सत्यमेव जयते

MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
RIVER DEVELOPMENT &
GANGA REJUVENATION,
GOVERNMENT OF INDIA

Annual REPORT 2022-23

Jal Shakti - Jan Shakti

ANNUAL REPORT

2022-23

GOVERNMENT OF INDIA

MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES
RIVER DEVELOPMENT AND GANGA REJUVENATION

NEW DELHI

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ANNEXURES

ABBREVIATIONS

AIBP	Accelerated Irrigation Benefits Programme
ADCP	Acoustic Doppler Current Profiler
ATNs	Action Taken Note
ARS	Artificial Recharge Structure
ADB	Asian Development Bank
AIIB	Asian Infrastructure Investment Bank
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
AAS	Atomic Absorption Spectrophotometer
AYUSH	Ayurveda, Yoga & Naturopathy, Unani, Siddhaand Homoeopathy
AKAM	Azadi Ka Amrit Mahotsav
BCB	Bansagar Control Board
BRB	Betwa River Board
BOOT	Build Operate Own and Transfer
BCM	Billion Cubic Meter
BOD	Biochemical Oxygen Demand
BOPs	Border Out-Posts
BB	Brahmaputra Board
B.E.	Budget Estimate
CWMA	Cauvery Water Management Authority
CWRC	Cauvery Water Regulation Committee

CAU	Central Agricultural University
CA	Central Assistance
CEA	Central Electricity Authority
CGWA	Central Ground Water Authority
CGWB	Central Ground Water Board
CIFRI	Central Inland Fisheries Research Institute
CIMO	Central Irrigation Modernization Office
CPCB	Central Pollution Control Board
CPMU	Central Project Management Unit
CPIOs	Central Public Information Officers
CSMRS	Central Soil and Materials Research Station
CVC	Central Vigilance Commission
CSIR	Scientific and Industrial Research
CWPRS	Central Water and Power Research Station
CWC	Central Water Commission
CEE	Centre for Environment Education
CWRDM	Centre for Water Resources Development & Management
CVO	Chief Vigilance Officer
CMIS	Coastal Management Information Service

CAD&WM	Command Area Development and Water Management
CEE	Committee on Establishment Expenditure
CLAP	Continuous Learning and Activity Portal
CGA	Controller General of Accounts
CCA	Cultivable Command Area
DHARMA	Dam Health and Rehabilitation Monitoring Application
DRIP	Dam Rehabilitation and Improvement Project
DoWR, RD & GR	Department of Water Resources, River Development and Ganga Rejuvenation
DSO	Dam Safety Organisation
DSC	Data and Strategy Committee
DGQI	Data Governance Quality Index
DSS	Decision Support System
DDUGJY	Deen Dayal Upadhyaya Gram Jyoti Yojana
DARPG	Department of Administrative Reforms & Public Grievances
DoAC & FW	Department of Agriculture Cooperation & Farmers Welfare
DoLR	Department of Land Resources
DoPT	Department of Personnel and Training
D&R	Design and Research
DPR	Detailed Project Report
DWRIS	Development of Water Resources Information System
DGPS	Digital Global Positioning System
DLI	Disbursement Linked Indicator
DO	Dissolved Oxygen

DGC	District Ganga Committees
DIPs	District Implementation Partners
DPAP	Drought Prone Area Programme
EMDBS	Eklavya Model Day Boarding Schools
EMRS	Eklavya Model Residential School
EAP	Emergency Action Plans
e-PAMS	A web-enabled Project Appraisal Management System
ETF	Empowered Task Force
EPC	Engineering, Procurement and Construction
EPA	Environment Protection Act
EISL	Environmental Infrastructure and Services Ltd.
ELM	Expert Level Mechanism
EHP	Extended Hydrological Prediction
ERM	Extension Renovation Modernisation
FC	Faecal Coliform
FBP	Farakka Barrage Project
FF	Flood Forecasting
FM	Flood Management
FMBAP	Flood Management and Border Areas Programme
FMP	Flood Management Programme
FE&SA	Foundation Engineering & Special Analysis
GHLSC	Gandak High Level Standing Committee
GAP	Ganga Action Plan
GFCC	Ganga Flood Control Commission
GMB	Ganga Management Board
GLOF	Glacial Lake Outburst Flood

GRMB	Godavari River Management Board
GB	Governing Body
GPIs	Grossly polluting Industries
GC	Governing Council
GWM & R	Ground Water Management & Regulation
GWQ	Ground Water Quality
GGU	Guru Ghasidas University
HPDA	Hapur Pilkhuwa Development Authority
HKKP	Har Khet Ko Paani
HPRB	High Power Review Board
HPC	High Powered Committee
H.E.	Hydro Electric
HSO	Hydrological Studies Organization
IAs	Implementing Agencies
IWIS	India Water Impact Summit
INCCC	Indian National Committee on Climate Change
INCGW	Indian National Committee on Groundwater
INCSW	Indian National Committee on Surface Water
INCs	Indian National Committees
IGNP	Indira Gandhi Nahar Project
IHHL	Individual Household Latrines
ITI	Industrial Training Institute
IEC	Information, Education & Communication
IT	Information Technology
IARI	Agricultural Research Institute
IPDS	Integrated Power Development Scheme

IRBM	Integrated River Basin Management
IWCIMS	Integrated Water and Crop Information and Management System
IWRM	Integrated Water Resources Management
ILR	Inter- Linking of Rivers
ICC	Internal Complaint Committee
INCOLD	International Commission on Large Dams
ISRWD	Inter-State River Water Disputes
IWRDS	Investigation of Water Resources Development Scheme
IMPs	Irrigation Modernization Plans
JJM	Jal Jeevan Mission
JSA:CTR	Jal Shakti Abhiyan: Catch The Rain
JSKs	Jal Shakti Kendras
JICA	Japan International Cooperation Agency
JPHCL	Jharkhand Police Housing Corporation Limited
JC	Joint Committee
JCIFM	Joint Committee on Inundation and Flood Management
JET	Joint Expert Team
JPO-SKSKI	Joint Project Office–Sapta Kosi & SunKosi Investigation
JRC	Joint Rivers Commission
JTE	Joint Team of Experts
JTT	Joint Technical Team
JWG	Joint Working Group
KSDB	Karnataka Slum Development Board

KVS	Kendriya Vidyalaya Sangathan
KHLC	Kosi High Level Committee
KRMB	Krishna River Management Board
KWDT	Krishna Water Dispute Tribunal
KIP	Kundaliya Irrigation Project
LULC	Land Use-Land Cover
LTIF	Long Term Irrigation Fund
MWDT	Mahadayi Water Disputes Tribunal
Mahanadi WDT	Mahanadi Water Disputes Tribunal
MMI	Major & Medium Irrigation
Me PGCL	Meghalaya Energy Corporation Limited
MoA	Memorandum of Agreement
MoU	Memorandum of Understanding
MCum	Million Cubic Meters
MoEF & CC	Ministry of Environment, Forest and Climate Change
MHA	Ministry of Home Affairs
MI	Minor Irrigation
NCA	Narmada Control Authority
NMC	Narmada Main Canal
NABL	National Accreditation Board for Testing and Calibration Laboratories
NAPCC	National Action Plan on Climate Change
NAQUIM	National Aquifer Mapping and Management program
NBWUE	National Bureau of Water Use Efficiency
NCC	National Cadet Corps

NCDS	National Committee on Dam Safety
NDSA	National Dam Safety Authority
NCSDP	National Committee on Seismic Design Parameters
NGRBA	National Ganga River Basin Authority
NGRI	National Geophysical Research Institute
NIC	National Informatics Centre
NIUA	National Institute for Urban Affairs
NIELIT	National Institute of Electronics & Information Technology
NHP	National Hydrology Project
NIH	National Institute of Health
NIH	National Institute of Hydrology
NMCG	National Mission for Clean Ganga
NPP	National Perspective Plan
NPCC	National Projects Construction Corporation Ltd.
NRLD	National Register of Large Dams
NRCD	National River Conservation Directorate
NRCP	National River Conservation Plan
NSS	National Service Scheme
NWDA	National Water Development Agency
NWIC	National Water Informatics Centre
NWM	National Water Mission
NYKS	Nehru Yuva Kendra Sanghatan
NDB	New Development Bank

NOC	No Objection Certificate
NEHARI	North Eastern Hydraulic & Allied Research Institute
NERIWALM	North Eastern Regional Institute of Water And Land Management
ONGC	Oil and Natural Gas Commission
OFD	On-Farm Development
ODF	Open Defecation Free
OB	Out Board
PDA	Pancheshwar Development Authority
PIM	Participatory Irrigation Management
PIC	Permanent Indus Commission
PDN	Piped Distribution Network
PIP	Polavaram Irrigation Project
PPA	Polavaram Project Authority
PGIYNER	Post Graduate Institute of Yoga& Naturopathy
PMKSY	Pradahan Mantri Krishi Sinchayee Yojana
PMAY	Pradhan Mantri Awas Yojana
PMGSY	Pradhan Mantri Gram Sadak Yojana
PFR	Pre-Feasibility
PVI	Preventive Vigilance Inspections
PAD	Project Appraisal Document
PIRC	Project Implementation Review Committee
PMC	Project Management Consultant
PMO	Project Monitoring Organization
PMU	Project Monitoring Unit
PST	Project Screening Template

PIPs	Public Interaction programs
PDS	Purpose Driven Studies
QCI	Quality Council of India
RWHS	Rain Water Harvesting Structures
RF	Rajasthan Feeder
RGNGWTRI	Rajiv Gandhi National Ground Water Training & Research Institute
RGNIYD	Rajiv Gandhi National Institute and Youth Development
RSWG	Random Sea Wave Generation
RMIS	Rationalization of Minor Irrigation Statistics
RBWT	Ravi-Beas Water Tribunal
RTDAS	Real Time Data Acquisition System
RTWQMS	Real-Time Water Quality Monitoring Stations
RRR	Repair Renovation & Restoration
R&D	Research & Development
RCNCA	Review Committee for Narmada Control Authority
RCC	Revised Cost Committee
R.E.	Revised Estimates
RBM	River Basin Mangement
RBOs	River Basin Organizations
RD & PP	River Development and Public Policy
RFD	River Front Development
RMBA	River Management Activities& Works related to Border Areas
RGoB	Royal Government of Bhutan
RIDF	Rural Infrastructure Development Fund

SKHDMP	Sapta Kosi High Dam Multipurpose Project
SSCAC	Sardar Sarovar Construction Advisory Committee
SSP	Sardar Sarovar Project
STPs	Sewage Treatment Plants
SF	Sirhind Feeder
STPI	Software Technology Parks of India
SPV	Special Purpose Vehicle
SAI	Sports Authority of India
STAC	Standing Technical Advisory Committee
SMCG	State Missions for Clean Ganga
SPCBs	State Pollution Control Boards
SPMU	State Project Management Unit
SPR	State Projects
SWIC	State Water Informatics Centers
SIWI	Stockholm International Water Institute
SSDS	Sun Kosi Storage cum Diversion Scheme
SIMP	Support for Irrigation Modernization Program
SMI	Surface Minor Irrigation
SWQ	Surface Water Quality
SoI	Survey of India
SYL	Sutlej-Yamuna Link
TARC	Technical Advisory and Review Committee
TAC	Technical Advisory Committee

TA	Technical Assistance
TLM	Technical Level Meeting
TEC	Techno-Economic Clearance
TPGVA	Third Party Government Verification Agency
TAR	Tibet Autonomous Region
TEM	Transient Electro-magnetic
TB	Tungabhadra Board
USO	United Schools Organization
UYRC	Upper Yamuna Review Committee
UYRB	Upper Yamuna River Board
VWDT	Vansadhara Water Dispute Tribunal
VR	Velocity Radar
VES	Vertical Electrical Sounding
VWSCs	Village Water & Sanitation Committees
WALMI	Water and Land Management Institute
WAPCOS	Water and Power Consultancy Services Limited
WIMS	Water Information Management System
WMCs	Water Management Committees
WRDC	Water Resources Division Council
WSPs	Water Security Plans
WUA	Water Users Association
WUAs	Water Users' Associations
WII	Wildlife Institute of India
WWCs	Women Water Champions
WRI	World Resources Institute

The Hon'ble President of India, Shri Ram Nath Kovind, presented the third National Water Awards and launched the Jal Shakti Abhiyan: Catch the Rain campaign 2022 in New Delhi on 29.03.2022.

1 OVERVIEW

The Hon'ble President of India, Smt. Droupadi Murmu inaugurated the 7th India Water Week on 01.11.2022 at the India Expo Centre in Greater Noida, Uttar Pradesh in august presence of Governor, Uttar Pradesh, Chief Minister, Uttar Pradesh, Union Minister of Jal Shakti and Ministers of State for Jal Shakti.

1. OVERVIEW

1.1 INTRODUCTION

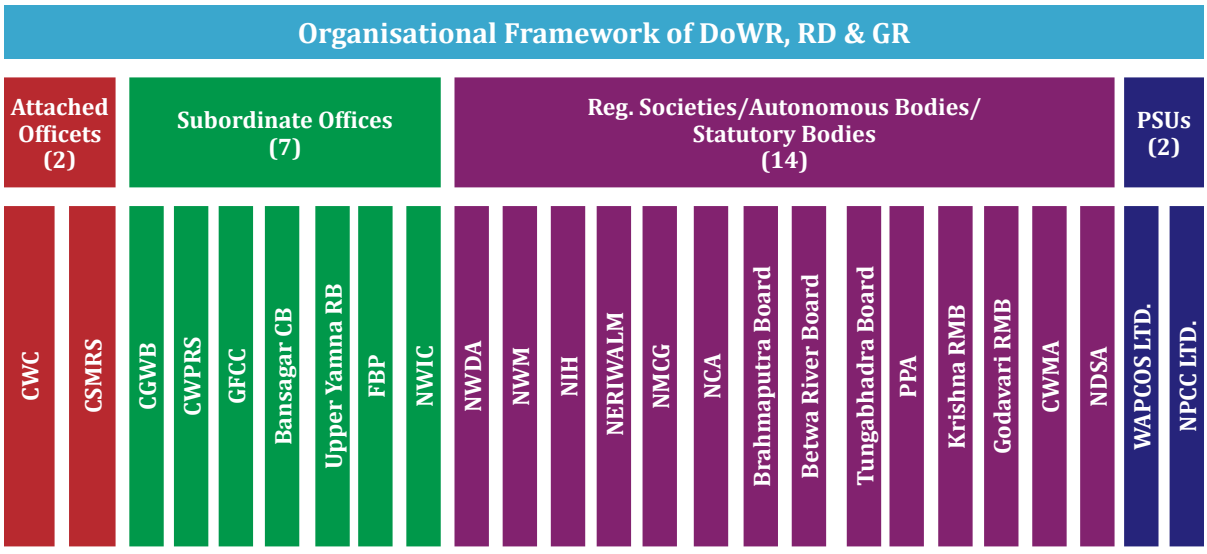
Water is essential for sustenance of life. It is a limited resource. Water resources of the country are required to be harnessed judiciously to meet the growing requirement of our developing economy. Therefore, development, conservation and management of water resources are crucial.

The Department of Water Resources, River Development and Ganga Rejuvenation (DoWR, RD & GR), Ministry of Jal Shakti is mainly responsible for laying down policy guidelines and programmes for the development, conservation and management of water as a national resource. It is also responsible for an overall national perspective of water planning and coordination in relation to diverse uses of water; water laws and legislations; addressing inter-State and trans-boundary water issues; bilateral and multi-lateral cooperation; and general policy guidelines and programmes for assessment, development and regulation of the country's water resources. DoWR, RD& GR is also responsible for water quality assessment; rejuvenation of river Ganga and its tributaries and also conservation and abatement of pollution in other rivers.

The Department is also allocated the subjects pertaining to regulation and development of inter-State rivers; implementation of awards of Tribunals; technical guidance, scrutiny, clearance and monitoring of the irrigation, flood control and multi-purpose projects; ground water management; flood proofing; water logging; sea erosion and dam safety.

The Department performs its functions with the support of its following specialized agencies:

- **Two attached offices:** Central Water Commission and Central Soil & Materials Research Station;
- **Seven sub-ordinate offices:** Central Ground Water Board, Central Water and Power Research Station, Ganga Flood Control Commission, Bansagar Control Board, Upper Yamuna River Board, Farakka Barrage Project and National Water Informatics Centre;
- **Fourteen Registered Societies, Autonomous Bodies or Statutory Bodies:** National Water Development Agency, National Water Mission, National Institute of Hydrology, North Eastern Regional Institute of Water and Land Management, National Mission for Clean Ganga, Narmada Control Authority, Brahmaputra Board, Betwa River Board, Tungabhadra Board, Polavaram



Project Authority, Krishna River Management Board & Godavari River Management Board, Cauvery Water Management Authority and National Dam Safety Authority.

- **Two public sector enterprises:** Water and Power Consultancy Services Limited (WAPCOS) and National Projects Construction Corporation Limited (NPCC).

The Ministry of Jal Shakti headed by the Hon'ble Union Minister Shri Gajendra Singh Shekhawat, who assumed charge on 31st May, 2019. Shri Prahlad Singh Patel and Shri Bishweswar Tudu assumed charge of Hon'ble Ministers of State on 8th July, 2021. Shri Pankaj Kumar has taken charge as the Secretary of the Department on 27th January, 2021. The organization chart of the Department is given at ***Annexure-I***. The present staff strength of the Department (as on 31.12.2022) is given at ***Annexure-II***. The list of names and addresses of senior officers and heads of organizations under the Department is given at ***Annexure-III***.

There are 12 wings in the Department, viz; Administration, Brahmaputra & Barak, Command Area Development and Water Management, Economic Advisory, Flood Management, Finance, International Cooperation and Ground Water, Indus, Minor Irrigation Statistics, Ganga Rejuvenation, River Development & Public Policy and State Projects.

A summary of major events, workshops and conferences organized by the Department during the current year is given in the following boxes:

Box. 1: Seventh India Water Week (7th IWW) - 2022

The **'Seventh India Water Week-2022'** was held from 1st – 5th November, 2022 at India Expo Centre, Greater Noida, National Capital Region (NCR) of Delhi with the theme "Water Security for Sustainable Development with Equity".

The Hon'ble President of India, Smt. Droupadi Murmu inaugurated the 7th India Water Week on 01.11.2022 at the India Expo Centre in Greater Noida, Uttar Pradesh in august presence of Governor, Uttar Pradesh, Chief Minister, Uttar Pradesh, Union Minister of Jal Shakti and Ministers of States for Jal Shakti.

Plenary session was held on 01.11.2022 under the Chairmanship of Hon'ble Union Minister of Jal Shakti, Shri Gajendra Singh Shekhawat.

The 7th India Water Week-2022, culminated with the valedictory function on 05.11.2022 in the august presence of Hon'ble Vice President of India, Shri Jagdeep Dhankhar. Hon'ble Union Minister for Jal Shakti, Hon'ble Union Minister for Agriculture & Farmer's Welfare, Hon'ble Minister of State for Jal Shakti, Minister of Jal Shakti, Uttar Pradesh, Secretary, DoWR&GR, MoJS, Special Secretary, DoWR, RD & GR, MoJS, graced the occasion. Further details of the event are given at Chapter-7 (sub-heading 7.3.1).

Box. 2: 1st All India Annual State Ministers' Conference on Water Vision @ 2047

"1st All India Annual State Ministers' Conference on Water" with the theme "Water Vision@2047" was held on 05-06 January, 2023 at Bhopal to discuss the Water Vision@2047. This was the 1st ever Annual Conference which was attended by State Ministers of Water Resources/ Public Health Engineering Department/ Irrigation who made presentations on Hon'ble Prime Minister's Vision@2047 for Water, along with the partner Departments/ Ministries of the Central Government.

The Conference commenced with an e-address by Hon'ble Prime Minister of India. Hon'ble Minister of Jal Shakti and Hon'ble Minister of State for Jal Shakti & Food Processing Industries attended the Conference. Also, Hon'ble Chief Minister of Madhya Pradesh, Hon'ble Deputy Chief Minister of Maharashtra and 13 Hon'ble State Ministers of Water Resources/ Rural Development/ Public Health Engineering graced the Conference with their kind presence. Further details of the event are given at Chapter-7 (sub-heading 7.3.2).

Box. 3: National Workshop on Dam Safety Act, 2021 for Dam Safety Governance in India

Central Water Commisison organized a one-day National Workshop on Dam Safety Act, 2021 for Dam Safety Governance in India on 16th June, 2022 at Dr. Ambedkar International Centre, New Delhi. The workshop was aimed at sensitizing all stakeholders about the provisions of the Dam Safety Act, 2021 and to deliberate on dam safety governance in India.

The workshop was inaugurated by the Hon'ble Union Minister of Jal Shakti. The national workshop was attended by the Hon'ble Ministers of Jal Shakti, Hon'ble State Ministers for Jal Shakti, Union Govt. and Hon'ble Ministers from 11 States and 650 officials from various State Water Resources Departments, Energy & Power Departments, Central Govt. Organizations, CPSUs, Academic Institutes, World Bank, etc. Further details of the conference are given at Chapter-4 (sub-heading 4.2).

Box. 4: Third National Water Awards and launching of Jal Shakti Abhiyan: Catch the Rain campaign - 2022

The Hon'ble President of India, Shri Ram Nath Kovind, presented the third National Water Awards and launched the Jal Shakti Abhiyan: Catch the Rain campaign 2022 in New Delhi on 29th March, 2022.

The first National Water Award 2018 was launched by DoWR, RD & GR, setting in motion this exercise. The National Water Awards have provided a good opportunity to start-ups as well as leading organizations to engage and deliberate with senior policy-makers on how to adopt the best water resources management practices in India. 57 States, organizations, individuals, etc have received awards in 11 categories - Best State, Best District, Best Village Panchayat, Best Urban Local Body, Best Media (Print & Electronic), Best School, Best Institution/RWA/Religious organization for campus usage, Best Industry, Best NGO, Best Water User Association, and Best Industry for CSR Activity.

"Jal Shakti Abhiyan: Catch the Rain" (JSA:CTR) -2022 campaign, the third in the series of JSAs, was launched by Hon'ble President of India on 29th March, 2022. The scheme implementing in all districts (rural as well as urban areas) of the country for implementation from 29th March, 2022 to 30th November, 2022 - the pre-monsoon and monsoon period. Further details of the event are given at Chapter-3 (sub-heading 3.7) and at Chapter-7 (sub-heading 7.3.2).

