters at Farakka was held at Kolkata on 14<sup>th</sup> April, 2022 after visit to the joint observation sites at Farakka on April 12, 2022.
- b. The 78<sup>th</sup> meeting of the Joint Committee on sharing of the Ganga/Ganges waters at Farakka was held at Dhaka on May 19, 2022 after a visit to the joint observation site at Hardinge Bridge, Pakshey on May 18, 2022.
- c. The Seventy Ninth (79<sup>th</sup>) meeting of the Joint Committee on sharing of the Ganga/Ganges waters at Farakka was held on 13<sup>th</sup> December, 2022 on virtual platform for finalization of Annual Report of the lean/dry season of the year 2022

During the meetings the Indian delegation was led by Mr. Atul Jain, Commissioner (FM), Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, Government of the Republic of India and Member, India-Bangladesh Joint Rivers Commission. The Bangladesh delegation was led by Mr. Md. Mahmudur Rahman, Member, India-Bangladesh Joint Rivers Commission, Ministry of Water Resources, Government of the People's Republic of Bangladesh.

### **L. National Framework for Sediment Management**

Department of Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti has finalized the "National Framework for Sediment Management" after extensive discussion and consultation with State Governments/ UTs and stake-holding Central Ministries/ Departments. This National Framework document will serve as guidance document for efficient and sustainable sediment management in the country.

### **M. National River Conservation Directorate**

Cleaning of river is a continuous process and Government of India is supplementing the efforts of the State Governments in addressing the challenges of pollution of rivers by providing financial and technical assistance. Assistance is provided to State Governments for abatement of pollution in identified stretches of various rivers (excluding river Ganga and its tributaries) under the Centrally Sponsored Scheme of National River Conservation Plan (NRCP) on cost sharing basis between the Central & State Governments for taking up various pollution abatement works relating to interception & diversion of raw sewage, construction of sewerage systems, setting up of sewage treatment plants, low cost sanitation, river front/bathing ghat development, etc.

### **Achievements and initiatives under NRCP:**

- Hon'ble Prime Minister has laid the foundation stone on 11<sup>th</sup> December, 2022 for externally aided project 'Pollution abatement of river Nag at Nagpur' at a cost of Rs.1926 crore.
- Project for "Pollution abatement of River Tista at Mangan Town, Sikkim" sanctioned at a cost of Rs.91.93 crore.
- Project for "Pollution abatement of River Teesta at Chungthang Town, Sikkim" sanctioned at a cost of Rs.17.24 crore.
- Project for "Pollution abatement of River Rangit at Geyzing Town, Sikkim" sanctioned at a cost of Rs.88.80 crore.



- Project of "Assessment of ecological status of the select 6 Indian rivers (namely Cauvery, Godavari, Periyar, Mahanadi, Narmada & Barak River)" under National River Conservation Plan (NRCP) by Wildlife Institute of India (WII), Dehradun at an estimated cost of Rs. 24.56 Crore.
- In order to broad base the activities under NRCP and amalgamate biodiversity conservation and stakeholder participation in the river conservation process, WII (Wildlife Institute of India) has been entrusted to carry out a biodiversity study for six rivers, Mahanadi, Narmada, Godavari, Periyar, Cauvery & Barak.
- Sewage Treatment Plant of 68.00 mld capacity has been created under NRCP.
- Central Assistance amounting to Rs. 230.00 crore released to various State Governments/Agencies for implementation of projects under NRCP.
- "Azadi ka Amrit Mahotsav" 2022 has been celebrated in collaboration with all stakeholders of concerned States/UTs for creating awareness amongst the citizens and generating public Participation for the purpose.

#### **N. Command Area Development & Water Management (CADWM):**

Government of India is implementing a scheme called Command Area Development & Water Management (CADWM) under Pradhan Mantri Krishi Sinchai Yojana (PMKSY). The scheme was launched with an aim to enhance physical access of water on farm and expand cultivable area under assured irrigation. 99 prioritized Projects have been identified for expeditious completion adopting innovative funding through creation of 'Long Term Irrigation Fund' under NABARD. The targeted Culturable Command Area (CCA) of the presently 88 included projects are 45.08 lakh Ha. and estimated central assistance (CA) is Rs 8235Crore. During 2016-17 to 2021-22 (up-to March, 2022), CA amounting to Rs 2855.63Crore was released to 79 projects while the CCA progress reported by States is 16.41Lakh ha. During 2022-23 (till 23<sup>rd</sup> December 2022), CA amounting to Rs 25.28Crore has been sanctioned to 03 project.