1.2 MAJOR SCHEMES AND PROGRAMMES

Some of the activities and achievements of the Department under various schemes are summarized below (details are covered under Chapter-3 and Chapter-7).

PRADHAN MANTRI KRISHI SINCHAYEE YOJANA (PMKSY)

AIBP: PRIORITIZATION OF 99 PROJECTS:

- A large number of irrigation projects taken up under Accelerated Irrigation Benefits Programme (AIBP) after its launch in 1996-97 were languishing due to inadequate provision of funds. Consequently, large amount of funds spent on these projects were locked up and the benefits envisaged could not be achieved.
- A committee under the Chairmanship of Hon'ble Minister (WR), Chhattisgarh was constituted vide MoWR, RD & GR order dated 02.03.2016 to look into the issues related to implementation of PMKSY. The committee in consultation with States identified ninety nine (99) ongoing irrigation projects under AIBP for completion in phases up to December, 2019.
- *Pari-passu* implementation of command area development works in the Commands of these projects is envisaged to ensure that the irrigation potential created may be utilized by the farmers.
- The arrangement of funds for Central Assistance (CA) was made through NABARD under Long Term Irrigation Fund (LTIF) as per year-wise requirements which would be paid back in 15 years' time. Further, the State Governments, if required, may also borrow funds from NABARD for the State share.
- In January, 2020, Ministry of Finance conveyed the continuation of ongoing centrally sponsored scheme up to 31.03.2021.
- The progress of the projects in physical as well as financial terms is monitored through the field units of Central Water Commission. In addition, third party monitoring of these projects is also being done through PMU. NABARD is also carrying out monitoring visits as per their norms.
- Social audit in 10% of the projects in each State after completion is contemplated.
- AGIS based portal for monitoring the progress of the projects, a mobile application has been developed for geo-tagging the project components under PMKSY-AIBP.

COMMAND AREA DEVELOPMENT AND WATER MANAGEMENT (CAD&WM)

Programme Components

The activities covered under CAD&WM component of a Project are broadly categorized as 'Structural' and 'Non-Structural' interventions, as detailed below:

(a) Structural Intervention: includes survey, planning, design and execution of:

(i) On-Farm Development (OFD) works;

(ii) Construction of field, intermediate & link drains;

During 12th Plan period, a Culturable Command Area (CCA) of 7.6 million ha was been targeted with central assistance amount of Rs. 15,000 crore which was subsequently reduced to 3.6 million ha during mid-term appraisal. From 2015-16, the programme came under HKPP component of PMKSY with a target of 1.5 million ha. Subsequently, from 2016-17 onwards, the role of programme has been restricted to 99 prioritised AIBP projects, under which the target was 4.5 million hectare. Against this, the achievement till March, 2022 has been reported to be about 1.6 million hectare, with release of central assistance of Rs. 2,855.63 crore during this period.

Participatory Irrigation Management (PIM)

National Water Policy stresses participatory approach in water resources management. It has been recognized that participation of beneficiaries will help greatly in the optimal upkeep of irrigation system and effective utilization of irrigation water. The participation of farmers in the management of irrigation would include transfer responsibility for operation & maintenance and also collection of water charges to the water users association (WUA) in their respective jurisdiction. One time functional grant @ Rs.1,200/- per hectare, to be shared by the Centre, State as well as farmers in the ratio of 45:45:10 respectively, is being paid to outlet level water users associations as incentive, the interest from which is to be used for maintenance. Apart from this, an amount of Rs. 3.00 lakh (60%- Central: 40% - State) is being provided to each WUA as one time infrastructure grant.

IMPLEMENTATION OF PMKSY- AIBP (INCLUDING CADWM) DURING 2021-26

- PMKSY-AIBP including CAD&WM has been approved for implementation with an outlay of Rs. 23,918 crore (central assistance) during 2021-26 for completion of 60 ongoing AIBP and 85 ongoing CAD&WM projects, along with financial assistance of new major and medium irrigation projects. Funding of National Projects, including Renuka and Lakhwar Projects, is also approved.
- 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), 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 Modernisation (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.

Central Assistance of Rs. 18,332.09 crore (AIBP: Rs. 15,451.18 crore; CADWM: Rs. 2,880.91 crore) has been provided for these projects from 2016-17 to 2022- 23 (upto 31.12.2022), out of which Rs. 167.77 crore (AIBP: Rs. 142.49 crore; CADWM: Rs. 25.28 crore) has been provided during the year 2022-23 (upto 31.12.2022).

HAR KHET KO PAANI: SURFACE MINOR IRRIGATION (SMI) SCHEMES AND REPAIR, RENOVATION & RESTORATION (RRR) OF WATER BODIES

Under the SMI scheme, since 12th Plan onwards, 6,213 schemes are ongoing with an estimated cost of Rs. 13,473 crore. Under the RRR of Water Bodies scheme, since 12th Plan onwards, 2,333 schemes are ongoing with an estimated cost of Rs. 1,981 crore. In the approval by Government of India for continuation of the scheme during 2021-22 to 2025-26, 4.5 lakh hectare of minor irrigation using surface water is targeted through SMI and RRR of water bodies. Cost norm of development of irrigated land under SMI has been revised from Rs. 2.5 lakh to Rs. 4 lakh per hectare. Inclusion criteria for RRR of water bodies has been revised in terms of size from minimum 5 hectare to 2 hectare (1 hectare for north eastern and Himalayan States) for rural areas, and from 2-10 hectare in urban areas to 1 hectare (0.5 hectare for north eastern and Himalayan States). Funding pattern for RRR of water bodies component has also been enhanced from 25% to 60% for non-special category regions. The outlay for SMI & RRR of water bodies scheme for implementation during 2021-26 is Rs. 4,580 crore.

HAR KHET KO PAANI- GROUND WATER SCHEME (PMKSY-HKKP-GW)

PMKSY- Har Khet Ko Pani-Ground Water scheme envisages to provide irrigation facility for small and marginal farmers in areas having sufficient potential for future development of ground water.

During F.Y. 2022-23, an amount of Rs. 34.85 crore has been released (upto 31.12.2022) to the projects in the States of Gujarat and Uttar Pradesh towards Central Assistance and 2,547 wells have been constructed creating additional command area of 19,500 ha benefitting 9,707 small & marginal farmers.

MINOR IRRIGATION CENSUS & CENSUS OF WATER BODIES

"Rationalization of Minor Irrigation Statistics (RMIS)" was launched in 1987-88 with 100% central assistance to the States/ UTs. In 2017-18, the scheme was renamed as "Irrigation Census" and brought under the centrally sponsored umbrella scheme, "PMKSY and other schemes" to build up a comprehensive and reliable database in the Minor Irrigation (MI) sector for effective planning and policy making.

The continuation of the Irrigation Census scheme for a period of 5 years from 2021-22 to 2025-26 has been approved with a total outlay of Rs. 237 crore for conducting 7th MI Census and 2nd Census of water bodies after completion of 6th MI Census and 1st Census of water bodies.

SPECIAL PACKAGE FOR COMPLETION OF IRRIGATION PROJECTS TO ADDRESS AGRARIAN DISTRESS IN VIDARBHA AND MARATHWADA REGION AND DROUGHT PRONE AREAS OF REST OF MAHARASHTRA

The approval of the above scheme was given on 18.07.2018. The proposal aims to provide special package of Rs. 3,831.41 crore as central assistance to complete 83 SMI and 8 MMI (Major & Medium Irrigation) projects benefitting 12 districts of Vidarbha, Marathwada and drought prone areas of rest of Maharashtra.

NATIONAL MISSION FOR CLEAN GANGA (NMCG)

The NMCG was registered as a society on 12.08.2011 under the Societies Registration Act, 1860. It acted as the implementation arm of National Ganga River Basin Authority (NGRBA), which was constituted under the provisions of the Environment Protection Act (EPA), 1986. NGRBA has since been dissolved with effect from 07.10.2016, consequent to the constitution of National Council for Rejuvenation, Protection and Management of River Ganga (referred as National Ganga Council) vide notification no. S.O. 3187(E) dated 07.10.2016 under EPA, 1986. (Website: https://nmcg.nic.in/)

Government of India approved the Namami Gange Mission on 13th May 2015 as a comprehensive and integrated approach for Ganga river rejuvenation and its tributaries. For five years, a total of Rs. 20,000 crore was allocated for this project, which included fund allocation for on-going and new initiative to clean river Ganga and its tributaries. The first phase of the Namami Gange Mission (NGM) has ended in 2021 and has been further extended till March, 2026.

ATAL BHUJAL YOJANA (ATAL JAL)

Atal Bhujal Yojana (ATAL JAL) is being implemented since April, 2020 in 8,220 water stressed Gram Panchayats of 229 administrative blocks/Talukas in 80 districts of seven States, viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh for five years. The selected States account for about 37% of the total number of water-stressed (over-exploited, critical and semi-critical) blocks in India.

FLOOD FORECASTING

Central Water Commission (CWC) is providing flood forecasting service at 333 stations, of which 199 are level forecasting stations on major rivers and 134 are inflow forecasting stations on major dams/ barrages. Out of these, flood forecasting service at two stations has been started during 2022. It covers 20 major river systems in the country across 25 States and UTs.

FLOOD MANAGEMENT & BORDER AREAS PROGRAMME (FMBAP)

The States/UTs are provided promotional central financial assistance through Flood Management Programme (FMP) and River Management Activities & Works related to Border Areas (RMBA) schemes of Department, which have been merged into a single scheme titled FMBAP which is under implementation.

NATIONAL PROJECTS

Implementation of National Projects was approved in 2008 with central

assistance to projects which meet the following criteria:

- International project where usage of water in India is required by a treaty or where planning and early completion of the project is necessary in the interest of the country.
- Inter-State projects which are dragging on due to non-resolution in inter- State issues relating to sharing of costs, rehabilitation, aspects of power production, etc., including river inter-linking projects.

	Category	Central: State
A	Projects in North-Eastern and Hilly States	90:10
B	Projects in other States	60:40

Sixteen projects have been declared as national projects so far. These projects are: Gosikhurd Irrigation Project, Shahpurkandi Dam Project, Teesta Barrage Project, Saryu Nahar Pariyojna, Polavaram Irrigation Project, Lakhwar Multipurpose Project, Renuka Dam Project, Kishau Multipurpose Project, Ujh Multipurpose Project, Ken-Betwa Link Project, Kulsi Dam Project, Noa-Dihing Dam Project, Bursar Hydro Electric Project, Gyspa Hydro Electric Project, 2nd Ravi Vyas Link Project and Upper Siang Project. National projects are taken up for execution after the concerned States obtain techno-economic clearance, other statutory clearances and investment clearance.

NATIONAL HYDROLOGY PROJECT (NHP)

NHP with support from the World Bank, envisages establishing a system for timely and reliable water resources data acquisition, storage, collation and management. It has pan-India coverage with 48 Implementing Agencies (IAs) (including 9 from Central Government, 3 from River Basin Organisations, 2 from Union Territories and 34 from States). It will also provide tools and systems for informed decision making for water resources assessment, planning and management. The National Hydrology Project has been approved with an outlay of Rs. 3,679.77 crore as a Central Sector Scheme with 100% grant to State Governments and Central Implementing Agencies. The project has a duration of 8 years from 2016-17 to 2023-24.

DAM REHABILITATION AND IMPROVEMENT PROJECT (DRIP)

DRIP is an externally aided project with financial assistance from the World Bank, targeting rehabilitation of some of the selected dams of the country along with accompanying institutional strengthening component.

DRIP (Phase-I)

World Bank assisted Dam Rehabilitation and Improvement Project was initiated in April 2012, with an objective to improve safety and operational performance of selected dams along with institutional strengthening with system wide management approach. 223 dams located in seven States i.e. Kerala, Madhya Pradesh, Odisha, Tamil Nadu, Karnataka, Jharkhand and Uttarakhand were taken up for rehabilitation measures for improving safety and operational performances of these dams.

DRIP: (Phase-II & III)

Based on the success of DRIP Phase-I, Ministry of Jal Shakti initiated another

externally funded scheme, DRIP Phase-II and Phase-III. The scheme has provision for rehabilitation of 736 dams located in 19 States (Andhra Pradesh, Chhattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand, West Bengal) and 3 Central Agencies (Central Water Commission, Bhakra Beas Management Board and Damodar Valley Corporation). It is a State Sector Scheme having central component, with duration of 10 years, to be implemented in two Phases i.e. Phase-II and Phase-III, each of six years duration with an overlap of two years.

RESEARCH AND DEVELOPMENT

R&D activities under the scheme include basic and applied research, creation and up- gradation of research facilities and training of personnel implemented through the apex organizations of Department viz., CSMRS, CWPRS, NIH, and CWC and also research projects sponsored by the Department. Under the sponsored research projects, the Department provides financial assistance to IITs, universities, research organizations etc. for taking up research in water sector through three Indian National Committees (INCs) constituted by the Department and Standing Advisory Committee headed by Secretary (WR, RD & GR). The Indian National Committees (INCs) constituted by the Department are: Indian National Committee on Surface Water (INCSW), Indian National Committee on Groundwater (INCGW) and Indian National Committee on Climate Change (INCCC).

DEVELOPMENT OF WATER RESOURCES INFORMATION SYSTEM

DWRIS scheme is a continuing scheme of 12th five year plan, being implemented during 2021-22 to 2025-26 with outlay of Rs. 715 crore, for creation of reliable and sound database for policy formulation, planning and designing of water resources projects, timely dissemination of flood forecast, etc.

INTERLINKING OF RIVERS UNDER NPP

After concerted efforts taken by Ministry of Jal Shakti, a tripartite Memorandum of Agreement (MoA) for the implementation of Ken-Betwa link project was signed on 22.03.2021 amongst the Union of India, Government of Madhya Pradesh and Government of Uttar Pradesh in a virtual event in the presence of Hon'ble Prime Minister of India.

NATIONAL RIVER CONSERVATION PLAN

The National River Conservation Directorate is providing financial assistance to the State Governments for conservation of rivers under the Centrally Sponsored Schemes of 'National River Conservation Plan (NRCP)'.

INDUS WATERS TREATY, 1960

Under the Indus Waters Treaty, 1960, India and Pakistan each have created a permanent post of Commissioner for Indus Waters. Each Commissioner is the representative of his Government and serves as a regular channel of communication on all matters relating to implementation of the Treaty. The two Commissioners together form the Permanent Indus Commission (PIC).

1.3 ORGANIZATIONS AND INSTITUTIONS

ATTACHED OFFICES

CENTRAL WATER COMMISSION (CWC)

CWC with its headquarters at New Delhi is a premier technical organization in the field of water resources in the country since 1945. The Commission is entrusted with the general responsibility of initiating, coordinating and furthering, in consultation with the State Governments concerned, schemes for control, conservation and utilization of water resources throughout the country for the purpose of irrigation, flood control, drinking water supply and hydro-power development.

The Commission has three technical wings, namely:

- Design and Research Wing
- Water Planning and Projects Wing
- River Management Wing

(Website:www.cwc.gov.in)

CENTRAL SOIL AND MATERIALS RESEARCH STATION (CSMRS)

CSMRS, New Delhi was established in 1954. 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 and quality assurance of construction for various river valley projects. *(Website:http://csmrs.gov.in/)*

SUBORDINATE OFFICES

CENTRAL GROUND WATER BOARD (CGWB)

CGWB operates as a subordinate office of DoWR, RD & GR. CGWB is a multi-disciplinary scientific organization consisting of hydrogeologists, geophysicists, chemists, hydrologists, hydrometeorologists and engineers. CGWB has about 600 scientists, 150 engineers and 3,250 supporting staff (technical, administrative and ministerial). The Board is headed by the Chairman and has five Members who look after different regional offices and also perform other specified functions. CGWB also has five permanent members representing Central Water Commission, Ministry of Jal Shakti, Ministry of Environment, Forest & Climate Change and Oil and Natural Gas Commission (ONGC). *(Website:http://cgwb.gov.in)*

CENTRAL WATER AND POWER RESEARCH STATION (CWPRS)

CWPRS, Pune is an apex research and development institution in the field of hydraulics and allied research in the water and power sector. It has continued to serve the needs of the nation for more than 100 years through research and development for evolving safe and economical planning and design of water resources structures, river engineering, hydropower generation, and ports and waterways projects. CWPRS has offered its services to a number of projects in the neighboring countries

viz., Bangladesh, Bhutan, Afghanistan, Myanmar, Nepal, Singapore, etc., as well as countries in Middle East. *(Website: www.cwprs.gov.in)*

GANGA FLOOD CONTROL COMMISSION (GFCC)

GFCC was established in 1972 with its head quarter at Patna. The Commission is headed by a Chairman with two full time Members and other supporting officers and staff. The representatives of concerned Central Ministries and Departments as well as the Engineer-in-Chief / Chief Engineers of the Ganga basin States are part-time members/ permanent invites. The Commission provides technical guidance to the Ganga Basin States, namely, West Bengal, Bihar, Jharkhand, Uttar Pradesh, Uttarakhand, Chhattisgarh, Madhya Pradesh, Delhi, Haryana, Himachal Pradesh and Rajasthan on Flood Management. *(Website: www.gfcc.gov.in)*

BANSAGAR CONTROL BOAD (BCB)

BCB was set up vide Government of India, Ministry of Agriculture and Irrigation Resolution No.8/17/74-DW -II dated 30th January, 1976 as amended vide Resolution No.8/17/74-DW -II dated 28th March, 1978. This Resolution was in accordance with an agreement reached between the Governments of Madhya Pradesh, Uttar Pradesh and Bihar on 16.09.1973 for sharing the waters of river Sone and the cost of the Bansagar Dam. *(Website: www.bcb.nic.in)*

UPPER YAMUNA RIVER BOARD (UYRB)

UYRB is a subordinate office under the DoWR, RD & GR. A memorandum of Understanding (MoU) was signed by the Chief Ministers of Himachal Pradesh, Haryana, Uttar Pradesh, Rajasthan, and National Capital Territory of Delhi on 12th May, 1994 regarding allocation of utilizable surface flow of river Yamuna upto Okhla Barrage (Upper Yamuna) among the co-basin States. In order to implement the said MoU, Upper Yamuna River Board (UYRB) was constituted by Resolution No. 10(66) / 71-IT dated 11th March 1995 of MoWR, RD & GR, Govt. of India in accordance with the provision of the MoU. After the creation of Uttaranchal State in 2000, the resolution was modified to include Uttaranchal (now Uttarakhand) also in the Board in 2001. *(Website: www.uyrb.gov.in)*

FARAKKA BARRAGE PROJECT (FBP)

FBP was commissioned in 1975 for preservation and maintenance of the Shyama Prasad Mookerjee Port (erstwhile Kolkata Port) and for increasing then navigational depth of the Bhagirathi - Hooghly waterway. The Farakka Barrage Project also facilitates sharing of Ganga waters between Bangladesh and Govt. of India as per Treaty between the Governments of Bangladesh and India on sharing of the Ganga waters at Farakka signed in 1996. *(Website: www.fbp.gov.in)*

NATIONAL WATER INFORMATICS CENTRE (NWIC)

NWIC was setup in March, 2018 as a subordinate office of the Department. The Centre is mandated to be central repository of nation-wide water resources data and to provide a '*single window*' source of updated data on water resources and allied themes.

NWIC is presently maintaining two platforms as per details given below:

(i) **Water Information Management System (WIMS):** This is a centralised data aggregating platform for collection of regular time-series data for ground water and surface water resources through telemetry sensors and through web-based input facility from different data points spread across the country. Different central and State agencies are sharing their time series data on rainfall, river level, discharge, reservoir level, ground water level, surface and ground water quality etc. on the platform.

(ii) **Water Resources Information System (India-WRIS):** This is a GIS enabled public platform (accessible through URL: indiawris.gov.in) for display and dissemination of water resources information. The time-series data received through WIMS along with data on other hydro-meteorological parameters and allied themes is displayed through maps and dashboard on a GIS framework over the portal for ease of understanding of users. *(Website: https://nwic.gov.in/)*

REGISTERED SOCIETIES / AUTONOMOUS BODIES / STATUTORY BODIES

NATIONAL WATER DEVELOPMENT AGENCY (NWDA)

NWDA was set up in July 1982 as a Society under Societies Registration Act, 1860 under the then Ministry of Irrigation (now Ministry of Jal Shakti) to study the feasibility of the links under peninsular component of National Perspective Plan. NWDA is fully funded by Government of India. The functions of NWDA have been modified from time to time. *(Website: www.nwda. gov.in)*

NATIONAL WATER MISSION (NWM)

NWM was set up as per the National Action Plan on Climate Change (NAPCC) approved by the Government of India and released by the Hon'ble Prime Minister on 30th June 2008. NAPCC laid down the principles and identified the approach to be adopted to meet the challenges of impact of climate change through institutionalization of 8 national missions, one of which was the 'National Water Mission'. The main objective of NWM is "conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management". *(Website: www.nwm.gov.in)*

NATIONAL INSTITUTE OF HYDROLOGY (NIH)

NIH, a Govt. of India Society under DoWR, RD & GR established in December 1978 at Roorkee, is conducting basic, applied and strategic research in the fields of hydrology and water resources development. The Institute is fully aided by the MoJS, Govt. of India. The objectives of the Institute are:

- To undertake, aid, promote and coordinate systematic and scientific work on all aspects of hydrology,
- To cooperate and collaborate with other national and international organizations in the field of hydrology,
- To establish and maintain a research and reference library in pursuance of the objectives of the society and equip the same with books, reviews, magazines and other relevant publications,

- To carry out activities that the Society may consider necessary, incidental or conducive to the attainment of the objectives for which the Institute has been established.

(Website: www. nihroorkee.gov.in)

NORTH EASTERN REGIONAL INSTITUTE OF WATER AND LAND MANAGEMENT (NERIWALM)

NERIWALM is a registered Society under the administrative control of the DoWR, RD & GR. This is the only Water and Land Management Institute (WALMI) established and administered by Government of India and is serving eight States of the North East India. It imparts trainings to enhance knowledge, skill and capacity of in-service personnel working in the Departments of Water Resources/ Irrigation, Soil Conservation, Agriculture & Horticulture, Rural Development, etc. including Water Users' Associations (WUAs) and farmers in the NE region of India. Customized mid-term training programmes are also conducted on self-financed mode for BE/B.Tech/M.Tech/ Graduates/Post Graduate students as requested by colleges/universities for the fulfillment of their prescribe degree course. The institute develops human resources in water and land management through academic course in M.Tech in water resource management. The services of the institute are extended to State Governments and other organisations in water and land management by conducting R&D activities in the field of irrigation and agriculture. *(Website: www.neriwalm.gov.in)*

NATIONAL MISSION FOR CLEAN GANGA (NMCG)

NMCG was registered as a society on 12.08.2011 under the Societies Registration Act, 1860. It acted as the implementation arm of National Ganga River Basin Authority (NGRBA), which was constituted under the provisions of the Environment Protection Act (EPA), 1986. NGRBA has since been dissolved with effect from 07.10.2016, consequent to the constitution of National Council for Rejuvenation, Protection and Management of River Ganga (referred as National Ganga Council) vide notification no. S.O. 3187(E) dated 07.10.2016 under EPA, 1986. Government of India approved the Namami Gange Mission on 13th May, 2015 as a comprehensive and integrated approach for Ganga river rejuvenation and its tributaries. For five years, a total of Rs. 20,000 crore was allocated for this project, which included fund allocation for on-going and new initiative to clean river Ganga and its tributaries. The first phase of the Namami Gange Mission (NGM) ended in 2021. NGM has been further extended till March 2026. *(Website: https://nmcg.nic.in/)*

NARMADA CONTROL AUTHORITY (NCA)

NCA and Review Committee were constituted in 1980 for proper implementation of the decisions and directions of the Narmada Water Disputes Tribunal vested with powers for implementation of the orders of the Tribunal with respect to the storage, apportionment, regulation and control of the Narmada water, sharing of power benefits from Sardar Sarovar Project

(SSP), regulated release of water by Madhya Pradesh, acquisition of land likely to be submerged under the Sardar Sarovar Project by the concerned States, compensation, resettlement/ rehabilitation of the oustees, sharing of costs and implementation of the environmental safeguard measures. *(Website: www.nca.gov.in)*

BRAHMAPUTRA BOARD (BB)

BB was constituted by an Act of Parliament and received the assent of the President on 01.09.1980 for planning and integrated implementation of measures for the control of floods and bank erosion in the Brahmaputra valley and for matters connected therewith.

A High Powered Review Board to oversee the work of the Brahmaputra Board was constituted with the Union Minister of Jal Shakti as the Chairman, Chief Ministers of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Union Minister / Ministers of State - Finance, Surface Transport, Power, Agriculture, Ministers of State of Jal Shakti and Secretary to the Ministry of Jal Shakti, DoWR, RD&GR, Chairman of Central Water Commission as Members and Chairman of Brahmaputra Board as the Member-Secretary. Member (RM), CWC is a permanent invitee. *(Website: www.brahmaputraboard.gov.in)*

BETWA RIVER BOARD (BRB)

BRB was constituted in 1976 by an Act of Parliament to execute the Rajghat Dam Project and Power House. The project authority started construction of the project under the overall guidance of Betwa River Board after promulgation of Betwa River Board Act 1976. The benefits and cost of the above projects are being shared equally by both the State Governments of UP and Madhya Pradesh. *(Website: www.brb.nic.in)*

TUNGABHADRA BOARD (TB)

TB was constituted by the President of India in exercise of the powers vested under sub section (4), section 66 of Andhra State Act, 1953 for completion of the Tungabhadra Project and for its operation and maintenance. The Board consists of a Chairman, appointed by the Government of India, and four Members, one each representing the States of Andhra Pradesh, Telangana, Karnataka and Government of India. Board exercises powers of a State Government under various codes, manuals, rules and regulations while discharging the functions on administrative matters of the project. (Website:http://tbboard.gov.in).

POLAVARAM PROJECT AUTHORITY (PPA)

Polavaram Irrigation Project (PIP) is a multi-purpose irrigation project on the river Godavari near Ramayyapeta village of Polavaram mandal in West Godavari District of Andhra Pradesh for construction of a dam to create ultimate irrigation potential. The project also envisages generation of 960 MW of hydro power, drinking water supply to 28.50 lakh population, diversion of 80 TMC of water to Krishna river basin. The project has been declared as a National Project as per section 90 of Andhra Pradesh Reorganization Act, 2014. *(Website: https:// ppa.gov.in)*

APEX COUNCIL AND KRISHNA & GODAVARI RIVER MANAGEMENT BOARDS

In exercise of the powers conferred by sub-section (1) of section 84 of the Andhra Pradesh Reorganisation Act, 2014 (APRA 6 of 2014), the Central Government constituted the Apex Council for supervision of the functioning of the Godavari River Management Board (GRMB) and Krishna River Management Board (KRMB) vide Gazette Notification dated 29th May, 2014. The 2nd Meeting of the Apex Council was held through video conferencing on 06.10.2020 under the chairmanship of Hon'ble Minister, MoJS in which inter alia, it was decided that jurisdiction of GRMB and KRMB shall be notified by Government of India.

The jurisdiction of GRMB and KRMB has been notified by Central Government vide Notification S.O. No. 2843 (E) dated 15.07.2021 for administration, regulation, maintenance and operation of specified projects / components in Telangana and Andhra Pradesh. The provisions of notification have become effective from 14th October, 2021. *(Website: https:// krmb.gov.in and https://grmb.gov.in/)*

CAUVERY WATER MANAGEMENT AUTHORITY (CWMA)

The Central Government in exercise of the powers conferred by section 4 of the Inter-State River Water Disputes Act, 1956 (33 of 1956) constituted the Cauvery Water Disputes Tribunal vide Notification Number S.O. 437 (E), Dated the 2nd June, 1990 to adjudicate upon the water disputes regarding the inter-State river Cauvery and the river valley thereof, among the States of Karnataka, Kerala, Tamil Nadu and Union Territory of Puducherry.

The Cauvery Water Disputes Tribunal submitted its reports and decision under section 5(2) of Inter-State River Water Disputes Act, 1956 to Government on 5th February, 2007. The decision of CWDT was published by the Central Govt. vide Gazette Notification dated 19.2.2013. Supreme Court in its judgement dated 16.02.2018, slightly modified CWDT Order. Hon'ble Supreme Court also directed Central Government to formulate a 'scheme' to implement the CWDT's Order as modified by it. Thereafter, in exercise of the powers conferred by section 6A of the said Act, the Central Government notified the Cauvery Water Management Scheme on 01st June, 2018, inter alia, constituting the 'Cauvery Water Management Authority' (CWMA) and the 'Cauvery Water Regulation Committee' (CWRC) to give effect to the decision of the Cauvery Water Disputes Tribunal as modified by the Hon'ble Supreme Court on 16.02.2018.

NATIONAL DAM SAFETY AUTHORITY (NDSA)

Ministry of Jal Shakti vide OM dated 25.04.2022 established the NDSA on the additional charge basis under the chairmanship of Member (D&R), CWC assisted by the 5 Members i.e. Member (Technical), Member (Policy and Research), Member (Regulation), Member (Disaster and Resilience) and Member (Administration and Finance). Post of Members of NDSA is also being held by the officers of CWC and DoWR, RD & GR on additional charge basis. To support the NDSA, 4 regional offices (North, East & North East, West and South) headed by Director, CWC on additional charge basis have been also established.

NDSA shall implement the policy, guidelines and standards evolved by the NCDS for proper surveillance, inspection and maintenance of specified dams. Ministry of Jal Shakti, vide Gazette notifications S.O. 758(E) and G.S.R. 135(E) dated 17.02.2022 established NDSA and Functions & Power Rules 2022, respectively.

PUBLIC SECTOR ENTERPRISES

WATER AND POWER CONSULTANCY SERVICES LIMITED (WAPCOS)

WAPCOS Limited is a "MINIRATNA-I" Public Sector Enterprise under the aegis of the DoWR, RD & GR incorporated on June 26, 1969 under the Companies Act, 1956. WAPCOS is engaged in the engineering consultancy services and construction in the fields of water, power and infrastructure sectors in India and overseas. WAPCOS is providing engineering consultancy services to various clients since its incorporation in over 50 countries particularly in South Asia and across Africa. WAPCOS has the requisite experience and expertise to undertake consultancy & EPC projects of any scale and complexity in the sectors of its operations. WAPCOS portfolio of projects is diverse in nature. The Company has implemented a comprehensive quality management system in compliance with the requirements of both ISO 9001:2015 for consultancy services in water resources, power and infrastructure development projects as well as ISO 9001:2015 for engineering, procurement and construction projects related to residential, office buildings, civil works, roads and highways, irrigation, agriculture and water projects, electrical power projects for generation, substation, transmission, distribution networks, rural electrification and renewable energy, industrial, IT, telecommunications and related projects. *(Website: http://www.wapcos.gov.in/)*

NATIONAL PROJECTS CONSTRUCTION CORPORATION LIMITED (NPCC)

NPCC is a "Mini Ratna-I" Central Public Sector Enterprise under the aegis of DoWR, RD & GR was incorporated on 9th January, 1957 under the Companies Act, 1956 as a premier construction company to create the necessary infrastructure for economic development of the Country. WAPCOS acquired 98.89% shareholding of National Projects Construction Corporation Limited (NPCC) as a result of which the Company has become subsidiary of WAPCOS. It is engaged in engineering, construction, planning, operation & project management consultancy. The organization operates in industrial infrastructure, thermal, hydro power projects, tunneling & underground projects, railways, highways, surface transport projects, townships & other residential buildings, institutional buildings, office & sports complexes, bridges & flyovers, dams, weirs, barrages, border road & fencing, hospitals & health sector projects, environmental engineering, flood lighting works etc. *(Website:https://npcc.gov.in/)*

Smt. Droupadi Murmu, Hon'ble President of India is welcomed by Shri Gajendra Singh Shekhawat, Hon'ble Union Minister of Jal Shakti during Inauguration of 7th India Water Week (1st to 5th November, 2022) at Greater NOIDA, Uttar Pradesh.

2 WATER RESOURCES SCENARIO

Shri Jagdeep Dhankhar, Hon'ble Vice President of India is greeted by Shri Gajendra Singh Shekhawat, Hon'ble Union Minister of Jal Shakti during Valedictory funtion of 7th India Water Week (1st to 5th November, 2022) at Greater NOIDA, Uttar Pradesh.

2. WATER RESOURCES SCENARIO

2.1 WATER AVAILABILITY

The average annual water availability of any region or country is largely dependent upon hydro-meteorological and geological factors. As per the "Reassessment of water availability in basins using space inputs" report, the total water availability of India received through precipitation is about 3,880 Billion Cubic Meter (BCM) per annum. After evaporation, 1,999.20 BCM water is available as natural runoff. Due to geological and other factors, the utilizable water availability is limited to 1,128 BCM per annum comprising 690 BCM of surface water and 438 BCM of replenishable ground water. Out of this, the water potential utilized is around 689 BCM, comprising 450 BCM of surface water and 239 BCM of groundwater. Total requirement of the country for different uses for high demand scenario for the years 2025 and 2050 has been assessed as 843 BCM and 1,180 BCM, respectively.

Water availability per person is dependent on population of the country. Per capita water availability in the country is reducing progressively. The average annual per capita water availability in the years 2001 and 2011 was assessed as 1,816 cubic meters and 1,545 cubic meters respectively which may further reduce due to increase in population. Annual per-capita water availability of less than 1,700 cubic meters is considered as water stressed condition, whereas annual per-capita water availability below 1,000 cubic meters is considered as a water scarcity condition.

2.2 CONSTITUTIONAL PROVISIONS FOR MANAGEMENT OF WATER RESOURCES

Water is a subject matter included in Entry 17 of List II (State List), subject to the provisions of Entry 56 of List I (Union List) under the Seventh Schedule of the Constitution. Entry 17 of List II of the Seventh Schedule provides that "Water, that is to say, water supplies, Irrigation and canals, drainage and embankments, waters to rage and water power subject to the provisions of Entry 56 of List I."

Entry 56 of List I (Union List) of Seventh Schedule provides that "Regulation and development of inter-State rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest." As such, the Union Government is conferred with powers to regulate and develop Inter-State rivers under Entry 56 of List I of the Seventh Schedule to the extent declared by the

Parliament by law to be expedient in the public interest. The Union Government also has the power to make laws for the adjudication of disputes relating to waters of Inter-State River or river valleys under Article 262 of the Constitution.

2.3 NATIONAL WATER POLICY

Central Government formulated the National Water Policy in 1987, which was subsequently reviewed and revised in the year 2002 and 2012. The main objective of the National Water Policy is to take cognizance of the existing situation in water sector, to propose a framework for creation of a system of laws and institutions and a plan of action with a unified national perspective in planning, management and use of water resources.

At present the National Water Policy - 2012 is in effect. However, to address the present challenges in water sector, revision of National Water Policy has been envisaged and a drafting committee was constituted to revise the National Water Policy, which has submitted its report.

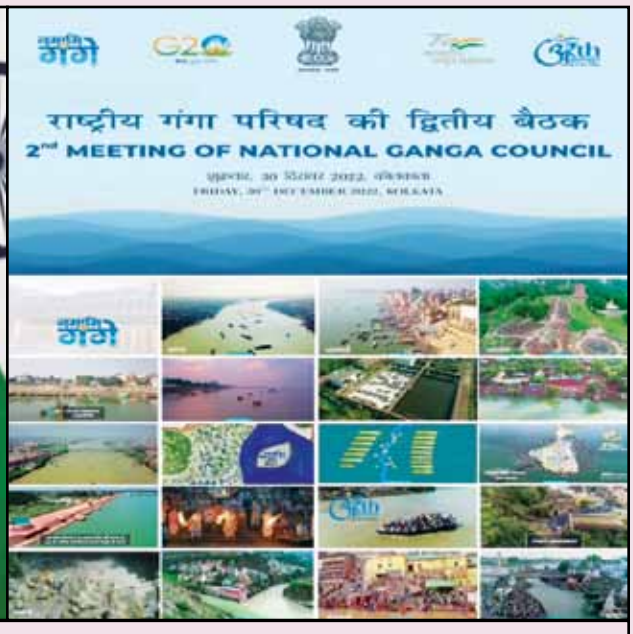
2.4 DRAFT NATIONAL WATER FRAMEWORK BILL

The National Water Policy (2012), inter alia, recommends formulation of National Water Framework Law, which would be a broad overarching national legal framework of general principles of water to lead the way for essential legislation on water governance in every State of the Union and devolution of necessary authority to the lower tiers of the Government to deal with local water situation.

The draft Bill was circulated to States / UTs and the concerned Central Ministries for obtaining their comments. Comments on the draft bill have been received from 11 States viz., Rajasthan, Tamil Nadu, Madhya Pradesh, Kerala, Karnataka, Odisha, Gujarat, Uttar Pradesh, Maharashtra, Bihar and Jharkhand whereas, interim response have been received from 5 States / UTs viz., Uttarakhand, Punjab, Arunachal Pradesh, NCT of Delhi and Lakshadweep.

2.5 NATIONAL FRAMEWORK FOR SEDIMENT MANAGEMENT

DoWR, RD & GR 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.



Shri Narendra Modi, Hon'ble Prime Minister virtually joined 2nd Meeting of National Ganga Council on 30.12.2022 at Kolkata

3 MAJOR SCHEMES & PROGRAMMES

1st All India Annual State Ministers' Conference on Water with the theme "Water Vision@2047" was held on 5th - 6th January, 2023 at Bhopal

3. MAJOR SCHEMES & PROGRAMMES

3.1 PRADHAN MANTRI KRISHI SINCHAYEE YOJANA (PMKSY)

PMKSY was launched during 2015-16 by the Central Government with an overarching vision to ensure access to some means of protective irrigation for all agricultural farms in the country, thus bringing much desired rural prosperity. Some of the broad objectives of the approved programme areas under:-

- Achieve convergence of investments in irrigation at the field level(preparation of district level and, if required, sub district level water use plans);
- Enhance the physical access of water on the farm and expand cultivable area under assured irrigation *(Har Khet Ko Paani);*
- Promote integration of water source, distribution and its efficient use, to make best use of water through appropriate technologies and practices;
- Improve on-farm water use efficiency to reduce wastage and increase availability both in duration and extent; irrigation and other water saving technologies *(per drop more crop);*
- Introduce sustainable water conservation practices;
- Ensure the integrated development of rain-fed areas using the waters held approach towards soil and water conservation, regeneration of ground water, arresting run-off, providing livelihood options and other NRM activities;
- Promote extension activities relating to water harvesting, water management and crop alignment for farmers and grass-root level field functionaries.

PMKSY components:

PMKSY is having following components of this Department viz., Accelerated Irrigation Benefits Programme (AIBP), Command Area Development & Water Management (CADWM) and Har Khet Ko Paani (HKKP) - Surface Minor Irrigation (SMI) & Repair, Renovation and Restoration (RRR) of water bodies.

PRIORITIZATION OF AIBP PROJECTS DURING 2016-17:

One of the major reasons for the delay in completion of projects under AIBP was inadequate provision of Central and State share funds. As a result, large amount of funds spent on these projects were locked up and the benefits envisaged at the time of formulation of the projects could not be achieved. This was a cause for concern and initiative was required at

the national level to remedy the situation. A Committee headed by Minister (Water Resources) of Chhattisgarh was constituted during 2016-17. The issues related to implementation of projects under PMKSY, including prioritization of projects, were deliberated in the Committee. Based on the information supplied by concerned States to the Committee, 99 projects were identified by the Committee for completion by 2019.

Innovation/initiatives under the scheme:

- The arrangement of funds for central assistance (CA) was made through NABARD as per year-wise requirements which would be paid back in 15 years' time. Further, the State Governments, if required, could also borrow funds from NABARD for the State share.
- In respect of the State share availed by States from NABARD, interest subvention is provided by the Central Government so that overall interest rate for State share comes to about 6%, in order to make it attractive for the States and encourage them to raise requisite State share for early completion of projects.
- The progress of the projects in physical as well as financial terms is monitored through the field units of Central Water Commission. Further, one nodal officer for each of the 99 priority projects has been identified who would be updating the physical and financial progress of the project regularly in the MIS developed for this purpose.
- Monitoring through MIS system and third party is being carried out.
- The use of pressurized pipe irrigation and micro irrigation wherever feasible is being promoted to increase efficiency. In Odisha and Maharashtra, land acquisition of 6,200 ha and 4,920 ha respectively has been avoided in distribution system by adopting underground Piped Distribution Network (PDN) with estimated cost saving of Rs.1,500 crore. Other States are also being sensitized for adopting the same approach.
- *Pari-Passu* implementation of command area development works in the commands of these projects is 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.

Completion of projects

- Out of 99 prioritized projects, AIBP works of 50 projects have been reported to be completed/almost completed by the concerned State Governments. The details are at ***Annexure–IV***.
- The details of central assistance and State share released during 2016-17 to 2022-23 (upto 31.12.2022) for AIBP works of 99 priority projects under PMKSY are given at ***Annexure-V***.

IMPLEMENTATION OF PMKSY-AIBP (INCLUDING CADWM) DURING 2021-26:

- PMKSY-AIBP including CAD&WM has been approved for implementation during 2021-26 with an outlay of Rs. 23,918 crore (central assistance), for completion of 60 ongoing AIBP and 85 ongoing CAD&WM projects, along with financial assistance for new major and medium irrigation projects. Funding of National Projects, including Renuka and Lakhwar Projects, is also approved.
- 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), 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 Modernisation (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.
- So far, 6 new MMI and 2 new National projects have been included under PMKSY AIBP.

COMMAND AREA DEVELOPMENT & WATER MANAGEMENT

Programme Components:

The activities covered under CAD&WM component of a project are broadly categorized as 'structural' and 'non-structural' interventions, as detailed below:

(a) **Structural Intervention:** includes survey, planning, design and execution of:

  (i) On-Farm Development (OFD) works;

  (ii) Construction of field, intermediate & link drains;

  (iii) Correction of system deficiencies; and

  (iv) Reclamation of waterlogged areas.

(b) **Non-Structural Intervention:** includes activities directed at strengthening of Participatory Irrigation Management (PIM):

  (i) One time Functional Grant to the registered Water Users Associations (WUAs);

  (ii) One time Infrastructure Grant to the registered WUAs;

  (iii) Trainings, demonstration and adaptive trials for water use efficiency, increased productivity and sustainable irrigation participatory environment.

Further, to promote water use efficiency in irrigation, financial assistance

is provided to the States for development of infrastructure for micro-irrigation to facilitate use of sprinkler / drip irrigation as an alternative to construction of field channels. Under the scheme, at least 10% of Culturable Command Area (CCA) of each project is required to be covered under micro-irrigation. Micro-irrigation infrastructure includes components of sump, pump, HDPE pipelines, and pertinent devices needed for bringing efficiency in water conveyance and field applications (through sprinklers, rain guns, pivots etc). However, the devices such as sprinkler/ rain gun/ drip sets etc. needed to be installed by individual farmers below farm outlets, are not part of the micro-irrigation infrastructure.

Programme Implementation

The Detailed Project Report (DPR) of the CAD&WM component of prioritized Project prepared by the concerned State Government is submitted to CAD Cell of the pertinent Regional Office of CWC. CWC through its CAD Cell and the PMO appraises the DPR and forwards its recommendations to the CAD&WM Wing of the Ministry. CAD&WM Wing of Ministry processes the case for approval of competent level for inclusion of project under CAD&WM program.

All CAD works are planned, designed, tendered and executed by the State Governments. Central Water Commission (CWC) through its CAD Cells in the Regional Offices of CWC and the Project Monitoring Organization (PMO) at its headquarters, provides the overall monitoring and coordination support. Moreover, for monitoring of PMKSY-AIBP and CADWM projects, a Project Monitoring Unit (PMU) has been set-up. Project implementation is reviewed, coordinated and guided at half yearly intervals by the Project Implementation Review Committee (PIRC).

Funding Pattern

Funds under PMKSY for the CAD&WM component are provided to the State Governments as per cost sharing ratios (to be applied on the ceiling costs), as below:

S. No.	Activities Eligible for Funding	Cost Sharing Ratio
(a)	All activities of Structural interventions	50:50 (Centre : State)
(b)	All activities of Non-Structural interventions excluding Functional Grant to WUAs	60:40 (Centre : State)
(c)	Functional Grant to registered WUAs	45:45:10 (Centre: State: farmer)
(d)	Incremental Establishment Cost	50:50 (Centre : State)

For the eight North Eastern States and the three Himalayan States of Himachal Pradesh, Jammu & Kashmir, and Uttarakhand, the cost sharing norms for all activities of non-structural interventions except functional grant to water user associations, is prescribed as 75:25 (Centre : State) in lieu of 60:40 norm applicable for other States.