#### **Central Soil and Materials Research Station (CSMRS):**

CSMRS is an ISO 9001:2015 certified organization which deals with field and laboratory investigations, research and problems in geotechnical engineering, concrete technology, construction materials and associated environmental issues, having direct bearing on the development of irrigation and power in the country and functions as an adviser and consultant in the above fields to various projects and organizations in India and abroad. The Research Station is involved in the safety evaluation of existing hydraulic structures and quality control of construction for various river valley projects. The function of CSMRS is covered in three main disciplines namely Soil Discipline, Rock Discipline and Concrete Discipline. The sphere of activity of CSMRS is covered by the following key areas.

- The **Soil Discipline** deals with soil characterization, rockfill material characterization and geosynthetics material characterization. This discipline conducts foundation investigations for assessing the competency of the foundation strata for the construction of the structures and borrow area investigations for ascertaining the suitability of the soils collected from the borrow area to be used for the construction of the structures. It also carries out studies on expansive and dispersive soils, hydraulic fracturing of core materials, quality control, quality assurance, dynamic characterization of soil, and numerical modelling-based research in this area.
- The **Rock Discipline** deals with in-situ rock mass characterisation, laboratory assessment of intact rock geophysical investigations and geotechnical instrumentation. This discipline conducts

laboratory investigation of intact rock, in-situ tests for determination of shear strength properties, formability characteristics of rock mass, in-situ stress measurements, grout ability tests in rock and rock bolt/anchor pull-out tests. It carries out investigations using the geophysical methods to decipher the sub-surface ground conditions, delineation of bed rock, thickness of overburden, detection of geological anomalies, blast vibration monitoring studies etc. It is also involved in health monitoring of the structures through instrumentation, geophysical studies and numerical modelling.

The **Concrete Discipline** deals with construction materials characterization, concrete mix design, special studies on concrete and non-destructive diagnosis of the concrete structures. It carries out special tests for concrete durability assessment, under water abrasion test, concrete permeability test, testing of epoxy materials, alkali aggregate reactivity study etc. It also carries out chemical characterization of all construction materials including the admixtures. It provides consultancy for quality control and quality assurance services for concrete structures. It is also involved in diagnostics health monitoring, repair and rehabilitation of structures, durability of concrete etc.

The contributions of CSMRS in the field of Geotechnical Investigation of River Valley Projects are:

- Carried out Geotechnical Investigations for 33 Water Resources Projects.
- 63 Project Reports on Geotechnical and Construction material Investigations were prepared.
- Publication of 48 Research Papers in National and International Journals/Conferences.
- Comments imparted on 36 Detailed Project Reports and their compliances.
- Organization of 8 virtual training courses in which 164 Engineers/ trainees/students from various Organizations/Institutions/colleges participated.
- CSMRS is having Institutional Cooperation with the organizations for development and knowledge sharing/ gaining in the field of Geotechnical Investigation of River Valley Projects –
  - Norwegian Geotechnical Institute Oslo, Norway on cooperation in the field of geotechnical engineering and materials sciences.
  - Satluj Jal Vidyut Nigam Limited, Himachal Pradesh on Cooperation in geotechnical investigation and construction material survey of hydroelectric projects.
  - NEHARI, Brahmaputra Board, Assam on Cooperation in the fields of geotechnical engineering and construction materials including training of officers of NEHARI.
- CSMRS has signed MoU with the organizations for quality improvement, right geotechnical investigations and to ensure viable materials available for the project
  - QA/QC with Polavaram Project Authority, Tehri Hydro Development Corporation India Limited, Uttarakhand; Uttarakhand Jal Vidyut Nigam Limited, Irrigation Construction Division – II, Uttar Pradesh, Water Resources Department, Rajasthan and Uttar Pradesh Irrigation Department, Uttar Pradesh.
  - Geotechnical Investigation and Construction Material Survey with National Water Development Agency, North Eastern Investigation Division-I, CWC, Silchar, Kholongchhu Hydroelectric Limited, Satluj Jal Vidyut Nigam Limited (SJVNL), Shimla and Tehri Hydro Development Corporation India Limited.
- Representing in BIS committees dealing geotechnical investigation, materials, design parameters etc for River Valley Projects in the Civil Engineering Division, Water Resources Division and Geosynthetics Division. Presence of CSMRS in the committees of CEDC, CED-2, CED2:1, CED-2:2, CED-4, CED-6, CED-30, CED-39, CED-43, CED-48, CED-53, CED-55, CED-56, WRDC,



WRD-5, WRD-6, WRD-8, WRD-9, WRD-13, WRD-14, WRD-15, WRD-16, WRD-22 AND TXD-20 and actively participated in the framing of new codes and updating existing in the relevant field.