One of the key components of physical works under CAD&WM relates to construction of field channels. Since its inception in 1974-75 up to March, 2022, CCA of 23.210 million hectares has been covered and central assistance of Rs. 9,951.43 crore has been released to

States during this period. During 2016-17 to 2022-23 (upto 31.12.2022), central assistance of Rs. 2,880.91 crore has been provided for CAD&WM of the 99 prioritized projects. The details of central assistance and State Share released for these CADWM projects are given at ***Annexure-VI***.

Physical & Financial Progress

During 12th Plan period, a CCA of 7.6 million hectare was targeted with CA amount of Rs 15,000 crore which was subsequently reduced to 3.6 million ha during mid-term appraisal. From 2015-16, the programme came under HKKP component of PMKSY with a target of 1.5 million ha. Subsequently, from 2016-17 onwards, the role of programme has been restricted to 99 prioritised AIBP projects, under which the target was 4.5 million ha. Against this, the achievement till March, 2022 has been reported to be about 1.6 million ha, with release of central assistance of Rs. 2,855.63 crore during this period.

Participatory Irrigation Management (PIM)

National Water Policy emphasises participatory approach in water resources management. It has been recognized that participation of beneficiaries will help greatly in the optimal upkeep of irrigation system and effective utilization of irrigation water. The participation of farmers in the management of irrigation would include transfer responsibility for operation & maintenance and also collection of water charges to the water users' association (WUA) in their respective jurisdiction. One time functional grant @Rs.1,200/- per hectare, to be shared by the Centre, State as well as farmers in the ratio of 45:45:10 respectively, is being paid to outlet level water users' associations as incentive, the interest from which is to be used for maintenance. Apart from this, an amount of Rs. 3.00 lakh (60%- Central: 40% - State) is being provided to each WUA as one time infrastructure grant.

Recognizing the need for sound legal framework for PIM in the country, in 1998 a model act was circulated to be adopted by the States legislatures for enacting new irrigation Acts amending existing irrigation Acts. At present there are 18 States who have either enacted new Act or modified their existing Act to fulfil the objective of the PIM. As per information made available by the State Governments, about 93,000 WUAs, covering an area of 17.84 million hectare, have been formed in India.

Strengthening of PIM is being aimed as part of the CAD&WM program. Under CAD&WM for the 99 prioritized projects during 2016-22, 14,685 WUAs were targeted to be created under the ongoing 88 projects, out of which 9,272 WUAs have been formed, and about 2,900 WUAs the CAD assets have also been transferred to respective WUAs.

SURFACE MINOR IRRIGATION (SMI) SCHEMES

Under the SMI scheme, since12th Plan onwards, 6,213 schemes are ongoing with an estimated cost of Rs.13, 473 crore. CA of Rs.8, 017 crore has been released to States upto March, 2022. Further, 3,893 schemes have been completed upto March, 2022. Target irrigation potential creation of these schemes is 10.530 lakh ha and out of this, 6.930 lakh ha reported to have been created till March, 2022. In the current

financial year, Rs. 39.07 crore has been released to SMI schemes till 31st December, 2022.

REPAIR, RENOVATION & RESTORATION (RRR) OF WATER BODIES

Under the RRR of Water Bodies scheme, since 12th Plan onwards, 2,333 schemes are ongoing with an estimated cost of Rs.1,981 crore.CA of Rs. 495.73 crore has been released to States upto March, 2022. Further, 1,591 water bodies have been reported to be completed upto March, 2022. Target irrigation potential restoration of these schemes is 1.890 lakh ha and out of this, 1.320 lakh ha reported to be restored till March, 2022. In the current financial year, Rs. 11.85 crore has been released under RRR of Water Bodies schemes till 31st December, 2022.

HAR KHET KO PAANI-GROUND WATER SCHEME (PMKSY-HKKP-GW)

Pradhan Mantri Krishi Sinchayee Yojana- Har Khet Ko Paani-Ground Water scheme, launched by DoWR, RD & GR, envisages to provide irrigation facility for small and marginal farmers in areas having sufficient potential for future development of ground water.

The scheme provides financial assistance to States for assured ground water irrigation to small and marginal farmers with priority to SC/ST and women farmers. The funding pattern is in the ratio of 90:10 (C:S) in case of NE/Hilly areas and 60:40 (C:S) in case of other areas. The scheme is applicable only in areas having stage of ground water development less than 60%, average rainfall more than 750 mm rainfall and having shallow ground water levels (less than 15 m below ground level).

Since 2019, 15 projects amounting Rs. 1,719.55 crore have been approved for 12 States namely Assam, Arunachal Pradesh, Gujarat, Nagaland, Manipur, Mizoram, Tripura, Telangana, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal. Out of 15 approved projects, thirteen projects have been implemented in ten States. Against the target of 29,779 wells, 88,679 ha command area and 67,930 beneficiaries, 29,229 wells have been constructed, 77,242 ha command area has been created benefiting 66,600 small and marginal farmers by December 2022.

MINOR IRRIGATION (MI) CENSUS & CENSUS OF WATER BODIES

"Rationalization of Minor Irrigation Statistics (RMIS)" was launched in 1987-88 in the DoWR, RD & GR, MoJS, with 100% central assistance to the States/ UTs. In 2017-18, the scheme was renamed as "Irrigation Census" and brought under the centrally sponsored umbrella scheme, "PMKSY and other schemes" to build up a comprehensive and reliable database in the Minor Irrigation (MI) sector for effective planning and policy making.

MI censuses are a rich source of information on India's ground and surface water sector. In the MI censuses detailed information on various aspects/ parameters like irrigation sources (dug well, shallow, medium and deep tube well, surface flow and surface lift schemes), irrigation potential created, potential utilized, ownership, holding size of land by the owner, devices used for lifting water, source of energy, energy conserving devices such as sprinkler and drip irrigation, use of non-conventional energy

sources such as solar pumps, windmills etc. is collected.

Detailed database on minor irrigation works in the country has been generated through five censuses carried out under the scheme so far with reference years 1986-87, 1993-94, 2000-01, 2006-07 and 2013-14. A separate dashboard was created for easy dissemination of Fifth Minor Irrigation Census data.

The scope of Irrigation Census was expanded to include census of water bodies with 100% central assistance. The First Census of Water Bodies was launched to collect information on all important aspects on the subject including their size, condition, status of encroachments, use, storage capacity, status of filling up of storage etc. in the States/UTs in convergence with Sixth Minor Irrigation Census (with reference year 2017-18).

A Memorandum of Understanding (MoU) was signed by DoWR, RD & GR with National Informatics Centre (NIC) for development of mobile application and software for data entry and validation of 6th MI Census and first Census of Water Bodies. The provision for capturing the latitude, longitude and photograph of water bodies was also kept in the Census of Water Bodies. Presently, the 6th MI Census and first Census of Water Bodies are in advanced stage of completion. The reports of both the Censuses are likely to be published in the last quarter of 2022-23.

The continuation of the Irrigation Census scheme has been approved for a period of five years from 2021-22 to 2025-26 with a total outlay of Rs.237 crore for conducting 7th MI Census and 2nd Census of water bodies after completion of 6th MI Census and 1st Census of water bodies.

A Steering Committee has been constituted under the chairmanship of Secretary (DoWR, RD & GR) to guide and advice the conduct of 7th MI Census and 2nd Census of Water Bodies.

SPECIAL PACKAGE FOR COMPLETION OF IRRIGATION PROJECTS TO ADDRESS AGRARIAN DISTRESS IN VIDARBHA, MARATHWADA AND OTHER CHRONICALLY DROUGHT PRONE AREAS OF REST OF MAHARASHTRA

The approval of the above scheme was given on 18.07.2018 to provide special package of Rs.3,831.41 crore as Central Assistance (CA) to complete 83 SMI (Surface Minor Irrigation) and 8 MMI (Major & Medium Irrigation) projects benefitting 12 districts of Vidarbha, Marathwada and drought prone areas of rest of Maharashtra. Total estimated balance cost of these projects is Rs. 13,651.61 crore as on 01.04.2018. By completion of these schemes, an additional potential of 3.77 lakh ha would be created in above areas. CA of Rs. 1,935.76 crore has been provided to the projects under this package (Rs.500 crore during 2018-19, Rs.300 crore during 2019-20, Rs.400 crore during 2020-21, Rs. 725 crore during 2021-22, Rs. 10.76 crore during 2022-23 upto Dec., 2022).

Features of the Special Package

Under the Special Package, Central Government is to provide CA @ 25% of the balance cost of these 91 projects as on 01.04.2018 as well as 25% reimbursement for the expenditure incurred during 2017-18. State shares can be borrowed by the

State through NABARD within their FRBM limit, if required, for implementation of these 91 projects. The balance cost of the said projects as on 01.04.2018 is estimated to be Rs.13,651.61 crore.

Status of Projects

Under the Special Package, 28 SMI projects have been reported to be completed upto 31.12.2022 and 1,28,205 ha of irrigation potential has been created from 2018-19 onwards.

Central Assistance Released

S. No.	Financial Year	CA Released under Special Package to MH		
		CA	No. of Projects & CA Released (Amount of CA in Rs. crore)	
			SMI	MMI
1	2018-19	500	56 (Rs.170.57)	07(Rs.329.43)
2	2019-20	300	72 (Rs.166.69)	06 (Rs.133.31)
3	2020-21	400	53 (Rs.97.48)	06 (Rs.302.52)
4	2021-22	725	64 (Rs. 79.23)	08 (Rs. 645.76)
5	2022-23 (upto Dec. 2022)	10.76	0(0)	01 (Rs. 10.76)
	Total	**1,935.76**	**513.98**	**1,421.78**

NATIONAL PROJECTS

Implementation of National Projects was approved in 2008 with Central Assistance of 90% of project cost which meets the following criteria:

- International project where usage of water in India is required by a treaty or where planning and early completion of the project is necessary in the interest of the country.
- Inter-State projects which are dragging on due to non-resolution in inter-State issues relating to sharing of costs, rehabilitation, aspects of power production, etc. including river inter-linking projects.
- Intra-State projects with additional potential of more than 2 lakh hectare and with no dispute regarding sharing of water and where hydrology is established.
- Further, as per the modification in the guidelines of National Projects in September, 2012, Extension, Renovation and Modernization (ERM) projects, envisaging restoration of lost irrigation potential of 2.0 lakh hectare or more are eligible for inclusion as National Project with certain conditions.
- The funding pattern from October, 2015, as follows.

	Category	Central: State
A	Projects in North-Eastern and Hilly States	90:10
B	Projects in other States	60:40

Sixteen projects have been declared as national projects so far. These projects are taken up for execution after the concerned States obtain techno-economic clearance, other statutory clearances and investment clearance. These projects are: Gosikhurd Irrigation Project, Shahpurkandi Dam

Project, Teesta Barrage Project, Saryu Nahar Pariyojna, Polavaram Irrigation Project, Lakhwar Multipurpose Project, Renukaji Dam Project, Kishau Multipurpose Project, Ujh Multipurpose Project, Ken Betwa Link Project, Kulsi Dam Project, Noa-Dihing Dam Project, Bursar Hydro Electric Project, Gyspa Hydro Electric Project, 2nd Ravi Vyas Link Project and Upper Siang Project.

Out of these, seven projects, namely Polavaram project of Andhra Pradesh, Saryu Nahar Pariyojana of Uttar Pradesh, Gosikhurd Irrigation Project of Maharashtra,Teesta Barrage Project of West Bengal, Shahpurkandi Dam Project of Punjab, Lakhwar Multipurpose Project of Uttarakhand and Renukaji Dam Project of Himachal Pradesh have been taken up for execution. Gosikhurd, Saryu Nahar Pariyojna, Lakhwar and Renukaji are included under PMKSY.

Polavaram Irrigation Project:

Polavaram Irrigation Project (PIP) is a multi-purpose irrigation project which is on the river Godavari near Ramayyapeta village of Polavaram mandal, about 42 km upstream of Sir Arthur Cotton Barrage, where river emerges out of last range of the Eastern Ghats and enters the plains in West Godavari District of Andhra Pradesh State. It envisages construction of a dam to create ultimate irrigation potential. The project has been declared as a national project as per section 90 of Andhra Pradesh Reorganisation Act, 2014. Central Government is funding 100% of the remaining cost of the irrigation component only of the project for the period starting from 01.04.2014. Government of Andhra Pradesh is executing the irrigation component of the project on behalf of Government of India. The power component of the project is being executed by APGENCO.

Saryu National Project:

Saryu Nahar Pariyojana is one of the 99 priority projects under PMKSY (AIBP) implemented in three phases. Main diversion structure and link channels are completed. Component of the project under the scheme of National Projects are some of the balance canal works of Phase-II and Phase – III of the project which involve mainly construction of Rapti Main Canal and its complete distribution system.

The project as a whole, envisages irrigation potential of 14.04 lakh ha out of which 4.73 lakh ha is to be created under the scheme of National Projects. Total CA released to Saryu National Project is Rs 2,243.10 crore.

Gosikhurd National Project:

Gosikhurd Irrigation Project is one of the 99 priority projects under PMKSY (AIBP) and envisages construction of earth dam across river Wainganga in Bhandara district of Maharashtra. The project will provide irrigation benefits to 2,50,800 ha (ultimate irrigation potential), power of 24 MW and 100 MCM water for thermal power station of NTPC at Mauda (Bhandara). Total CA released under this National Project is Rs. 3,682.47 crore, out of which Rs. 146.55 crore has been released during 2021-22.

Shahpurkandi Dam:

The work on the project was suspended since 30.08.2014 following dispute between the States of Jammu & Kashmir and Punjab. However, an

agreement was reached between Punjab and Jammu & Kashmir States under the aegis of erstwhile MoWR at New Delhi on 8th September, 2018 to resume works of Shahpurkandi Dam project in Punjab on river Ravi. Work has been resumed w.e.f. 1st November, 2018.

Government of India has approved the funding for "Implementation of Shahpurkandi Dam (National Project) on River Ravi in Punjab State" with an estimated cost of the Rs.2,715.70 crore out of which, the irrigation component (28.61% of approved cost) and power component (71.39% of approved cost) amount to Rs.776.96 crore and Rs.1,938.74 crore, respectively. CA of Rs.485.38 crore would be provided for the balance works portion of irrigation component of the said project amounting to Rs.564.632 crore.

After completion of the project, water would be made available to the State of Punjab and UT of J&K to provide irrigation in 5,000 ha. and 32,173 ha. respectively. In addition, water being released to provide irrigation in 1.18 lakh ha of area under UBDC system in Punjab at present would be regulated efficiently and irrigation in the area would be benefitted. Out of total CA of Rs.485.38 crore, CA of Rs.256.59 crore has been released by Govt. of India.

Teesta Barrage National Project:

Teesta Development Plan consists of three phases. Benefits envisaged are irrigation benefit to CCA of 922 thousand ha (Phase-I), 1,000 MW hydro power (Phase-II) and navigation link between Brahmaputra & Ganga (Phase-III). The sub-stage – I of the Stage –I of Phase – I (under National Project), on completion, would create irrigation potential of 527 thousand ha over a CCA of 342 thousand ha. The estimated cost of the National Project is Rs. 2,988.61 crore (at 2008 price level). Government of India has released CA of Rs.178.20 crore under the scheme of National Projects.

Lakhwar Multipurpose Project:

For implementation of Lakhwar Multipurpose in upper Yamuna basis, an agreement amongst the States of Himachal Pradesh, Uttarakhand, Uttar Pradesh, Haryana, National Capital Territory of Delhi and Rajasthan was signed by Hon'ble Chief Ministers of the co-basin States on 28.08.2018. The project was accepted at revised cost estimate of Rs. 5,747.17 crore (PL July, 2018) in 141st TAC meeting held on 11.02.2019. MoEF & CC vide letter dated 02.02.2021 has issued environmental clearance to the project. Funding of the project has been approved during 2021-22 and the project has been included under PMKSY. CA of Rs. 38.58 crore has been released to the project during 2022-23 (upto Dec., 2022).

Renukaji Dam Project:

For implementation of the Renukaji Dam National Project in upper Yamuna basin, an agreement amongst the States of Himachal Pradesh, Uttarakhand, Uttar Pradesh, Haryana, National Capital Territory of Delhi and Rajasthan has been signed by Hon'ble Chief Ministers of the co-basin States on 11.01.2019. Revised estimated cost of Rs. 6,946.99 crore (PL October, 2018) was accepted by Advisory Committee in its 143rd meeting held on 09.12.2019. Investment clearance was accorded to the project in 13th meeting of Investment Clearance Committee of

DoWR, RD & GR held on 07.08.2020. Funding of the project has been approved during 2021-22 and the project has been included under PMKSY. A total CA of Rs.1,495.50 crore has been released to the project (upto Dec., 2022).

Relining of Sirhind Feeder and Relining of Rajasthan Feeder of Punjab

The funding of Relining of Sirhind Feeder and Rajasthan Feeder of Punjab was approved on 26.09.2018. Sirhind and Rajasthan feeders take off upstream of Harike head works and flow through Punjab before crossing over to Rajasthan. The twin canals run parallel have a common bank and were constructed in 1960s as lined (brick) channels to convey water to command areas in Punjab and Rajasthan. Rajasthan feeder is exclusively meant for providing water to Indira Gandhi Nahar Project which serves the command lying in western Rajasthan. Seven districts of western Rajasthan including major cities like Jodhpur, Bikaner, and Jaisalmer are totally dependent on Indira Gandhi Nahar Project for drinking water. Besides it also supplies water to power plants at Suratgarh, Ram Garh etc. Sirhind Feeder serves areas in both Punjab and Rajasthan.

The relining of Rajasthan feeder would save 560 cusec of water which would stabilize/ improve irrigation in 98,739 ha. in Rajasthan to benefit the entire western Rajasthan. Relining of Sirhind feeder would save 256 cusec of water which would stabilize/improve irrigation in 20,740 ha of area in Rajasthan and 48,356 ha in Punjab and address the problem of water-logging in 84,800 ha. of land in Muktsar, Faridkot and Ferozpur districts in south-west Punjab. This is in addition to Rs.156 crore of central assistance released earlier for these projects. Central assistance of Rs.278.05 crore has been released upto Dec., 2022.

3.2 NATIONAL MISSION FOR CLEAN GANGA (NMCG)

National Council for Rejuvenation, Protection and Management of River Ganga (referred as National Ganga Council) was constituted vide notification no. S.O. 3187(E) dated. 7-10-2016 under EPA, 1986. "Namami Gange" was launched with the aim of integrating previous and currently ongoing initiatives in holistic manner with a basin approach. It has been approved as a Central Sector Scheme in 2015 and includes diverse set of interventions such as pollution abatement measures to tackle different sources of pollution such as municipal sewage, industrial effluents, municipal solid waste, non-point sources of pollution and interventions for improving ecological flows, biodiversity conservation, afforestation, improving amenities and sanitation at riverbanks, capacity building, research & monitoring, public awareness. The program was given a dedicated budget of Rs. 20,000 crore for a period of 5 years. These programs are *Nirmal Ganga, Aviral Ganga, Jan Ganga, Gyan Ganga* and *Arth Ganga*.

Pollution Abatement (Nirmal Ganga)

During the FY 2022-23 against budget allocation of Rs. 2,500 crore (RE) DoWR, RD & GR has released an amount of Rs.1,600 crore to NMCG. NMCG has released an amount of Rs.1,572 crore (upto 31st December, 2022) to State Programme Management Groups and other implementing agencies for the

implementation of project under Namami Gange.

Industrial Pollution Management

Inventory of Grossly Polluting Industries (GPIs) has been done for prioritized monitoring. GPIs are industries discharging pollution load of BOD 100 kg per day or more and/ or handling hazardous chemicals.

Tannery Cluster

Three CETPs at Kanpur region connected with Tanneries sector are being monitored on quarterly basis.

Textile Cluster:

Five textile clusters namely Bhadohi, Pilkuwa, Rooma, Farrukabad and Mathura were selected for consideration of CETP.

Water Quality Monitoring

Water quality monitoring of river Ganga is carried out manually as well as using sensors based real time system. Central Pollution Control Board (CPCB) is monitoring water quality at 97 locations through respective State Pollution Control Boards (SPCBs) while at 76 Stations using Real Time Water Quality Monitoring Systems and collected data is compiled at CPCB.

Ecology and Flow (Aviral Ganga)

E-Flow: Central Government issued an Order vide gazette notification number S.O. 5195 (E), dated the 09.10.2018 specifying the minimum environmental flows to be maintained in river Ganga in the identified stretches.

Rural Sanitation

Department of Drinking Water and Sanitation (DoDWS) had identified 1,681 Gram Panchayats (4,507 villages) situated in the five Ganga States. Rs.829 crore has been released to the DoDWS for construction of around 12 lakhs independent household toilets in these Ganga villages all of which have been declared ODF.

Under the ODF plus intervention of the Ministry, NMCG has released Rs.124 crore for undertaking solid and liquid waste management in the Ganga villages to address the problem of polluted water from the villages flowing into the river and also to improve the sanitation in the villages.

Biodiversity

One of NMCG's long term visions for Ganga rejuvenation is to restore the viable population of selected endemic and endangered biodiversity of the river, so that they occupy their full historical range and fulfil their role in maintaining the integrity of the Ganga river ecosystems.

Afforestation

Afforestation is a key component in rejuvenation of river Ganga. Accordingly, a DPR was prepared by FRI Dehradun for afforestation of 1,34,104 hectares in the Ganga basin States of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, and West Bengal at an estimated cost of Rs.2,293.73 crore.

Wetland Conservation

Wetland conservation is also an integral component of 'Namami Gange'. There are 23 Ramsar sites in the Ganga Basin, out of a total of 75 Ramsar sites in India. Under the Namami Gange

programme, 3 projects have been sanctioned for the conservation of wetlands.

Research, Policy and Knowledge Management (Gyan Ganga)

Namami Ganga is working to facilitate diversified research, scientific mapping, studies, and evidence-based policy formulation (Gyan Ganga). This includes various projects comprising LiDAR Mapping, GIS & Remote Sensing, research, and knowledge development under Ganga Knowledge Centre, etc.