Applied research work on the issues comes up while Geotechnical Investigation of River Valley Projects are taken up and based on that:

Some research works is in progress under self-sponsored research.

Published one research review report.

Published one monograph on Chemical Analysis of Soil for Water Resources Projects.

The contribution of CSMRS towards the realization of the Interlinking of rivers to utilize every single drop of water for country's development has been highly fruitful – not only in providing design parameters but also in reducing the project cost by suggesting changes in the alignment of the links based on the investigations.

### **P. Tungabhadra Board:**

- Modernization of TB Right Bank Low Level Canal was taken up during 2019-20 and completed up to Km 115 during 2022-23 and further from Km 115 to Km 205 was taken up in 2022-23 and 40% of the same has been completed.
- **The total yield of the TB Reservoir has crossed 600 TMC mark for the first time in the last 60 years and only 2<sup>nd</sup> time since inception of the TB Reservoir (i.e., from 1953).**
- Two power houses are being maintained by the Tungabhadra Board with a total installed capacity of 72 MW. A target of 160 million units of power generation is envisaged during the water year 2022-23. Against this, the power generated till end of December-2022 is 137 million units. Anticipated power generation from January 2023 to March 2023 will be 68 million units by which the generation for the year 2022-23 would be 205 million units crossing 200 million units consecutively for the second year 2022-23 in a row as in 2021-22 after 12 years for a worth of Rs.61.50 Crores.
- Fish Farm, Ice Plant and TB Reservoir Fisheries Rights of the TB Board are outsourced through Lease-Develop-Operate-Transfer Basis, for a period of 5 years from 01.06.2022. The gross earnings from this lease is Rs.2.42 crores for the 2022-23 financial year which is a big reform introduced in the Fisheries sector of TB Board.
- Canal flow measurement with modern Acoustic Doppler Current Profiler (ADCP) has been implemented in the TB Board which is propagating awareness among the farmer community about the overuse and misuse of canal water. Since usage of ADCP has given positive results, the usage of the same is continued during the year 2022 also.
- By making use of Telemetry system, daily live flow data of TB Project canals is being displayed on the website [www.tbbliveflow.com](http://www.tbbliveflow.com) and TB Reservoir & other details are being displayed on the website [www.tbboard.gov.in](http://www.tbboard.gov.in) for the information of Member States, general public and farmer community. Being a continuous activity, the same is continued during the year 2022 also.
- A Twitter account of TB Board [https://twitter.com/TB\\_Board](https://twitter.com/TB_Board) has been started and continued for displaying the activities of TB Board including Azadi Ka Amrit Mahotsav in this year 2022 also.
- A Facebook account ( <https://www.facebook.com/profile.php?id=100066667547900>) of Tungabhadra Dam with followers of over 57,000 is being maintained in this year 2022 also.
- Earlier, most of the Units in TB Board like Community Hall (MST Hall), Parnaja Aquarium, Recreational activities in the Gardens etc., were running with more expenditure and less revenue to the Government / TB Board. This was keenly watched, examined and after analyzing the issues, it was decided to lease the units on Public-Private Partnership (PPP Model) where the successful Bidder agency will have to establish newly invest the initial capital on the existing unit,

renovate/modify run the specific activity for some fixed duration duly remitting the lease rent to the Board which will be a good revenue to the Govt / TB Board without incurring any expenditure by the TB Board. By adopting this methodology, TB Board old building MS Tirumala Iyengar Hall (community hall) was rented on lease basis for 5 years thus generating good revenue of Rs.84 lakhs against usual expenditure burden of likely Rs.25 lakhs.

• The following new concepts were introduced for generating Revenue to TB Board;



1. Dashing Cars in vacant place of Garden area of TB Board was established on lease basis for 7 years thus generating a revenue of Rs.127 lakhs.