People River Connect (Jan Ganga)

New Projects:- Developments of River Front Development (RFD), Ghats & Crematoria and kunds/ponds rejuvenations works in select cities have been taken up. 77 projects have been sanctioned for the construction of 219 ghats and promenade, 62 crematoria and 8 kunds/ ponds rejuvenation, out of which 191 ghats, 49 crematoria and 8 kunds have been completed.

Ghat Cleaning

As part of Namami Gange initiative, ghat cleaning projects were taken up at various locations along the river Ganga. In Rishikesh, a ghat cleaning project, at a cost of Rs 2.35 crore is going on for cleaning of 8 ghats. Similarly, in Varanasi a ghat cleaning project, at a cost of Rs. 8.21 crore are going on for cleaning of 88 ghats.

Address by Shri Bishweswar Tudu, Hon'ble MoS, Ministry of Jal Shakti, Ganga Utsav organized by NMCG on 04.11.2022

3.3 ATAL BHUJAL YOJANA (ATAL JAL)

Atal Bhujal Yojana (ATAL JAL) is being implemented since April, 2020 in 8,220 water stressed Gram Panchayats of 229 administrative blocks/Talukas in 80 districts of seven States, viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh for five years. The selected States account for about 37% of the total number of water-stressed (over-exploited, critical and semi-critical) blocks in India.

COMPONENTS OF THE SCHEME

- Institutional Strengthening & Capacity Building component (Rs.1,400 crore) for strengthening institutional arrangements by providing strong data base, scientific approach and community participation in the States to enable them sustainably manage their ground water resources.
- Incentive Component (Rs. 4,600 crore) for incentivizing the States for convergence amongst various schemes of the Central and State Governments and achievement of pre-defined results as a measure of improved ground water management and consequent improvement in ground water scenario.

Allocation of funds under the Institutional Strengthening Component shall be used by the States for improving their institutional framework for ground water management through activities such as engagement of domain experts & District Implementation Partners (DIPs), procurement of equipment, up-gradation of laboratories and capacity building activities.

Funds under the Incentive Component shall be disbursed to the States on achievement of pre-defined targets namely i) public disclosure of ground water related information and reports, ii) preparation of community-led Water Security Plans (WSPs), iii) public financing of approved Water Security Plans through convergence of ongoing/new schemes, iv) adoption of practices for efficient water use and v) improvement in ground water conditions, evidenced by arrest in the decline of water levels in observation wells. The incentives shall be used by the States for interventions that improve the sustainability of ground water resources.

The scheme is expected to result in multiple benefits including i) improvements in sustainability of ground water resource in target areas, ii) positive contributions to the sustainability component of Jal Jeevan Mission, and to the goal of doubling farmers' income, mainly through convergence among various on-going schemes and iii) Inculcation of behavioural changes in the community to foster improved ground water management. The participatory approach envisaged under this scheme is crucial for addressing groundwater challenges in the long run.

Achievements during 2022-23:

During the year 2022-23, after verification from Third Party Government Verification Agency (TPGVA) for Disbursement Linked Indicator (DLI) #1 and DLI#2, approx. Rs. 500 crore was released to the States based upon their achievement under DLIs.

Almost all Water Budget and Water Security Plans (WSPs) have been

prepared & submitted. The purpose of the water budget is to assess surface and groundwater resources and identify current and future needs as a basis for planning. Water Security Plans (WSPs) are prepared on the basis of water budgets. These plans specify investments and interventions to meet the anticipated demands while ensuring sustainable water use. WSPs are customized to meet the specific challenges in the GP and include any water-related investments/ interventions that serve the purpose. Water Budget as well as WSPs are prepared by the GPs with the support of the Water Management Committees (WMCs)/Village Water & Sanitation Committees (VWSCs), aided by the District Implementation Partners engaged. Implementations of the interventions proposed under WSP are being done in the field with active involvement of communities through convergence of various Central / State Government schemes by concerned line Departments.

As Atal Bhujal Yojana is a scheme aimed primarily at inculcating behavioral changes among the stakeholders to facilitate judicious use of ground water, training and capacity building have a vital role to play in ensuring its success. In order to build capacity at the ground level, necessary action has been taken in the year 2022. Several State level workshops were conducted in order to guide and hand hold State/District/GP level authorities and DIPs. Further, in order to provide better understanding of the innovative practices available to increase water use efficiency, demonstration visits have also been organized where in farmers are exposed to these practices on field.

One of the key aspects of ATAL JAL is to bring in behavioral changes in the community, from the prevailing attitude of consumption to conservation & smart water management. It is imperative that this message is driven across all levels, especially at the grass-root level, so that the objectives of the scheme are achieved. Creation of awareness among the general public about the program objectives and creation of an enabling environment for scheme implementation at various levels through information, education and communication (IEC) is an important activity under Atal Bhujal Yojana. Awareness campaigns have been undertaken using different media of mass communication. The thrust of the campaign is at the GP level, where communication tools such as nukkad nataks (street plays), audio-visual clips, wall-writing, display boards, pamphlets and cable TV are being extensively used.

In order to review the implementation of the scheme as well as to provide guidance, the National Inter-Departmental Steering Committee held its second meeting on 28th June, 2022 under the chairmanship of Secretary, DoWR, RD & GR with active participation from relevant line Ministries/Departments of GOI and Atal Jal States.

3.4 FLOOD FORECASTING (FF)

CWC is providing flood forecasting service at 333 stations, of which 199 are level forecasting stations on major rivers and 134 are inflow forecasting stations on major dams/barrages. Overall 1,022 automatic data collection stations with sensors and satellite transmission system, three earth receiving stations viz, New

Delhi, Jaipur and Burla and 27 modelling centres equipped with latest computer systems for analysis of data, flood forecast formulation and its dissemination to concerned agencies expeditiously have been installed on various river basins.

During the flood season, CWC operates Flood Control Room on 24x7 basis at its headquarter in New Delhi and 29 Division Offices spread throughout the country for monitoring the flood situation. On an average, about 10,000 forecasts are issued during flood season every year by the CWC. Normally, these forecasts are issued 6 to 30 hours in advance, depending upon the river terrain, the locations of the flood forecasting sites and base stations. In addition to conventional flood forecasting methodology, mathematical model forecasting based on rainfall-run off methodology is also being used in some areas. This has enabled CWC to issue 5 day advance flood advisory.

Automated online 5 days flood advisory for all the flood the level and inflow forecasting stations is maintained. "Flood Situation for next five days" in respect of stations likely to be above warning level has been 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.

REGULAR FLOOD FORECASTING ACTIVITY

During the flood season 2022; 11,511 flood forecasts (6,779 level forecast and 4,732 inflow forecasts) were issued, out of which 10,812 (93.93%) forecasts were found within accuracy limit (±0.15m for level forecast and ±20% for inflow forecast). Since 2014, CWC is using web-based software "e-SWIS" for entry of hydrological data on hourly basis, analysis of data and dissemination of flood forecasts. From the year 2020, web based software WIMS is used by all divisions of CWC for entering data on hourly basis, analysis of data and dissemination of flood forecasts. A summary of flood situation observed during 1st May to 31st December, 2022 is given below:

Extreme Flood situation in flood forecasting Stations:

Eight flood forecasting stations flowed in Extreme Flood Situation during 1st May to 31st December, 2022; 11 flood forecasting stations and 80 Flood Monitoring Stations flowed in Extreme Food Situation.

Severe Flood situation for flood forecasting Stations:

Ninety Five FF Stations flowed in Severe Flood Situation in the States of Arunachal Pradesh, Assam, Odisha, Bihar, Uttar Pradesh, Uttarakhand, West Bengal, Maharashtra, Rajasthan, NCT Delhi, Andhra Pradesh, Kerala, Telangana and Jharkhand during the period 1st May to 31st December, 2022.

Table Showing Extreme Flood Situation Cases at Flood Forecasting Sites during 1st May to 31st December, 2022:

Sl. No.	State	District	River	Station	Period	
					From	To
1.	Assam	Nagaon	Kopili	Kampur	15/05/2022 1600 hrs 16/06/2022 1600 hrs	21/05/2022 2000hrs 22/06/2022 1600 hrs
2.	Bihar	Kishanganj	Mahananda	Taibpur	29/06/2022 0400 hrs	29/06/2022 0800 hrs
3.		Supaul	Kosi	Basua	02/08/2022 1900 hrs	02/08/2022 2200 hrs
4.		Siwan	Ghagra	Darauli	14/10/2022 0600 hrs	16/10/2022 2200 hrs
5.	Telangana	Bhupalpally	Godavari	Kaleswaram	14/07/2022 0600 hrs	15/07/2022 1200 hrs
6.		Kumarambheem	Wardha	Sirpur(T)	14/07/2022 0300 hrs	17/07/2022 0200 hrs
7.	Andhra Pradesh	Alluri Sitharama raju	Sabri	Chinturu	15/07/2022 0100hrs	19/07/2022 1000 hrs
8.	Rajasthan	Karauli	Chambal	Manderial	25/08/2022 0400 hrs	25/08/2022 1100 hrs
9.		Dholpur	Chambal	Dholpur	25/08/2022 0600 hrs	26/08/2022 0700 hrs
10.	Uttar Pradesh	Balrampur	Rapti	Balrampur	08/10/2022 1100 hrs	13/10/2022 1900 hrs
11.		Siddharthnagar	Rapti	Bansi	14/10/2022 1600 hrs	19/10/2022 0900 hrs

3.5 FLOOD MANAGEMENT & BORDER AREAS PROGRAMME

The States /UTs are provided promotional financial central assistance through Flood Management Programme (FMP) and River Management Activities & Works related to Border Areas (RMBA) schemes of Department, which have been merged into a single scheme Flood Management and Border Areas Programme (FMBAP). Grant-in-aid to the tune of Rs. 2,104.34 crore under FMP component and Rs. 620.52 crore under RMBA component of FMBAP has been released to States/UTs during the period April, 2017 to December, 2022.

FLOOD MANAGEMENT PROGRAMME

During 11th Plan, Government of India launched "Flood Management Programme for providing central assistance to the State Governments for undertaking the works related to river management, flood control, anti-erosion, drainage development, flood proofing, restoration of damaged flood management works and anti-sea erosion works which has been continued as component of FMBAP.

So far central assistance amounting to Rs. 6,977.42 crore has been released to Union Territories/State Governments under this programme. The 415 projects

completed under this programme have given protection to an area of around 4.994 mha and protected a population of 52.21 million. The details of central assistance released and area protected /population benefitted are given in ***Annexure-VII*** and ***Annexure-VIII*** respectively.

RIVER MANAGEMENT ACTIVITIES AND WORKS RELATED TO BORDER AREAS

The above central sector scheme was approved for implementation during 12th Plan which has been continued. The scheme has three components viz.,

i) **Hydrological observations and flood forecasting on common border rivers with neighboring countries: Activities under this component include:**

- **Flood forecasting on rivers common to India and Nepal:** Flood forecasting on rivers common to India and Nepal has been in operation with currently 46 meteorological/ hydro-meteorological sites in the Nepalese territory.
- **Hydrological observations on rivers originating in Bhutan:** A comprehensive scheme for establishment of hydro-meteorological and flood forecasting network on rivers common to India and Bhutan is also in operation for transmission of real time data to control rooms in India. The cost of operation and maintenance of these sites in Bhutan is borne by India.
- **Joint observations on rivers common to India and Bangladesh and cooperation with neighbouring countries:** During lean season (January to May), the Ganga water is shared at Farakka with Bangladesh, as per the provisions of the Treaty signed between the two countries in 1996. The hydrological observations are being conducted jointly at Farakka (India) and Hardinge Bridge (Bangladesh) every year during the lean season.
- **Hydrological Data sharing by China:** During every monsoon, hydrological data of three stations (Nugesha, Yangqen and Nuxia on Brahmaputra and station (Tsada) on Sutlej is provided by China to India as pre existing MoUs and cost of maintenance of these stations is borne by India. The information provided by China is utilized by India in flood forecasting and advance warning.

ii) **Investigations of Water Resources projects in neighbouring countries:**

Activities/projects under this component are:

- **Pancheshwar Multipurpose Project:** Pancheshwar Multipurpose Project is proposed along the India-Nepal border as per the provisions of the Mahakali Treaty signed in 1996 between India and Nepal for in targeted development to river Mahakali (Sarada in India). The DPR of India-Nepal Pancheshwar Multipurpose Project is under finalization through discussions between Government of India and Government of Nepal.

- **Surveys & Investigation of Sapta Kosi High Dam and Sun Kosi Storage cum Diversion Scheme:** As per the bilateral agreement, the Joint Project Office–Sapta Kosi & Sun Kosi Investigation (JPO-SKSKI)–is carrying out field investigations for Sapta Kosi High Dam and Sun Kosi Storage-cum- Diversion Scheme for preparation of a comprehensive DPR. Regular meetings through established bilateral mechanisms between the Government of India & Nepal are held for reviewing the progress of various works.

iii) Grant-in-Aid to States/ UTs for flood management/ anti-sea erosion:

The scheme provides for 100% grant to select border States and UTs for river management works. Grant-in-aid amounting to Rs. 620.52 crore has been released under RMBA component of FMBAP to States/ UTs during the period April, 2017 to December, 2022.

NORTH KOEL RESERVOIR PROJECT:

DoWR, RD & GR has taken up the long pending project for completion of balance works of North Koel Reservoir Project, Bihar and Jharkhand. The balance works of North Koel Reservoir Project have been approved at an estimated cost of Rs. 1,622.27 crore. Project will provide irrigation benefit to 1,11,521 hectares of land annually in drought prone areas of Aurangabad and Gaya districts of Bihar and Palamau and Garwa districts of Jharkhand. It also has the provision for supply of 44 MCM water for drinking and industrial water supply. Execution of balance works of the project on turnkey basis by M/s WAPCOS Ltd as Project Management Consultant (PMC) has been approved. 10% works on dam & appurtenant, 95% works on Mohammadganj barrage and 75% works on left main canal have been completed.

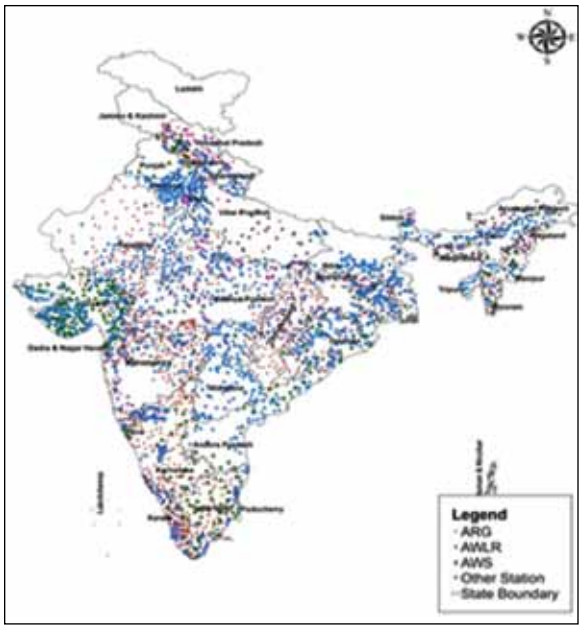
3.6 NATIONAL HYDROLOGY PROJECT (NHP)

National Hydrology Project (NHP), with support from the World Bank, envisages establishing a system for timely and reliable water resources data acquisition, storage, collation and management. It has pan-India coverage with 48 Implementing Agencies (IAs) (including 9 from Central Government, 3 from River Basin Organisations, 2 from Union Territories and 34 from States). It will also provide tools and systems for informed decision making for water resources assessment, planning and management. The National Hydrology Project has been approved with an outlay of Rs. 3,679.77 crore as a Central Sector Scheme with 100% grant to State Governments and Central Implementing Agencies. The project has a duration of 8 years from 2016-17 to 2023-24.

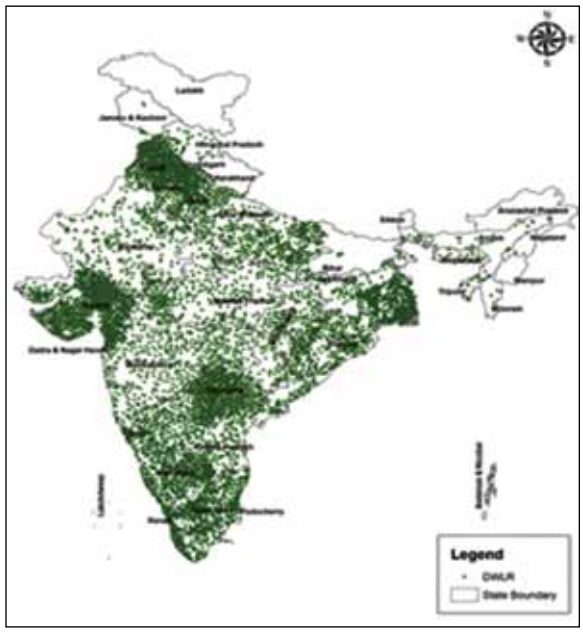
Objectives:

- To improve the extent, quality, and accessibility of water resources information.
- To create decision support system for floods and basin level resource assessment/planning.
- To strengthen the capacity of targeted water resources professionals and management institutions in India.

Impact:



Surface Water Real Time Data Acquisition System being installed under NHP



Ground Water Real Time Data Acquisition System being installed under NHP

The aim of NHP is to provide an enabling platform to the various Implementing Agencies across the country for taking informed decisions related to scientific management of precious water resources in the country. Emphasis is being laid on installation of Real Time Data Acquisition System (RTDAS). Accordingly, around 20,000 surface and ground water monitoring sites are being established throughout the country through which real time data would be transmitted to the centralized online water resources information system and State Data Centres. Around 10,000 such systems have already been installed. The data of these stations is being integrated into centralized database system gradually, as the systems are installed, tested and integrated to the centralized database. The States are also sharing data from manual and automatic observation stations established under other initiatives. The available information is now being disseminated through water data online module of India WRIS being operated by National Water Informatics Centre.

Apart from above some of the major analytical tools, knowledge products and decision support systems being developed under NHP that would integrate database, models and scenario manager for flood forecasting, integrated reservoir operations and water resources accounting for improved operation, planning and management of water resources.

Some of the major activities taken are given below

a) Early Flood Warning System including inundation forecasting for the Ganga, Godavari, Tapi, Krishna- Bhima, Damodar, Periyar and Ravi basins.

b) Development of Decision Support System, Planning and Management DSS (PM).

c) Development of National Hydrological Model for the entire country.

d) Glacial lakes Atlas has been prepared for all the catchments of Indian Himalayan River Basins-Indus, Ganga & Brahmaputra.

e) Extended Hydrological Prediction (EHP) for Narmada, Cauvery and Yamuna basins with a lead time upto 4 weeks.

f) Sedimentation process, sedimentation transport and its deposition in reverviors modeling for 7 basins.

g) Embankment asset management systems

h) Geoid model and CORS network and acquisition of DEM of different configuration in flood prone areas.

i) DSS Development for aquifer based Integrated GW Management

j) Bathymetry survey and sedimentation analysis of more than 450 reservoirs of India.

Capacity Building: Under the capacity building component, a variety of trainings, webinars, workshops, and conferences are conducted. These trainings / webinars / workshops / conferences are held both physically and virtually. More than 350 physical trainings have been conducted and around 3,500 personnel have been trained upto 31.12.2022.

Young Water Professional (YWP) Presentation Ceremony conducted by National Hydrology Project (NHP) in collaboration with Australian Water Partnership (AWP)

3.7 INFORMATION, EDUCATION AND COMMUNICATION (IEC)

National Water Awards 2022:

The Department has instituted National Water Awards with the objectives of encouraging the stakeholders to adopt holistic approach towards water resources conservation and management in the country. The aim is to recognize the efforts of individuals, organizations, Districts & State authorities etc. for good work done in the field of water resources management. The 1st, 2nd & 3rd National Water Awards were successfully organized by the Department in 2019, 2020 and

2022 respectively, and winners in different categories were felicitated with awards & cash prizes.

The Hon'ble President of India, Shri Ram Nath Kovind, presented the third National Water Awards and launched the Jal Shakti Abhiyan: Catch the Rain campaign 2022 in New Delhi on 29th March, 2022.

The first National Water Award 2018 was successfully launched by this Department, setting in motion this exercise. The National Water Award have provided a good opportunity to start-ups as well as leading organizations to engage and deliberate with senior policymakers on how to adopt the best water resources management practices in India. The Department has awarded 57 States, Organizations, Individuals, etc in 11 categories - Best State, Best District, Best Village Panchayat, Best Urban Local Body, Best Media (Print & Electronic), Best School, Best Institution/RWA/ Religious organization for campus usage, Best Industry, Best NGO, Best Water User Association, and Best Industry for CSR Activity.

The Department has launched the 4th National Water Awards with the continued focus on recognizing work done by people in the water sector and with greater zeal to motivate more and more people to work towards water conservation and management. These awards were launched on 30th July 2022 across 11 (eleven) different categories. There is a provision of 3 (three) winners (1st, 2nd & 3rd) in each of these categories – a total provision of 33 awards. All the applications are being received only through Rashtriya Puraskar Portal (www.awards.gov.in) in accordance with the instructions of DG (Awards), MHA. The date of receiving applications was closed on 31st October 2022. Screening Committee and Jury Committee have been formed in order to scrutinize and select for the winners. The 11 categories under 4th National Water Awards are Best State, Best District, Best Village Panchayat, Best Urban Local Body, Best Media (Print & Electronic), Best School, Best Institution for Campus usage, Best Industry, Best NGO, Best Water User Association and Best Industry for CSR Activities.

Water Heroes: Share Your Stories Contest 3.0:

The objective of the 'Water Heroes: Share Your Stories' contest is to promote value of water, in general, and for supporting country-wide efforts on water conservation and sustainable development of water resources. The 1st & 2nd editions of contest were successfully completed in 2020 & 2021. The 3rd edition of the contest was launched on 1st December 2021 and continued for one year till 30th November 2022. The participants have shared their success stories in the form of write up, video clips and photos. The participant is to share through MyGov portal or submit through Central Ground Water Board (CGWB) email. The winners are selected on monthly basis by a selection committee formed to scrutinize, shortlist and select for the winners. Maximum of 10 winners per month are selected, and given a cash prize of Rs. 10,000/- each with a certificate.