2. Amusement Park for Children in Vacant places of Garden area of TB Board was established on lease basis for 7 years thus generating a revenue of Rs.130 lakhs.



3. Water P

4. ark for Children in Vacant places of Garden area of TB Board is established on lease basis for 7 years thus generating a revenue of Rs.76 lakhs.

5. Ropeway for the visitors on PPP model connecting from the Dam Gardens to Vaikunta Guest House was awarded which will generate good revenue to TB Board apart from feast to the Tourists.

6. BTPS pipe line was allowed all along the boundary of the canal of RBHLC & RBLLC collecting a land lease of Rs.52.11 Lakhs which is a good revenue to TB Board. Apart from fetching some revenue, this BTPS pipe line with boundary stones is also acting as a protection to TB Board land from unauthorized encroachments.

#### **Q. Jurisdiction of Krishna River Management Board (KRMB) & Godavari River Management Board (GRMB)**

- The jurisdiction of KRMB& GRMB was notified by Gazette Notification S.O. 2842(E) dated 15<sup>th</sup> July 2021.
- In the light of slow progress in implementation of clauses namely 2(f) and 2(g) of Gazette Notification, amendment has been made for operation of clauses 2(f) and 2(g) by another six months i.e., from 15.01.2022 to 14.07.2022.
- An amendment vide Notification dated 28.07.2022 have been made in the Notification of KRMB to exempt 6 projects mentioned under Para 10 of the Eleventh Schedule of APRA 2014 from the ambit of clauses 2(f) and 2(g) of Gazette Notification.

#### **R. Surface Minor Irrigation (SMI) and Repair, Renovation and Restoration (RRR) of Water Bodies schemes of PMKSY-HKKP:**

Under the Surface Minor Irrigation (SMI) scheme, **since 12th plan onwards**, 7359 schemes are ongoing with an estimated cost of ₹ 15204crores. Central Assistance (CA) of Rs. 8696croreshave been released to states up-to March, 2021. Further, 4326 schemes have been reported to be completed up-to March, 2022. Target irrigation potential creation of these schemes is 11.5 L Ha and out of this, 7.12 L Ha is reported to be created till March, 2022. In the current financial year 2022-23, ₹ 39.07 crore has been released till date.

Under the Repair, Renovation and Restoration (RRR) of Water Bodies scheme, since 12th plan onwards, 3155 schemes are ongoing with an estimated cost of Rs. 2881 crore. Central Assistance (CA) of Rs. 495.738Crore has been released to states up to March, 2022. Further, 1712 water bodies





have been reported to be completed up to March, 2022. Target irrigation potential restoration of these schemes is 1.89 L Ha and out of this, 1.32 L Ha is reported to be restored till March, 2022. In the current financial year 2022-23, Rs. 11.85Crore has been released till date.



### **National Hydrology Project**



National Hydrology Project (NHP), a Central Sector Scheme, is being implemented w.e.f. by DWR, RD & GR on pan India basis with the support of the World Bank. The objective of the project is to improve the extent, quality, and accessibility of water resources information and to strengthen the capacity of targeted water resources professionals and management institutions in India.



In line with the defined objective, NHP is striving hard to bring transformation in the water resources sector as a whole. Moving away from the current system of decision making based on 'experience and judgments', improved water management is being attempted through introduction of informed decision making, relying on a host of modern analytical tools and loads of data from automated sensors on each component of the water cycle in real-time or near real-time. The same is being done in a collaborative mode by involvement of Central and State Government Organizations to ensure proper capacity building is there and the sense of ownership prevails among the Organizations referred as Implementing Agencies (IAs) of NHP. There are 48 IAs which are taking forward this initiative spanned over a period of 8 years (from 2016-17 to 2023-24).