Publicity through Print media - Publishing of monthly magazine "Jal Charcha":

The Department has come up with monthly magazine to engage with the

stakeholders to help in informed decision-making at the central level. The magazine is an effort to bring best practices and good work done by the people in the field of water sector to the national stage, and move ahead in the direction of creating water consciousness in the minds of the people. Given the vastness of the subject, while the theme of the magazine would change with every issue, effective water resources conservation and management in an integrated manner remains the main theme. The magazine "Jal Charcha" is being circulated on monthly basis to about 1,000 recipients all over the country. In addition, soft copy of the magazine is sent through email to the stakeholders all over the country.

Electronic Media Campaign - Production of videos/films:

Various video spots/ documentary films on successful work done by the Department, animated videos/ short videos/ films are produced for awareness on water conservation and rain water harvesting techniques, videos for National Water Awards are being produced through NFDC and Doordarshan. These videos are shared / uploaded on social media platforms like Facebook, Instagram, twitter etc. for mass awareness and for general public.

Social Media campaign:

The social media activities of the Department are operated on Facebook, Twitter, Instagram, Youtube and KooApp. The targets are increasing reach of social media handles of the Department and the various organizations, creation of quality content to connect with the people, highlighting the initiatives/ campaigns of the Department, creation of awareness about water resources, conservation and management, and engaging people of the country. Campaigns have been undertaken on success stories celebrating successful endeavours of individuals, groups, and organizations, Catch the Rain campaign, Azadi Ka Amrit Mahotsav (AKAM) campaign, Water Heroes 3.0 Contest, Jal Jeevan Mission, "Confluences of India: With the Confluences of Indian Rivers", Say No to Single Use Plastic, #Cyber Awareness, Amrit Sarovar, Wetlands of India, #National Nutrition Week, Migratory Birds: Indian subcontinent, Types of Waterbodies and landforms, 'Guess the Place' quiz, Drought Tolerant Plants, Adbhut Ganga, 7th India Water Week, Janjatiya Gaurav Diwas and others.

Logo Support:

The Department has provided logo support for the events like 9th Edition of PSU Awards, Water India/8th Smart Cities India 2023, Water & Waste Expo 2023, All India Mayor and RWA Summit 2023, India Smart Utility Week (ISUW 2023), 3rd National Water Innovation Summit, 8th India Industry Water Conclave, International Dam Safety Conference, Water Innovation Summit, Smart Urbanation 2022, Economic Times SDGs Summit, 2022, Water Sustainability Awards 2022-23, Water and Plumb Expo etc.

Participation in Exhibitions/Expos:

The Department has participated in the events like 108th Indian Science Congress, Shining Maharashtra, Jal Prahari Samman Samaroh 2022, Rise in Uttar Pradesh 2022, India International Trade Fair, New Delhi, Shining Madhya Pradesh,

Vision Rajasthan, Aspiring Haryana, National Exhibition in Kolkata, 26th Sundarban Kristi Mela Sanskriti Utsab, 13th Edition of AgroVision Summit, 7th Vibrant India - 2022, Jaipur Expo 2022, Garavi Gujarat 2022, Govt. Achievements Schemes and expo 2022, Nadi Utsav in Madhya Pradesh etc.

3.8 E-GOVERNANCE ACTIVITIES:

- Department has completely operationalized e-Office w.e.f. 2nd Feb., 2017. This Department has more than 95% electronic files usage in e-Office and the percentage of physical files being used is less than 5%. All new files are opened in electronic form. Presently e-Office (Lite) v7.0x (latest version) is implemented w.e.f. 16.01.2022 in the Department.
- Department has linked its e-Office instance with Department of Expenditure, Department of Personnel & Training, Department of Tourism, Department of Legal Affairs enabling inter-departmental transfer of e-Files amongst these Departments.
- e-Office is fully implemented in the Attached/ Subordinate/ Autonomous & PSU offices in Central Water Commission (CWC), Central Soil & Materials Research Station (CSMRS), Central Water & Power Research Station (CWPRS), Ganga Flood Control Commission (GFCC), Central Ground Water Board (CGWB), Upper Yamuna River Board (UYRB), National Institute of Hydrology (NIH), National Mission for Clean Ganga (NMCG), National Water Development Agency (NWDA), National Projects Construction Corporation Ltd. (NPCC), National Water Informatics Center (NWIC), National River Conservation Directorate (NRCD), National Hydrology Project (NHP), National Water Mission (NWM), WAPCOS, NERIWALM.
- The website of the Ministry is updated regularly. Focus has been made on regular basis for updation of contents on the websites of the organization offices.
- e-HRMS is a flagship programmme of Department of Personnel and Training (DoPT) which aims to create a comprehensive and integrated system through adoption of principle of e-Governance is implemented in the Department. Further, as per direction of DoPT, implementation of e-HRMS in the Attached/Subordinate offices under this Department is also in process.
- Data Governance Quality Index (DGQI) is implemented in the Department. DGQI is mainly a self-administered survey for use of information technology for implementing central sector and centrally sponsored schemes of the Ministries/ Departments. The aim of DGQI is to improve the preparedness of the data systems of Ministries / Departments through a self-assessment mechanism. Action Plan for the Department has been prepared and submitted to NITI Aayog. About 17 projects/ schemes of the Department are included under DGQI. The Self-Assessment Questionnaire for the schemes/ projects of the Department has already been submitted to NITI Aayog through online mode in March, 2022.

3.9 DAM REHABILITATION AND IMPROVEMENT PROJECT (DRIP)

Dam Rehabilitation and Improvement Project (DRIP) is an externally aided project with financial assistance from the World Bank, targeting rehabilitation of some of the selected dams of the Country along with accompanying institutional strengthening component.

Dam Rehabilitation and Improvement Project (Phase-I) :

DoWR, RD & GR initiated World Bank assisted Dam Rehabilitation and Improvement Project in April, 2012, with an objective to improve safety and operational performance of selected dams along with institutional strengthening with system wide management approach. The scheme became effective in April, 2012. 223 dams located in seven States i.e. Kerala, Madhya Pradesh, Odisha, Tamil Nadu, Karnataka, Jharkhand and Uttarakhand were taken up for rehabilitation measures for improving safety and operational performances of these dams.

The financial outlay of the scheme was originally Rs. 2,100 crore (with external loan of US$ 279.3 million) with scheduled closure on 30th June, 2018. The cost of the scheme was revised to Rs 3,466 crore (with external loan of US$ 416.3 million) in September 2018 along with extension of the scheme by two years i.e. up to 30th June, 2020. The scheme was further extended by 9 months to give adequate opportunity to Implementing Agencies to complete left over works which were adversely impacted during COVID-19. Phase-I of the DRIP scheme was completed successfully on 31st March, 2021. The performance rating of scheme given by the World Bank is 'satisfactory'. It was a State Sector Scheme with back-to-back loan arrangement. The original funding pattern was 80:20, with modified funding pattern for additional financing i.e., 50:50 (Central Agencies), 70:30 (General Category States), and 80:20 (Special Category States).

DRIP Phase I - Achievements /Activities:

- **Physical rehabilitation at 221** dams completed to address various safety concerns of dams as well as safety of downstream people, property, & the environment. Balance major works at two dams were transferred to DRIP Phase II as spill over activity.
- **Financial achievement:** Out of the total project cost of Rs. 2,646 crore, total expenditure incurred was Rs. 2,567 crore.
- **Publication of Emergency Action Plans (EAP):** 217 EAPs were prepared out of which 210 EAPs were published. Stakeholder consultation meetings for 78 dams were held to disseminate EAP and sensitize all concerned stakeholders.
- **Operation and Maintenance (O&M) Manuals:** O&M manuals of 221 dams have been prepared, out of which 215 were published.
- **13 Guidelines and Manuals** on various aspects of dam safety and 1 on standard technical specifications for dam instrumentation were published under DRIP. [These documents are available on official website of DRIP (www.damsafety.in)].
- **Capacity building** of staff and officials involved in regular operation of these water assets along with

central and academic institutions is one of the important activities. This helps the operation of dams safely and efficiently during any emergency including extreme flood and earthquake activities. Under DRIP, 10 implementing agencies, eight academic institutions and two central agencies have been part of this activity. As a part of institutional strengthening, 191 customized national and international trainings have been conducted benefitting about 5,500 officials.

- To promote long term asset management, web-based tool called Dam Health and Rehabilitation Monitoring Application (DHARMA) has been developed to capture important data for all dams and use it for appropriate monitoring and development of rehabilitation protocols. This tool has been implemented with seven modules with license to 18 States. Data has been entered for 1,500 dams with 1,052 official users.
- As a part of institutional strengthening, IIT Roorkee and IISc Bangalore have announced post graduate degree program in dam safety since July, 2021 academic session.
- Dam Safety Conferences and Workshops provide a forum for exchange of experience among dam professional from around the world. Three National Dam Safety Conferences in Chennai (2015), Bengaluru (2016), Roorkee (2017) and two International Dam Safety Conferences in Thiruvananthapuram (2018) and Bhubaneswar (2019) were organized. National and international dam professionals submitted over 500 technical papers for these conferences covering aspects in dam safety management and dam rehabilitation. About 2,500 delegates participated and benefitted from rich exchange of experience relating to latest technical developments and practices in dam engineering. These conferences received overwhelming response from the national and international dam fraternity.

Dam Rehabilitation and Improvement Project (Phase-II & III):

Based on the success of DRIP Phase-I, Ministry of Jal Shakti initiated another externally funded scheme, DRIP Phase-II and Phase-III. The scheme has provision for rehabilitation of 736 dams located in 19 States (Andhra Pradesh, Chhattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand, West Bengal, and three Central Agencies (Central Water Commission, Bhakra Beas Management Board, and Damodar Valley Corporation). It is a State Sector Scheme with Central component, with duration of 10 years, to be implemented in two Phases i.e. Phase-II and Phase-III, each of six years duration with an overlap of two years.

The total cost of the project is Rs. 10,211 crore. Out of this cost, Rs. 7,000 crore is an external loan and Rs. 3,211 crore would be borne by the respective participating States and the three Central agencies. 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). Phase-II is being co-financed by World Bank and AIIB, each for US$ 250 million. The loan agreement by World Bank was signed on August 04, 2021 with 10 States (Gujarat, Kerala, MP, Maharashtra, Manipur, Meghalaya, Rajasthan, Odisha, Tamil Nadu, and Chhattisgarh) and became effective from 12th October, 2021. In addition to 10 States, four States (Uttarakhand, Uttar Pradesh, West Bengal and Karnataka) have been notified by World Bank for inclusion under this scheme.

The loan agreement by AIIB was signed on 19th May, 2022 with 10 States (Gujarat, Kerala, MP, Maharashtra, Manipur, Meghalaya, Rajasthan, Odisha, Tamil Nadu, and Chhattisgarh) and declared effective on 29th December, 2022 by AIIB.

3.10 RESEARCH AND DEVELOPMENT (R&D)

R&D activities under the scheme includes basic and applied research, creation and up-gradation of research facilities and training of personnel etc. implemented through the apex organizations of Department viz., CSMRS, CWPRS, NIH, and CWC; and research projects sponsored by the Department. Under the sponsored research projects, the Department provided financial assistance to IITs, Universities, research organizations etc. for taking up research in water sector through three Indian National Committees (INCs) constituted by the Department and Standing Advisory Committee headed by Secretary (WR, RD&GR). The Indian National Committees (INCs) constituted by the Department are: Indian National Committee on Surface Water (INCSW), Indian National Committee on Ground Water (INCGW) and Indian National Committee on Climate Change (INCCC). The R&D programme has also helped in capacity building and creation of additional facilities, research and infrastructure at various research institutes in India.

Physical Achievements:

Particulars	Year							
	2019-20		2020-21		2021-22		2022-23 (till Dec, 2022)	
	T	A	T	A	T	A	T	A
Technical Reports Submitted (Nos.)	150	241	200	207	195	204	195	140
Research Papers Published(Nos.)	250	238	290	277	305	252	300	245
Training Programmes/ Conferences Organized(Nos.)	30	66	40	42	40	48	60	46
Training of Personnel(Nos.)	650	791	-	752	-	1,058	-	1,245
T - Target A - Achievement								

Achievements of the research sponsored by the Ministry during the year:

- The study titled "Impact of Climate Change on Water Resources of Tapi Basin" undertaken jointly by SVNIT Surat, MNIT Jaipur and MANIT Bhopal has been completed.
- The study titled "Impact of Climate Change on Water Resources in River Basins from Tadri to Kanyakumari" undertaken jointly by IIT Mumbai, NIT Surathkal, CWRDM Kozhikode has been completed.
- Part of the study titled "Dynamic Downscaling to study Climate Change Impacts on Water Resources in India" undertaken jointly by IIT Madras, Anna University and BHU Varanasi has been completed. The component of the study done by IIT Delhi has been extended.

3.11 DEVELOPMENT OF WATER RESOURCES INFORMATION SYSTEM

Development of Water Resources Information System (DWRIS) Scheme, a continuing scheme of 12th Five Year Plan, is under implementation during 2021-22 to 2025-26 with outlay of Rs. 715 crore, for creation of reliable and sound database for policy formulation, planning and designing of water resources projects, timely dissemination of flood forecast, etc.

Achievements under DWRIS scheme:

- Hydro-meteorological observations at 1,730 sites.
- 333 flood forecasting stations established. On an average 10,000 flood forecasts are being issued every year and are being disseminated to all stakeholders through various platforms including social media.
- 5-day advisory has been operationalized to enhance lead time.

3.12 NATIONAL RIVER CONSERVATION PLAN

The National River Conservation Directorate is providing financial assistance to the State Governments for conservation of rivers under the Centrally Sponsored Schemes of 'National River Conservation Plan (NRCP)'.

The Central Government took initiative of river pollution abatement programme with the launching of the Ganga Action Plan (GAP) in 1985. The Ganga Action Plan was expanded to cover other rivers under National River Conservation Plan (NRCP) in the year 1995. The objective of NRCP is to improve the water quality of rivers, which are major water sources in the country, through implementation of pollution abatement works in various towns along identified polluted stretches of rivers on cost sharing basis between the Central & State Governments.

Schemes taken up under NRCP programme are aimed primarily at reduction in pollution load in rivers. Apart from improvement in water quality of rivers leading to better public health and ecology of the river systems, the pollution abatement works taken up under NRCP help to improve the aesthetics & sanitation in the towns and in maintaining a cleaner environment.

The pollution abatement works taken up under the NRCP include:

- Interception and diversion works/ laying of sewerage system to capture raw sewage flowing into the rivers through open drains and diverting them for treatment.
- Setting up of Sewage Treatment Plants (STPs) for treating the diverted sewage.
- Construction of low cost sanitation toilets to prevent open defecation on river banks.
- Construction of electric crematoria and improved wood crematoria to conserve the use of wood.
- River front development works, such as improvement of bathing ghats.
- Public participation & awareness and capacity building, etc.

Presently, NRCP (excluding Ganga and its tributaries) has covered polluted stretches of 36 rivers in 80 towns spread over 16 States at a sanctioned cost of Rs. 6,248.16 crore. An amount of Rs. 2,900 crore has been released to various State Governments for implementation of various pollution abatement schemes and a treatment capacity of 2,745 million litres per day (mld) has been created so far under the NRCP resulting in reduction in pollution load being discharged into various rivers.

The following rivers are covered under NRCP:

Sl. No.	River
1	Adyar
2	Beas
3	Bhadra
4	Brahmani
5.	Cauvery
6	Cooum
7	Devika
8	Diphu & Dhansiri
9	Ghaggar
10	Godavari
11	Krishna
12	Mahanadi
13	Mandovi
14	Mindhola
15	MulaMutha
16	Musi
17	Narmada
18	Nambul
19	Pennar
20	Pamba
21	Panchganga
22	Rangit
23	Rani Chu
24	Sabarmati
25	Satluj
26	Subarnarekha
27	Tapti
28	Tapi
29	Teesta
30	Tunga
31	Tungabadra
32	Tamrabarani
33	Tawi
34	Vaigai
35	Vennar
36	Wainganga

From 01.08.2014, works related to Ganga and its tributaries were trasferred to the then Ministry of Water Resources, River Development & Ganga Rejuvenation (MoWR, RD & GR). Accordingly the rivers namely Ganga, Yamuna, Gomti, Damodar, Mahananda, Chambal, Beehar, Khan, Kshipra, Betwa, Ramganga and Mandakini

have been shifted to MoWR, RD & GR along with the National Mission for Clean Ganga (NMCG). The Central Government has, vide Notification No. 1763 dated 14th June, 2019, further amending in the Government of India (Allocation of Business) Rules, 1961, transferred NRCD including NRCP from Ministry of Environment, Forest and Climate Change (MoEF&CC) to the DoWR, RD & GR under the newly constituted Ministry of Jal Shakti for implementation of works in respect of pollution abatement of rivers other than Ganga and its tributaries under the NRCP.

3.13 NATIONAL WATER MISSION (NWM)

National Water Mission (NWM) was set up as per the National Action Plan on Climate Change (NAPCC) which was approved by the Government of India and released by the Hon'ble Prime Minister on 30th June 2008.

The main objective of NWM is "conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management". "Implementation of National Water Mission (NWM)" is a Central Sector Scheme of DoWR, RD & GR.

National Water Mission is a think tank coordinating Mission to fill gaps in policy and for an integrated perspective as a coordinating body with the implementing wings/ bodies of the Ministry of Jal Shakti and its allied Departments/ Ministries. National Water Mission plans to bring all the stakeholders like Central Government Ministries/ Departments, State Governments, NGOs, PRIs, KVKs, NYKS, international organizations together to work towards a greater vision for creating awareness and a sense of ownership of responsibility among the citizens of the country.

3.14 GROUND WATER MANAGEMENT & REGULATION (GWM&R)

Major activities of CGWB include i) aquifer mapping and preparation of management plans as a part of the National Aquifer Mapping and Management (NAQUIM) programme; ii) exploratory drilling including lithology preparation and pumping tests; iii) monitoring of ground water levels; iv) monitoring of ground water quality; v) implementation of demonstrative schemes for artificial recharge and rainwater harvesting; vi) periodic assessment of ground water resources of the country, jointly with the concerned State Government agencies; vii) geophysical studies; viii) capacity building activities for personnel of its own as well as Central/ State Government organizations; ix) outreach activities for dissemination of usable information; xi) providing technical assistance to States / UTs; x) regulation and control of ground water development and management in the country under CGWA; xi) providing technical assistance for participatory ground water management as a part of Atal Bhujal Yojana; xii) implementation of the ground water component of PMKSY-HKKP scheme for promoting ground water based irrigation etc.

CGWB is implementing NAQUIM, which envisages mapping of aquifers (water bearing formations), their characterization and development of

Aquifer Management Plans to facilitate sustainable management of ground water resources. NAQUIM was initiated in 2012 as a part of the GWMR plan scheme with the objectives to delineate and characterize the aquifers and develop plans for ground water management. Out of 32 lakh sq km of the entire country, a mappable area of 25 lakh sq km has been identified to be covered under this programme.

During the year 2022 (January to December), nearly 5.7 lakh sq km area has been covered and so far (cumulative) aquifer maps and management plans have been prepared for an area of 24.57 lakh sq km spread over various parts of the country. The remaining area is targeted to be covered by March, 2023. NAQUIM outputs are shared with various stakeholders including the District Authorities.

3.15 RIVER BASIN MANAGEMENT (RBM)

RBM consists of two broad components namely Brahmaputra Board and Investigation of Water Resources Development Scheme (IWRDS). Further, IWRDS is being implemented by (i) National Water Development Agency (NWDA) and (ii) Central Water Commission (CWC).

Under this scheme, Brahmaputra Board had taken up preparation of master plans of the main stem of the Brahmaputra and Barak along with 68 major tributaries of Brahmaputra including Majuli Island, river Dhaleswari and rivers of Meghalaya, Mizoram, Manipur and Tripura in three parts.

Preparation of Manipur River Master Plan and updation of Hoara river Master Plans is going on and Updation of Master Plan of Main Stem Brahmaputra, Barak, South Flowing river of Meghalaya, Rivers of Mizoram have been initiated for taking up during FY 2022-23.

Three Master Plans (Tangani, Kynshi and Sankosh-Raidak) are under updation using latest State of art modern technology for obtaining necessary approval of Govt. of India. Modification of draft Master Plan of Teesta basin is also being taken up. In addition, Brahmaputra Board took up survey & investigation of 14 multipurpose projects in Brahmaputra and Barak basin and in the south flowing rivers of Meghalaya. Currently, work for DPR preparation of Simsang Dam project, Meghalaya and Jiadhal Dam project, Arunachal Pradesh has been entrusted to WAPCOS and is in progress.

Work of protection of Majuli island from flood and erosion is also being done under this scheme. A new scheme for protection of Majuli island from flood and erosion of river Brahmaputra for Rs. 233.57 crore was approved by the then Ministry of Water Resources and Ministry of DoNER allocated Rs. 207 crore for the same and remaining amount has been utilised under River Basin Management scheme. Execution of the scheme is in progress. 97% of the works has been completed so far.

Bio-engineering measures for Flood and Erosion Management - A pilot project of bio-engineering measures for river bank erosion of Brahmaputra at right bank downstream of Kordoiguri of river Brahmaputra at Majuli island is under progress.

For preparation of Detailed Project Report to check flash flood and erosion

in BTC area by Pagla/Baitamari, Aie, Beki, Pagladiya, Sankosh, Gangia and Saralbhanga rivers, work has been allotted to WAPCOS.

INTER-LINKING OF RIVERS

On the directions of Supreme Court, "Special Committee on Interlinking of Rivers" was constituted on 23rd September, 2014 under the chairmanship of the Union Minister of Water Resources, River Development & Ganga Rejuvenation (now Ministry of Jal Shakti) for implementation of Inter-Linking of Rivers (ILR) programme. Twenty meetings of the Special Committee for Inter-Linking of Rivers (ILR) have been held so far (last meeting held on 13.12.2022 at New Delhi in hybrid mode), where in State Irrigation/Water Resources Ministers along with the Secretaries of various States participated. The Special Committee on ILR takes into consideration all the suggestions/observations of the stake holders while planning and formulating the ILR projects.

Under IWRDS component of scheme, various survey & investigation works and studies on hydrological, Irrigation planning environment aspects, cropping pattern have been done for the following project mentioned projects:

- Barinium HEP, J&K
- Tlawng Hydro-Electric Project, Mizoram
- Madhura Irrigation Project, Assam
- Mat-Sekawi H.E. Project Mizoram
- Tuichang H.E. Project, Mizoram
- Buroi Medium Irrigation Project, Assam
- Medium Irrigation Project in Mebo Area, Arunachal Pradesh
- Drass-Siru Link Project
- Damring Irrigation Project, Meghalaya.