#### **Project Concept:**

- Modernizing water Resources Monitoring network
- Transforming Knowledge Access
- Development of Analytical Tools
- Modernizing Institutions and capacity building

#### **Beneficiaries:**

- Central and state agencies responsible for surface water and/or ground water planning and management, including river basin organizations (RBOs)
- Other stakeholders including general public and farmers

#### **Initiatives under this project:**

- i. Establishment of National Water Informatics Centre as a nation-wide repository of water resources data- Single window system for accessing water resources related information, analytical tools and knowledge products. The Centre was established in 2018 and strengthened for acquiring and disseminating water resources information to various stake holders through web enabled system in public domain. NWIC has undertaken an ambitious initiative to develop Water and Allied Resources Information and Management System (WARIMS) which will provide support to the various stakeholders in knowing the resources well and taking informed decision for better management of water resources. Feasibility report for the same has been completed in November 2022.
- ii. Modernization of hydro-meteorological data acquisition system with thrust on real time data acquisition system (RTDAS). As on date around 10000 hydro-met stations installed for acquiring real time data from the remote surface and ground water monitoring locations.



III. Seamless sharing of hydro-meteorological data among all the Central and State Implementing agencies of National Hydrology Project so that data can be used by various organization in development of analytical tools for informed decision making.

IV. Capacity building of Water resources professionals of the states of India in using various analytical tools including mathematical models, remote sensing and GIS techniques, etc. as required for planning and management of water resources and dealing with extreme event management such as floods and droughts. In Nov. 2021, a unique Young Water Professional Programme launched in collaboration with Australia Water Partnership and Australia India Water Centre and the same has been successfully completed in November 2022.

V. A no. of analytical tools which are required for basin level planning of water resources as well as to deal with extreme events are being developed at National/Basin level.

### National Water Mission:

**Catch the Rain Campaign:** “Catch the Rain” with a tagline “Catch the Rain – when it falls, where it falls” to nudge all stake-holders to create Rain Water Harvesting Structures (RWHS) suitable to the climatic conditions and sub-soil strata to catch the rains with the people’s active participation. Under this campaign drives to make water harvesting pits, rooftop RWHS, check dams, etc; removal of encroachments and de-silting of tanks to increase their storage capacity; removal of obstructions in the channels which bring water to them from the catchment areas, etc; repairs to step-wells and using defunct bore-wells to put the water back to aquifers, etc are some of the activities suggested to be taken up.

**“Jal Shakti Abhiyan: Catch the Rain - 2022” campaign:** After the successful campaign of Jal Shakti Abhiyaan(s) of 2019 and 2021 in generating awareness amongst the citizen(s) of the country, “Jal Shakti Abhiyaan: Catch the Rain– 2022 on theme “*where it falls, when it falls*” was launched by Hon’ble President for being implemented from 29<sup>th</sup> March 2022 to 30<sup>th</sup> November 2022. This is the third year that the country is in mission mode, organizing a Jal Andolan to conserve rain water and recharge ground water.

Till 30.11.2022, a total of **10.58 Lakh water conservation & rainwater harvesting structures have been constructed, 2.34 Lakh traditional water bodies have been renovated, 7.19 Lakh reuse and recharge structures have been created, 13.33 Lakh water shed development activities have been undertaken and 78.26 Crore trees have been planted** under the campaign. About 125 officers from CWPRS visited various sites throughout India under the JSA Abhiyan: Catch the Rain.

**Bureau of Water Use Efficiency (BWUE):** The Bureau of Water Use Efficiency (BWUE) has been set up under the administrative control of Department of Water Resources, RD & GR on 20.10.2022 for promotion, regulation and control of efficient use of water in irrigation, industrial and domestic sector. **The Bureau will be a facilitator for promotion of improving water use efficiency across various sectors namely irrigation, drinking water supply, power generation, industries, etc. in the country.** The Bureau is set up as a division under the overall supervision of Additional Secretary and Mission Director, National Water Mission.

### U. National Water Development Agency (NWDA): Ken-Betwa Link Project

Under National Perspective Plan (NPP) formulated by Government of India, 30 inter-basin water transfer links (16 Peninsular and 14 Himalayan component) have been identified by National Water Development Agency for preparation of feasibility reports (FRs). NWDA is making concerted efforts

to arrive consensus among party States for implementation of six priority link projects including Ken-Betwa Link Project. Detailed projects reports (DPRs) of 7 links, Feasibility reports of 24 links and Pre-feasibility reports of all the 30 links have been prepared.