Certificate Distribution by Sh. Shri Bishweswar Tudu, Hon'ble MoS, Ministry of Jal Shakti to the Beneficiaries of Centrally Sponsored Schemes in Salem District of Tamil Nadu on 11.10.2022

Shri Gajendra Singh Shekhawat, Hon'ble Union Minister (Jal Shakti) addressing National Workshop on "Dam Safety Act, 2021" on 16.06.2022 at New Delhi

4 INTER-STATE RIVER ISSUES

Shri Gajendra Singh Shekhawat, Hon'ble Union Minister (Jal Shakti) along with State Ministers during National Workshop on "Dam Safety Act, 2021" on 16.06.2022 at New Delhi

4. INTER-STATE RIVER ISSUES

4.1 INTER-STATE RIVER WATER DISPUTES (AMENDMENT) BILL, 2019

The Inter-State River Water Disputes (Amendment) Bill, 2019 has been considered and passed by Lok Sabha on 31.07.2019. Subsequently, the Bill is to be considered in Rajya Sabha. The Bill seeks to establish a single Tribunal in place of multiple Tribunals by way of amending the existing Inter-State River Water Disputes Act, 1956 (ISRWD Act, 1956) for adjudication of inter-State river water disputes in a time bound manner. A new Tribunal with permanent establishment and its own permanent office space and infrastructure will obviate the need for establishing a separate Tribunal for each water dispute, a process which has invariably been found to be time-consuming.

Enactment of the above amendments will facilitate faster adjudication of water disputes and establish a robust institutional architecture for the purpose. Constitution of a single Tribunal with different benches as envisaged in the proposed amendment will result in about 25% reduction in staff and the consequent reduction in expenditure.

4.2 DAM SAFETY ACT, 2021

To have a unified dam safety procedure all over the country, the Dam Safety Act, 2021, was notified in the Gazette of India on 14th December 2021 and the Central Government appointed 30th Dec 2021 as the date on which the provisions of the said Act shall come into force.

Dam Safety Act, 2021 provides for surveillance, inspection, operation and maintenance of the specified dam for prevention of dam failure related disasters and to provide for institutional mechanism to ensure their safe functioning and for matters connected therewith or incidental thereto.

The Act has the provisions for setting up the following institutional mechanism:

I) At National Level:

- **National Committee on Dam Safety (NCDS):**

  NCDS shall evolve dam safety policies and recommend necessary regulations and maintain standards of dam safety. Ministry of Jal Shakti, vide Gazette notifications S.O. 757(E) and G.S.R. 134(E) dated 17.02.2022, constituted NCDS and NCDS Rules, 2022

on procedures, allowance and other expenditure, respectively. First meeting of NCDS was held on 02.08.2022 under the chairmanship of Chairman, CWC as per the provisions of the Act.

- **National Dam Safety Authority (NDSA):**

  NDSA shall implement the policy, guidelines and standards evolved by the NCDS for proper surveillance, inspection and maintenance of specified dams. Ministry of Jal Shakti, vide Gazette notifications S.O. 758(E) and G.S.R. 135(E) dated 17.02.2022 established NDSA and notified functions & power rules 2022, respectively. Details are covered under Chapter-7 (Sub heading-7.3.13).

II) At State Level:

a. State Committee on Dam Safety (SCDS):

SCDS shall supervise State Dam Safety Organisation (SDSO), State dam rehabilitation programs, review the work of the SDSO, and review the progress on measures recommended in relation to dam safety. All 31 States/UTs owning the specified dams have constituted the SCDS.

b. State Dam Safety Organisation (SDSO):

State Dam Safety Organisation shall keep perpetual surveillance, carry out inspections, and monitor the operation and maintenance of all specified dams falling under their jurisdiction to ensure continued safety of such specified dams and take such measures as may be necessary to address safety concerns. All 31 States/UTs owning the specified dams have established the SDSO.

c. At Project Level: Dam Safety unit

As per the provisions of the Act, for each specified dam, the owner shall, within the operation and maintenance establishment, provide a dam safety unit consisting of such competent levels of engineers as may be specified by the regulations.

WORKSHOPS, MEETINGS, VISITS

i. National Workshop on Dam Safety Act, 2021 for Dam Safety Governance in India:

CWC under the aegis of the DoWR, RD & GR organized a one-day National Workshop on Dam Safety Act, 2021 for Dam Safety Governance in India on 16th June, 2022 at Dr. Ambedkar International Centre (DAIC), New Delhi. The workshop was aimed at sensitizing all stakeholders about the provisions of the Dam Safety Act, 2021 and to brainstorm on dam safety governance in India.

The workshop was inaugurated by the Hon'ble Union Minister of Jal Shakti. It was attended by the Hon'ble Ministers of Jal Shakti, Hon'ble State Ministers for Jal Shakti, Union Govt. and Hon'ble Ministers from 11 States and 650 officials from various State Water Resources Departments,

Energy & Power Departments, Central Govt. Organizations, CPSUs, Academic Institutes, World Bank, etc.

ii. Dam Safety Inspection Visits:

- Visit of experts from CWC to Annamayya Dam, Andhra Pradesh during 23th -24th May 2022 to examine the reasons leading to failure of the dam on 19th Nov, 2021.
- Visit of experts from CWC to Kol Dam, Himachal Pradesh during 27th to 29th June, 2022 for the safety inspection of dam.
- Visit of experts from CWC to Baglihar Hydro Electric Project, Jammu & Kashmir during 15th-17th Nov, 2022 for the safety inspection of dam.

4.3 INTER-STATE WATER DISPUTES TRIBUNALS

KRISHNA WATER DISPUTES TRIBUNAL

The Krishna Water Disputes Tribunal was constituted on 2nd April, 2004 for adjudication of the dispute relating to sharing of waters of inter-State river Krishna and river valleys thereof. In the Writ Petition No. 408 of 2008, Hon'ble Supreme Court has ordered that the effective date of constitution of the Tribunal will be 01.02.2006. Consequently, the term of the Tribunal was extended upto 31.12.2010 as per provisions of ISRWD Act, 1956. The report and the decision by the Tribunal under section 5(2) of the Act were forwarded to the Ministry of Water Resources on 30th December, 2010.

Thereafter, the Party States, viz., Andhra Pradesh, Karnataka, Maharashtra and also the Central Government filed their Reference Applications under section 5(3) of the Act to the Tribunal. The order was pronounced by the Tribunal on 29.11.2013 by way of further report and same was forwarded to the Central Government and the respective Party States under section 5 (3) of the Act for their information and implementation.

Meanwhile, as per Andhra Pradesh Re-organization Act, 2014 the term of the Tribunal was extended for two years w.e.f. 1st August, 2014 for forwarding of further report by the Tribunal so as to address the terms of reference specified in clauses (a) and (b) of the section 89 of the Andhra Pradesh Re-organization Act, 2014 (6 of 2014). The Tribunal after hearing the parties delivered its decision on 19.10.2016 on the preliminary issues relating to jurisdiction and scope of section 89 of Act No. 6 of 2014. The report was forwarded to Ministry of Water Resources on 19.10.2016. The date of submission of the report has been extended for a further period of one year with effect from 01.08.2022. Expenditure incurred by the Tribunal:

Sl. No.	Particulars	Rs. in lakhs
1	Budget allocation for 2022-23 (BE)	403
2	Expenditure from 01/04/2022 to 31/12/2022	328
3	Cumulative expenditure upto 31/12/2022 (Since inception of Tribunal)	3,852*

**includes expenditure upto 23/12/2021 – Rs. 3430 lakh and Rs. 422 lakh from 24/12/2021 onwards (Rs. 94 lakhs 2021-22 last quarter and Rs. 328 lakhs for 22-23 upto 31/12/2022)*

MAHADAYI WATER DIPUTES TRINBUNAL

The Government of India on 16.11.2010 under section 3 of the Inter-State River Water Disputes Act 1956, constituted a Tribunal known as Mahadayi Water Disputes Tribunal (MWDT) for adjudication of the water disputes relating to the inter-State river Mahadayi and the river valley thereof among the States of Goa, Karnataka and Maharashtra.

After completion of the procedure for examination of all the evidence, the Tribunal prepared its award and forwarded the same to the Ministry of Water Resources, River Development and Ganga Rejuvenation on 14.08.2018.

References have been filed by all the three Party States as well as by the Central Government under section 5(3) of the Inter State Water River Act,1956. Against the main Award dated 14.08.2018 all the three Party States have preferred appeals before the Hon'ble Supreme Court of India. Those appeals are pending for hearing. The financial expenditure of the Tribunal for the year 2022-23 is as under:

Sl.No.	Specification	Rupees in lakhs
1.	Budget allocation for 2022-23 (BE)	427
2.	Expenditure incurred by the Tribunal from 1.4.2022 to 31.12.2022	316
3.	Anticipated expenditure of the Tribunal from 01.01.2023 to 31.03.2023	148

MAHANADI WATER DISPUTES TRIBUNAL

The Government of Odisha had filed a complaint dated 19.11.2016 under section 3 of Inter-State River Water Disputes Act, 1956, read with Inter-State River Water Disputes Rules, 1959. The State of Odisha requested to Union Government for constitution of a Tribunal under section 4(1) of the Inter-State River Water Disputes Act, 1956 for adjudication of the water disputes in respect of the inter-State river Mahanadi and its basin between the riparian States of Odisha and Chhattisgarh.

The Central Government constituted Mahanadi Water Disputes Tribunal vide Gazette of India Notification No.114(E) dated 12.03.2018. The Trbunal comprises the following Members nominated in this behalf by the Chief Justice of India, namely,

- Mr. Justice A.M. Khanwilkar, Judge of the Supreme Court of India (Chairman)
- Dr. Justice Ravi Ranjan, Judge of Patna High Court (then) Chief Justice of Jharkhand High Court, Ranchi(present) (Member–1)
- Mrs. Justice Indermeet Kaur Kochhar, Judge of the Delhi High Court (Member–2)

Progress in Adjudication of the Disputes before Mahanadi WDT: 32 hearings have been held till date. The Tribunal in the hearing held on 29.08.2020 has finalized 46 issues for the purpose of adjudicating the matter.

Expenditure incurred by the Tribunal:

Sl.No.	Specifications	Rs. In Lakhs
1	Budget Allocation for 2022-23(BE)	330.30
2	Expenditure from 04/2022 to 12/2022 [upto 05/12/2022]	231.23
3	Cumulative Expenditure upto 05/12/2022[since inception of the Tribunal]	987.74

RAVI & BEAS WATERS TRIBUNAL

The Ravi and Beas Waters Tribunal was set up in the year 1986 under sub-section (1) and sub-section (2) of section 14 of the Inter State River Water Disputes Act, 1956 (33 of 1956) to resolve the water dispute among the States of Punjab, Rajasthan and Haryana. The Tribunal submitted its report on 30.01.1987.

The Punjab Government was not satisfied with the award passed by the Tribunal and in the year 2004, the Punjab Legislative Assembly passed the Punjab Termination of Agreement Act, 2004. Consequently, the President of India made a Reference to Hon'ble Supreme Court of India under Article 143(1) of the Constitution of India regarding the constitution validity of the said Act, being the Special Reference No.1 of 2004. The Presidential Reference has since been disposed of by the Hon'ble Supreme Court of India vide judgment dated 10.11.2016. The Constitution Bench of the Supreme Court answered all the questions referred to it in the 'negative' and observed that the Punjab Act cannot be said to be in accordance with the provisions of the Constitution of India and by virtue of the said Act, the State of Punjab cannot nullify the judgment and decree referred to in the judgment and terminate the Agreement dated 31st December, 1981. The Supreme Court has transmitted its opinion to the President of India in accordance with the procedure prescribed in Part V of the Supreme Court Rules, 2013.

The expenditure of the Tribunal for the financial year 2022-23 is as under:

Sl. No.	Specifications	Rs. In Lakhs
1	Budget Allocation for 2022-23 (BE)	340.00
2	Budget Allocation for 2022-23 (RE)	382.33
3	Expenditure incurred by the Tribunal (upto 31 December, 2022)	210.00

VANSADHARA WATER DISPUTE TRIBUNAL (VWDT)

The Vansadhara Water Dispute Tribunal was notified on 24th February, 2010 under the chairmanship of Mr. Justice B.N. Agrawal with Mr. Justice Nirmal Singh and Mr. Justice B.N Chaturvedi as its Members. Mr. Justice B.N Agarwal and Mr. Justice Mr. Justice Nirmal Singh resigned from the posts of Chairman and Member of the Tribunal, respectively. Thereafter, the Central Government nominated Dr. Justice Mukundakam Sharma as Chairman of the Tribunal, who took over the charge of the post on 17th September, 2011 and Mr. Justice Ghulam Mohammad as a Member of the Tribunal, who took over the charge of the post on 08th April, 2012.

The Tribunal forwarded its Report to the Central Government under section 5(3) of the Inter State Water Disputes Act, 1956 on 21st June, 2021 which is yet to be published. The Central Government, upon being satisfied that no further reference to the said Tribunal in the matter would be necessary, in exercise of the powers conferred by section 12 of the said Act, has dissolved the said Tribunal vide Gazette Notification S.O.1051(E) published on 10 March, 2022.

All the assets and liabilities of VWDT including pending financial and other matter have been transferred to Ravi & Beas Waters Tribunal (RBWT) as per the Ministry's BM Division letter No. N-60021/1/2022-BM Section-MOWR dated 08.03.2022.

MoU signed on withdrawal of water from common border river Kushiyra on 6th September, 2022 in the presence of Shri Narendra Modi, Hon'ble Prime Minister of India and Smt. Sheikh Hasina, Hon'ble Prime Minister of Bangladesh

5 INTERNATIONAL COOPERATION

Shri Gajendra Singh Shekhawat, Hon'ble Minister of Jal Shakti held a meeting with H.E. Flemming Moller Mortensen, Minister for Development Cooperation & Nordic Cooperation, Govt. of Denmark to discuss water issues at Shram Shakti Bhawan, New Delhi on 10.08.2022

5. INTERNATIONAL COOPERATION

5.1 G20 WATER DEPUTIES MEETING

India has assumed the Presidency of the G20 from 1st December, 2022 to 30th November, 2023. During India's G20 Presidency, Ministry of Jal Shakti (MoJS) in collaboration with Ministry of Environment, Forest & Climate Change (MoEF&CC) under Climate Sustainability Working Group will organize G20 Water Deputies meeting in the Leela Hotel, Gandhinagar during 27-29 March, 2023.

During the meeting, India looks forward to provide a platform for showcasing best practices on water management by G20 member countries. The best practices shared by G20 members will be compiled into a compendium enabling knowledge exchanges and cross learning amongst G20 countries.

5.2 BILATARAL COOPERATION

DoWR, RD & GR has signed Memorandum of Understanding (MoU) with different countries on cooperation in the field of water resources management and development. For effective implementation of activities under the various signed MoUs, Joint Working Group (JWG) meetings were held with the following foreign countries for enhancing the collaboration in the field of water resources management: -

i. **MoU with Netherlands–** Strategic Partnership on Water was signed between India & Netherlands during introductory Ministerial Level JWG held on 29th March 2022 between Hon'ble Minister of Jal Shakti (India) & Hon'ble Minister of Infrastructure & Management (Netherlands) for a period of 5 years (29.03.2022 - 28.03.2027).

ii. **MoU with Japan-** The Joint Implementation Group (a sub group under Joint Working Group) was constituted on 07.07.2022 to prioritize cooperation themes based on mutual interest and the 1st meeting of the Joint Implementation Group (JIG) was held on 14.12.2022 via virtual platform.

iii. **2nd MoU with Japan-** MoU between DoWR, RD &GR & Ministry of Environment of Japan was signed on 19.03.2022 in the areas of decentralized domestic waste water management (Johkhasou Technology). The Joint Working Group (JWG) was constituted on 08.07.2022. The Indian side is headed by JS, NRCD and Japanese side is headed by Director, Office of Promotion of Johkasou.

iv. **MoU with European Union–** 5th India - EU Water Forum was held in New Delhi on 27.10.2022 to bring 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.

v. **MoU with Denmark-** An MoU was signed on 12.09.2022 for cooperation in the field of Water Resource Development and Management inter alia including (i) Establish a Centre of Excellence for Smart Water Resource Management& (ii) Establish a lab for clean rivers in Varanasi on the lines of Smart City Lab in Panaji. In respect of, Smart Laboratory for Clean Rivers (SLCR) in Varanasi, two committees namely (i) Joint Steering Committee (JSC) to prepare objective and overall plan and (ii) Progress Review Committee (PRC) to carry day to day activities identified under cooperation by JSC have been constituted by this Department vide O.M. dated 16th September, 2022. In respect of Centre of Excellence for Smart Water Resources Management (CoESWaRM), the proposal to establish the same in CWC HQ, Sewa Bhawan, R K Puram, New Delhi is under active consideration in consultation with Denmark.

FOREIGN VISITS/ DEPUTATION

Foreign trainings for Capacity Building in Water Sector: To enhance capacity building of the officers of DoWR, RD & GR and its organizations, during the period from April, 2022 to December, 2022, 63 officers have been deputed for foreign trainings, visits, seminars and conferences in the field of water resources management, micro-irrigation, water use efficiency, irrigation management, enhancing crop production, flood disaster risk management, dam safety and rehabilitation, waste water treatment, sewage treatment, morphological modeling, ecosystem conservation etc.

5.3 INDO-BANGLADESH JOINT RIVERS COMMISSION

An Indo-Bangladesh Joint Rivers Commission (JRC) is functioning since 1972 with a view to maintain liaison in order to ensure the most effective joint efforts in maximizing the benefits from common river systems. It is headed by Water Resources Ministers of both the countries. So far, 38 meetings of JRC have been held.

India-Bangladesh Water Resources Secretary Level meeting and 38th 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 23rd August, 2022 at New Delhi. The 38th Meeting of the India - Bangladesh Joint Rivers Commission was also held in New Delhi on 25th 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.

The 38th Meeting of the India- Bangladesh Joint Rivers Commission was held in New Delhi on 25th August, 2022

A Memorandum of Understanding (MoU) was signed on 6th 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 upto 153 cusecs of water each by India and Bangladesh from the common border river Kushiyara during the dry season for the consumptive water requirements of each country.

As per this MoU, both India & Bangladesh will withdraw an equal amount of water from the common stretch of Kushiyara river during the dry season (1st November to 31st 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.

Treaty on Sharing of Ganga/Ganges Waters at Farakka

A Treaty was signed by the Prime Ministers of India and Bangladesh on 12th December, 1996 for the sharing of Ganga/ Ganges waters at Farakka during the lean season. As per the Treaty, the Ganga/ Ganges waters is being shared at Farakka (which is the last control structure on river Ganga in India) during lean period, from 1st January to 31st May every year, on 10-daily basis as per the formula provided in the Treaty. The validity of Treaty is 30 years. The sharing of water as per the Treaty is being monitored by a Joint Committee headed by Members, JRC from both sides.

India-Bangladesh 77th, 78th and 79th Joint Committee Meetings for the sharing of Ganga / Ganges waters at Farakka between India and Bangladesh as per the Treaty of 1996

- The 77th meeting of the Joint Committee on sharing of the Ganga/ Ganges Waters at Farakka was held at Kolkata on 14th April, 2022 after visit to the joint observation sites at Farakka on 12th April, 2022.
- The 78th meeting of the Joint Committee on sharing of the Ganga/ Ganges waters at Farakka was held at Dhaka on19th May, 2022 after a visit to the joint observation site at Hardinge Bridge, Pakshey on 18th May, 2022.
- The 79th meeting of the Joint Committee on sharing of the Ganga/ Ganges waters at Farakka was held on 13th December, 2022 on virtual platform for finalization of Annual Report of the lean/dry season of the year 2022.

For the meetings, the Indian delegation was led by Mr. Atul Jain, Commissioner (FM), DoWR, RD & GR, 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.

5.4 INDIA – NEPAL COOPERATION

PANCHESHWAR MULTIPURPOSE PROJECT

A "Treaty concerning the Integrated Development of the Mahakali River, including Sarada Barrage, Tanakpur Barrage and Pancheshwar Project" was signed during the visit of the then Nepalese Prime Minister Sher Bahadur Deuba to India in February 1996. Under this Treaty, India and Nepal have agreed to implement the Pancheshwar Multi-purpose Project as an integrated project. The Pancheshwar Development Authority (PDA) was also set up with approval of both the Governmentsin September, 2014. The project would provide hydro energy to stabilize the power grid in the region and address water deficit by long distance water transfer in due course.

SAPTAKOSI HIGH DAM MULTIPURPOSE PROJECT AND SUN KOSI STORAGE CUM DIVERSION SCHEME (INCLUDING KAMALA DIVERSION)

The India-Nepal Joint Project Office has started functioning in Biratnagar, Nepal since August 2004 with the mandate of jointly carrying out field investigations and preparation of DPR for Sapta Kosi High Dam Multipurpose Project and Sun Kosi Storage cum Diversion Scheme (SSDS). Investigation of Kamla Multipurpose Project, which is now a component of SSDS, and preliminary study of the Bagmati Multipurpose Project were added to its mandate in October, 2004. A Joint Team of Experts (JTE) of Government of India and Government of Nepal has been constituted to finalize modalities of investigations and method of assessment of benefits for joint studies/ investigation for Sapta Kosi High Dam Multipurpose Project (SKHDMP) and regular JTEmeetings are held.

INDIA-NEPAL BILATERAL MECHANISM

The 14th Meeting of India-Nepal Joint Committee on Inundation of Flood

Management (JCIFM) was held on 9th -13th March, 2022 at Nepal. The meeting was co-chaired by Shri Sher Singh, Member (Planning), Ganga Flood Control Commission (GFCC) on the Indian side and Shri Susheel Chandra Acharya, DG, Department of Water Resources and Irrigation (DWRI) on the Nepali side.

The 10th meeting of the Joint Committee on the Kosi and Gandak projects (JCKGP) of India and Nepal was held in Patna on 12th-13th April, 2022 deliberated on the management, protection and maintenance of projects on the two rivers, which wreak havoc with floods every year, and ways to enhance irrigation potential. The India- Nepal JCKGP Meeting was chaired by Shri Sanjay Agarwal, Secretary, WRD, Government of Bihar and Nepalese delegation was headed by Director General Shri Sushil Chandra Acharya.