Ken-Betwa Link Project (KBLP) is the first inter-linking of rivers (ILR) project for which implementation has been initiated with an estimated cost of Rs. 44,605 crore (year 2020-21 price level) having central support of Rs. 39,317 crores through a Special Purpose Vehicle viz. *Ken Betwa Link Project Authority (KBLPA)*. The project will be of immense benefit to the water starved *Bundelkhand Region*, spread across the States of Madhya Pradesh and Uttar Pradesh which includes districts of *Panna, Tikamgarh, Chhatarpur, Sagar Damoh, Datia, Vidisha, Shivpur & Raisen and Banda, Mahoba, Jhansi & Lalitpur respectively*.

For environment management and safeguards, a comprehensive landscape management plan has been prepared by Wildlife Institute of India and its final report of was released on 2<sup>nd</sup> June, 2022. Process of constitution of a Greater Panna Landscape Council (GPLC) is under progress for initiating implementation of Landscape Management Plan through various stakeholders.

A Project Management Consultant (PMC) for assisting KBLPA in implementation of the project is proposed to be hired and necessary modalities for engagement of PMC have been initiated by a Consultation Evaluation Committee (CEC) constituted for the same. The project is planned to be completed in 8 years by March, 2030.

#### **7<sup>th</sup> India Water Week 2022: -**

The Department organized the 7<sup>th</sup> India Water Week–2022 from 1-5 November 2022 at India Expo Centre Greater Noida with theme "**Water Security for sustainable Development with Equity**". The event commenced with the inauguration of the event by Hon'ble President of India on 1<sup>st</sup> November, 2022 during which Hon'ble Governor and Hon'ble Chief Minister of Uttar Pradesh were present. The event ended with the valedictory address by Hon'ble Vice President of India in the august presence of Hon'ble Union Ministers of Agriculture and Farmers Welfare and Jal Shakti. The event was well attended throughout with extensive media coverage. The participation in the event was quite inclusive covering nearly all stakeholders working in the field of water sector i.e. departments/organizations of MoJS, Central Ministries, State Governments, delegates from a number of foreign countries, industry, international organizations, civil society, NGOs, academic institutions, researchers, students, school children etc. The inaugural function was attended by about 2,000 participants. The state-of-art exhibition was attended by about 100 industries, State Governments and international organizations. International organizations (ICID, IWMI, World Bank) participated in conference and organized sessions. Partner Country viz. Denmark organized one side event. Various Departments under MoJS organized nine technical sessions showcasing and covering programs/schemes of Ministry of Jal Shakti. The event also included 10 seminars and 10 panel discussion. During the event 200 abstracts/papers were received and about 100 presentations/poster presentations were made.

#### **V. Dam Safety Act, 2021**

After China and USA, India is the 3<sup>rd</sup> largest dam-owning nation in the world. There are around 5,700 large dams in the country, of which about 80% are already over 25 years old. Nearly 227 dams that are over 100 years old are still functional. Although India's track record of dam safety is at par



with that of the developed nations, there have been instances of unwarranted dam failures and of poor maintenance issues.



In order to address the dam safety issues holistically, Union Government has enacted the Dam Safety Act in December 2021 and notified vide Gazette of India notification S.O. 5422(E) dated 28.12.2021 which will be effective from 30.12.2021. The Act provides for four tiers of institutional mechanism:



establishment of National Committee on Dam Safety (NCDS), National Dam Safety Authority (NDSA), State Committee on Dam Safety (SCDS), and the State Dam Safety Organization (SDSO). After enactment of the Dam Safety Act, Central Government has constituted the National



Committee on Dam Safety (NCDS) and has established the National Dam Safety Authority (NDSA) vide Gazette Notifications S.O. 757(E) and G.S.R. 134(E) dated 17<sup>th</sup> February, 2022 & S.O. 758(E)



and G.S.R. 135(E) dated 17<sup>th</sup> February 2022 respectively.

In exercise of powers conferred under Section 52 of the Dam Safety Act, the Central Government vide Gazette Notification dated 17<sup>th</sup> February 2022 published the “National Committee on Dam Safety (Procedures, Allowance and Other Expenditure) Rules, 2022” and published the “National Dam Safety Authority (Functions and Power Rules, 2022)”.

Further, as per the Section 31(1) of Act 2021, every owner of a specified dam shall undertake a pre-monsoon and post-monsoon inspections every year, through their dam safety unit. As of now, all the States have constituted the SCDSs and SDSOs as per the provisions under Section 11 and Section 14 of the Act. Further, as part of implementation of the Dam Safety Act 2021, dam owners have inspected about 5364 no of specified dams.

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**MJPS/AS**

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