The 7th Joint Standing Technical Committee (JSTC) on 21st & 22nd September, 2022 at Kathmandu, Nepal. The Indian delegation was led by Shri M. K. Srinivas, Chairman, Ganga Flood Control Commission, Government of India and Nepali delegation was led by Shri Krishna Joint Secretary, Ministry of Energy, Water Resources and Irrigation, Government of Nepal.

Shri Pankaj Kumar, Secretary, Department of Water Resources, River Development & Ganga Rejuvenation and Shri Sagar Rai, Secretary, Ministry of Energy, Water Resources and Irrigation, Government of Nepal during 9th Meeting of India-Nepal Joint Committee on Water Resources (JCWR) on 23rd September, 2022 at Kathmandu

The 9th Meeting of India-Nepal Joint Committee on Water Resources (JCWR) was held on 23rd September, 2022 at Kathmandu. The Indian delegation was led by Shri Pankaj Kumar, Secretary, Department of Water Resources, River Development & Ganga Rejuvenation and Nepali delegation was led by Shri Sagar Rai, Secretary, Ministry of Energy, Water Resources and Irrigation, Government of Nepal.

5.5 INDIA – CHINA COOPERATION

During the visit of Hon'ble President of the People's Republic of China in November, 2006, it was mutually agreed upon to set up an Expert Level Mechanism

(ELM) to discuss interaction and co-operation upon provision of hydrological data in flood season, emergency management and other issues regarding trans-border rivers. The ELM meeting is held yearly alternately in both the countries. Government of India takes up relevant issues relating to trans-border rivers, with the Chinese side through this Expert Level Mechanism. Thirteen meetings of ELM have been held so far. The 13th meeting of ELM between India and China was held on 18th May, 2022 through video link. The GoI delegation was led by Sh. T.S. Mehra, Commissioner (B&B), DoWR, RD & GR and the Chinese delegation was led by Mr. Zhong Yong, Consul, Dept. of International Cooperation, Science and Technology, Ministry of Water Resources, People's Republic of China. Representatives of Ministry of External Affairs (MEA), Central Electricity Authority (CEA) and Central Water Commission (CWC) had also participated in the meeting.

India and China have also signed a Memorandum of Understanding (MoU) on Provision of Hydrological Information on Brahmaputra River in Flood Season in 2002 which was renewed in 2008, 2013 and 2018. Further, another MoU for the provision of hydrological information of the Langqen Zangbo/Sutlej River in Flood Season by China to India was signed in 2005 and was renewed in 2010 and 2015 for another five years. The hydrological information received from the Chinese side is utilized in the formulation of flood forecasts by the Central Water Commission. Renewal of MoU is under process through diplomatic channels. For the year 2022, hydrological data (water level, rainfall and discharge) for the river Brahmaputra (15.05.22 to 15.10.22) was received regularly twice a day. However, the hydrological data for river Sutlej (01.06.22 to 15.10.22) was not initiated for the flood season 2022.

5.6 INDIA - BHUTAN COOPERATION

With regard to Bhutan, the matter relating to problem of floods created by the rivers originating from Bhutan and coming to India was taken up with the Royal Government of Bhutan. A Joint Group of Experts (JGE) on flood management was accordingly constituted between India and Bhutan in 2004 to discuss and assess the probable causes and effects of the recurring floods and erosion in the southern foothills of Bhutan and adjoining plains in India and recommend to both Governments appropriate and mutually acceptable remedial measures. Nine meetings of JGE have been held so far. The first meeting of JGE was held in Bhutan from 1st - 5th November, 2004 and the 9th meeting was held during 7-8 January, 2020 at Punakha, Bhutan. A Joint Technical Team (JTT) on Flood Management between the two countries was constituted to assess the field situation and provide technical support to JGE on flood management. JTT held its first meeting in 2005 and the 6th meeting of JTT was held during 12th-13th September, 2019 at Jalpaiguri, India.

DoWR, RD&GR, Ministry of Jal Shakti is also operating a separate scheme for setting up of flood forecasting system on rivers common to India and Bhutan run by in Bhutan for the development of mutual cooperation between the two countries in the field of hydro-meteorological data collection and flood forecasting activities on rivers common to India and Bhutan.

The present network in Bhutan comprises 32 hydro-meteorological sites on common rivers flowing from Bhutan to India for the above work. The data received from these stations are utilised in India by the Central Water Commission for formulating flood forecasts. A Joint Expert Team (JET) consisting of officials from the Government of India (GoI) and the Royal Government of Bhutan (RGoB) meets twice a year to review the progress and other requirements of the scheme. Thirty six meetings of JET have been held so far. The 36th JET meeting was held at Darjeeling, India during 28th-29th September, 2022.

5.7 INDUS WATERS TREATY, 1960

Under the Indus Waters Treaty, 1960, India and Pakistan each have created a permanent post of Commissioner for Indus Waters. Each Commissioner is the representative of his Government and serves as a regular channel of communication on all matters relating to implementation of the Treaty. The two Commissioners together form the Permanent Indus Commission (PIC).

In fulfilment of the requirement of Indus Waters Treaty, the daily G&D data of hydrological sites on six basins, the Indus, the Jhelum, the Chenab, the Ravi, the Beas and the Sutlej of Indus system was sent to Pakistan every month. Irrigated cropped area statistics for the crop year 2021-22 for the Indus, the Jhelum & the Chenab basin had been compiled and sent to Pakistan as per the provisions of Indus Waters Treaty during November, 2022. Extra ordinary flood flow data for agreed sites on the rivers Ravi, Sutlej, Tawi and Chenab was also communicated by India to Pakistan as per the provisions of Indus Waters Treaty through telephone during 01st July to 10th October, 2022 to undertake advance flood relief measures in Pakistan.

Meeting of PIC : 117th meeting of the Permanent Indus Commission was held in Islamabad, Pakistan during 1st – 3rd March, 2022 and 118th meeting of PIC was held in New Delhi during 30th & 31st May, 2022.

Pong Dam Oustees : The 27th and 28th meetings of the High Powered Committee (HPC) under chairmanship of Secretary (DoWR, RD & GR) constituted for looking into the issues of rehabilitation & resettlement of Pong Dam Oustees were held on 07.07.2022 and 19.10.2022 respectively at New Delhi.

Shri Gajendra Singh Shekhawat , Hon'ble Union Minster of Jal Shakti addressed the august gathering at the 2nd Dushanbe Water Process conference held during 6th to 9th June, 2022

6 EXTERNAL ASSISTANCE IN WATER RESOURCES SECTOR

Shri Gajendra Singh Shekhawat, Hon'ble Union Minster of Jal Shakti at the 24th International Congress of International Commission for Irrigation & Drainage (ICID), held during 3rd to 10th October, 2022

6. EXTERNAL ASSISTANCE IN WATER RESOURCES SECTOR

The DoWR, RD & GR, Ministry of Jal Shakti assists the State Governments/ Union Territories in availing external assistance from different multilateral funding agencies to fill up the resource gap and state of the art technology for water resources development and management in the country. Presently, 10 Externally Aided Projects are being implemented in various States of the country with the assistance from different funding agencies, viz. the World Bank (3), Asian Development Bank (3), Japan International Cooperation Agency (JICA) (3) New Development Bank (NDB) (1).

The details including name of project, objective, project cost and loan amount etc. are as under :

Sl. No.	Name of State	Name Project	Project Objective	Effective date/ Closing date	Project cost: Loan amount (₹ in crore approx.)	Cumulative Disbursement (In ₹ crore approx.)
Projects funded by WORLD BANK						
1.	Andhra Pradesh	Andhra Pradesh Integrated Irrigation and Agriculture Transformation Project	To enhance agricultural productivity, profitability and climate resilience of small holder farmers in 1000 selected tanks stabilizing an ayacut of 2,26,552 Acres in 12 districts (except Guntur).	05.11.2018/ 31.10.2025	Cost-1,844.25 Loan-1,291.5	213
2.	Tamil Nadu	Tamil Nadu Irrigated Agriculture Modernization Project	To enhance productivity and climate/resilience of irrigated agriculture, improve water management and increase market opportunities for farmers and agro-entrepreneurs in selected sub-basin areas.	23.01.2018/ 02.06.2025	Cost-3,418.5 Loan-2,385	1,750.09

Sl. No.	Name of State	Name Project	Project Objective	Effective date/ Closing date	Project cost: Loan amount (₹ in crore approx.)	Cumulative Disbursement (In ₹ crore approx.)
3.	West Bengal	West Bengal Major Irrigation and Flood Management Project (WB-MIFMP)	To improve irrigation service delivery in the existing canal network of Damodar valley Project. Strengthen flood risk management.	11.08.2020/ 30.11.2025	Cost-3438.90 Loan-2407.23 (WB and AIIB)	721.26
Projects funded by ASIAN DEVELOPMENT BANK (ADB)						
4.	Karnataka	Karnataka integrated & Sustainable Water Resources Management Investment program-2	Modernization of Vijayanagar Channel System and taking up Integrated Water Resources Management (IWRM) components in K8 sub-basin of Krishna River Basin. Preparation of River Basin Profile for K-2, K-3 & K-4 sub-basin in Karnataka and River Basin Atlas for Ghataprabha and Malaprabha Sub-basin.	24.1.2020/ 31.3.2024	Cost-1073.89 Loan-751.87	120.61
5.	Madhya Pradesh	Madhya Pradesh Irrigation Efficiency Improvement Project	Develop 1,25,000 hectares of new, highly efficient micro irrigation network in Rajgarh. Design and construction of a highly efficient and productive new pressurized irrigation system with automated volumetric control for efficient, reliable and flexible water delivery services.	22.11.2018/ 31.03.2026	Cost-4425.80 Loan-3098.09	1536.90
6.	Odisha	Odisha Integrated Irrigation project Climate Resilient Agriculture (OIIPCRA)	To intensify and diversify agriculture production and enhance climate resilience.	16.12.2019/ 31.12.2025	Cost-1618/ Loan-1114	106.30

Sl. No.	Name of State	Name Project	Project Objective	Effective date/ Closing date	Project cost: Loan amount (₹ in crore approx.)	Cumulative Disbursement (In ₹ crore approx.)
Projects funded by JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)						
7.	Andhra Pradesh	Andhra Pradesh Irrigation & Livelihood Improvement Project Phase-2	To modernize/ renovate about 20 major and/ medium irrigation sub projects and restore 445 minor irrigation sub projects and improving livelihoods of farmers and other rural communities.	06.07.2018/ 31.07.2025	Cost-2000 Loan-1410.4	150
8.	Odisha	Rengali Irrigation Project Phase-2	Increase agriculture production by constructing irrigation systems (main canal and distribution systems), establishing Water users associations and promoting livelihood support activity through improved farming technique and other related activities; thereby, contributing to improve living standard of farmers and socio-economic development.	14.7.2015/ 14.7.2026	Cost-2255.20 Loan-1787.30	427.57
9.	Rajasthan	Rajasthan Water Sector Livelihood Improvement project	The objective of the project is to improve livelihoods of farmers as well as promote gender mainstreaming in agriculture and irrigation sector in the State of Rajasthan, by improving water use efficiency and agriculture productivity, through improvement of existing irrigation facilities and agriculture support services.	26.10.2017/ 26.10.2024	Cost-2348.8 Loan-1062.12 (Tranche-II)	446.79

Sl. No.	Name of State	Name Project	Project Objective	Effective date/ Closing date	Project cost: Loan amount (₹ in crore approx.)	Cumulative Disbursement (In ₹ crore approx.)
Projects funded by NEW DEVELOPMENT BANK (NDB)						
10.	Rajasthan	Rajasthan Water Sector Restructuring project Desert Area	The project envisages rehabilitation & modernization of Indira Gandhi Nahar Project (IGNP) system which will improve the availability of water in 1,81,618 Ha of CCA and will also reclaim 33,312 Ha of waterlogged area in the region.	31.03.2018/ 12.08.2025	Cost-2254.38 Loan-1578.07 (Tranche-II)	0

Hon'ble Union Minister of Jal Shakti along with Hon'ble Minister of State for Jal Shakti and other senior officers during 10th meeting of the empowered taskforce of Namami Gange on 08.12.2022 at NMCG, New Delhi

7 ORGANISATIONS AND INSTITUTIONS

Shri Gajendra Singh Shekhawat, Union Minister of Jal Shakti along with Shri Shivraj Singh Chouhan, Chief Minister of Madhya Pradesh and other dignitaries planting saplings at the 'Water Vision Park' during All India States Ministers' Conference on 'Water Vision@2047' held at Bhopal on 5th- 6th January, 2023.

7. ORGANISATIONS AND INSTITUTIONS

7.1 ATTACHED OFFICES

7.1.1 CENTRAL WATER COMMISSION (CWC)

CWC is headed by a Chairman with status of an ex-officio Secretary to the Government of India. The Commission has three technical wings, namely:

- Design and Research Wing
- Water Planning and Projects Wing
- River Management Wing

Each wing is headed by a Member with the status of an ex-officio Additional Secretary to the Government of India. Activities of the wings are carried out by 18 functional units at the headquarters, each headed by a Chief Engineer. The Commission also has 13 Regional Organizations, each headed by a Chief Engineer. The National Water Academy, Pune headed by a Chief Engineer is also a part of the Commission. The main activities of CWC may be summarized as follows:

- Flood Forecasting and Assistance to State Governments in Flood Management
- Collection and Analysis of Hydrological Data
- Techno-Economic Appraisal of Projects
- Monitoring of Selected Projects including those receiving central assistance
- Planning & Design of Projects
- Surveys, Investigations and preparation of Detailed Project Report (DPR)
- Studies on Environmental and Socio-Economic issues
- Studies Related to Irrigation Planning and Water Management
- Basin Planning and Management
- National Water Resources Assessment
- Assistance in Resolution of Inter-State Water Disputes
- Construction Equipment Planning
- Studies on Dam Safety
- Research and Development
- Standardization of Engineering Practices
- Operation of Reservoirs
- Training and Capacity Building
- International Co-operation in Water Sector
- Collection and Analysis of Coastal Data

MAJOR ACTIVITIES

i) Hydrological Observations:

There is a network of 1,730 hydro-meteorological observation stations (including 1,543 HO Stations and 187 exclusive meteorological stations) throughout the country in all major river basins. These are meant to observe water level (gauge), discharge, water quality, silt besides selected meteorological parameters including snow observations at key stations. The data collected from such sites is scrutinized, validated and published in the form of Water Year Book, Water Quality Year Book and Sediment Year Book, etc. The data so collected is utilized for planning and development of water resources projects, climate change studies, water availability studies, flood/ in flow forecasting, examination of international and inter-State issues, river morphological studies, in land water way development, reservoir siltation studies and research related activities, etc.

ii) Water Quality Monitoring:

Water quality is monitored at 764 key locations (652 on HO network and 112 Water Quality Sampling Stations) covering all the major river basins of India. In a three tier laboratory system, level- I laboratories located at field water quality monitoring stations for observing physical parameters such as temperature, colour, electrical conductivity /total dissolved solids; pH and dissolved oxygen of river water. There are 18 level–II laboratories located at selected Division Offices throughout India to analyze 25 physico-chemical characteristics and bacteriological parameters of water. 5 level-III laboratories are functioning at Coimbatore, Delhi, Guwahati, Hyderabad and Varanasi where 41 parameters including heavy metals/ toxic parameters and pesticides are analysed.

The National River Water Quality Laboratory, CWC, New Delhi is accredited with National Accreditation Board for Testing and Calibration Laboratories (NABL) in accordance with Standard ISO/ IEC17025:2017 in the discipline of chemical and biological testing since April, 2016. Apart from this, 18 more Water Quality Laboratories of CWC which are functioning under different Divisional Offices of CWC located at Hyderabad, Varanasi, Coimbatore, Guwahati, Bangalore, Agra, Kochi, Pune, Gandhinagar, Bhubaneswar, Nagpur, Lucknow, Jammu and Chennai, Raipur, Berhampore, Bhopal and Jalpaiguri have obtained NABL accreditation in chemical discipline.

iii) Survey and Investigation:

The survey and investigation of Kalez Khola HE Project (Sikkim) has been completed. The survey and investigations for three other projects namely, Tawang HEP (Mizoram), Katakhal Irrigation Project (Assam) and Barinium HEP (J&K) are continuing. Further, DEM preparation for irrigation projects in Sitamarhi Distt. Bihar is completed. A Joint Project Office for Sapta Kosi Sun Kosi Investigations (JPO-SKSKI) based in Biratnagar (Nepal) is carrying

out surveys and investigations for preparation of DPR of Sapta Kosi High Damand Sun Kosi Storage-cum-Diversion Project jointly with Nepal for mutual benefit of both the countries.

iv) Project Appraisal:

The Advisory Committee of DoWR, RD & GR considers the techno-economic viability of Medium and Major Irrigation, Multipurpose and Flood Control Project proposals. During 2022, total 25 MMI projects (13 Irrigation & 12 Flood control projects) have been considered and accepted by the Advisory Committee. The appraisal of civil aspects including appraisal of cost estimates for 02 hydroelectric project has been completed during the current year (up to December 2022). Other components of hydro-electric projects are appraised in Central Electricity Authority (CEA). 8 flood control projects have been accepted by the Technical Advisory Committee during the current year (up to December 2022).

The Techno-Economic Clearance (TEC) to these projects is accorded by CEA. During the year, 2022-23 (up to December, 2022), 02 projects have been accorded TEC by CEA. A web-enabled Project Appraisal Management System (e-PAMS) has been developed by CWC for online submission and techno-economic appraisal of DPRs of irrigation and multipurpose projects submitted by the State Governments. Presently, 30 irrigation projects and 33 flood projects have been submitted and are under appraisal on e-PAMS.

Further, Working Group report for "Reviewing the calculation of Benefit Cost Ratio and Procedure for Revised Cost Estimation (RCE) for Major & Medium Irrigation, Flood Control and Multipurpose Projects" was prepared in August, 2022.

v) Project Monitoring:

A three tier system of monitoring at Centre, State and Project level was entrusted to CWC. The main objective of monitoring was to ensure the achievement of physical and financial targets and achieve the targets of creation of irrigation potential. During 2021-22, 66 (43 major,18 medium and 5 ERM) on-going projects under PMKSY-AIBP and 9 major & medium projects under Special Package to Maharashtra and Punjab were monitored by CWC field units.

During 2022-23, 29 visits were under taken and 28 status reports were issued for projects under PMKSY-AIBP and 04 monitoring visits were under taken and 03 status reports were issued for projects under Special Package of Maharashtra and Punjab.

vi) Morphological Studies:

Every year floods cause damage to life and property in spite of existing flood control measures taken both by Central and State Governments. Consultancy works form morphological studies of 15 rivers (Ganga, Sharda, Rapti, Kosi, Bagmati, Yamuna, Brahmaputra, Subansiri, Pagladiya, Krishna, Tungbhadra, Mahananda, Mahanadi, Hoogli, & Tapti) by using remote sensing technology was awarded to

IITs/NITs under the Plan Scheme "R&D Programme in Water Sector".

The details and status of these studies are given below:-

Sl. No.	Institute	Name of Rivers	Status
1.	IIT Roorkee	Ganga, Sharda, Rapti	Completed
2.	IIT Delhi	Kosi, Bagmati, Yamuna	Under progress
3.	IIT Guwahati	Brahmaputra, Subansiri, Pagladiya	Completed
4.	IIT Madras	Krishna, Tungbhadra	Completed
5.	IIT Kharagpur	Mahananda, Mahanadi, Hooghly	Completed
6.	SVNIT Surat	Tapi	Completed

vii) Monitoring of Glacial lakes and water bodies:

CWC has increased the monitoring of glacial lakes/water body based on remote sensing from 477 to 902. The process of monitoring of GL/ WBs has been automated to large extent to reduce processing time. The open-source satellite images at 10 m resolution are being used. The SAR images are also being used for detecting lakes even in cloudy condition.

The monthly monitoring reports from June to October are being shared with Ministry of Jal Shakti, concerned field offices of CWC, concerned Himalayans States and other stakeholders.

viii) Coastal Management Information System (CMIS)

CWC has initiated development of "Coastal Management Information System (CMIS)" under the Plan Scheme DWRIS during the 12th Five Year Plan Period. The CMIS envisages setting up of sites along the coast of the maritime States/UTs of India for collecting data of relevant coastal processes. The specific objective of the work is to create an integrated data bank to tackle coastal engineering problems along the vulnerable stretches of Indian coast in a scientific manner keeping in view the long term perspective and challenges of climate change.

CWC started implementation of CMIS in Maritime States/UTs through signing of a tripartite Memorandum of Understanding (MoU) with CWC as 'Project Implementer', the expert agency as 'Project Executor' and the concerned State/ UT Government as 'Project Facilitator'. Data related to wave, tide, current, wind, coastal sediment, beach profile, bathymetry, riverine data, shoreline change are collected under CMIS.

Establishment of three coastal data collection sites (Devanari-Tamil Nadu, Karaikal-Puducherry and Ponnani-Kerala) has been completed under this project and sites were taken over by CWC on 31.05.2021. Establishment of five coastal data collection sites (Satpati-Maharashtra, Nanidanti Motidanti-Gujarat) (Tarkhali-Maharashtra, Benaulium-Goa, Baga-Goa) is under progress.

ix) Hydrological Studies:

The success of a project is largely governed by the hydrological inputs. The Hydrological Studies

Organization (HSO), a specialized unit under Design and Research (D&R) Wing of CWC, carries out hydrological studies in respect of the water resources projects in the country. The inputs in Detailed Project Report (DPR) or Pre-Feasibility (PFR) stage are made available in the form of:

- Water availability/yield studies.
- Design flood estimation.
- Sedimentation studies.
- Diversion flood studies.

The country has been divided into 7 zones and further into 26 hydro-meteorologically homogeneous sub-zones and flood estimation models are developed for each subzone to compute the design flood in un-gauged catchments. So far, flood estimation reports covering 24 sub-zones have been published. During the year 2022-23, technical examinations of hydrological aspects of DPRs in respect of 76 projects have been carried out in CWC. Out of this, 44 projects have been cleared and comments were issued for 12 projects. In addition, CWC has also carried out Design Flood Review Studies of the 20 projects under DRIP in the following States:

Sl. No.	Name of the State	No of Projects
1	Andhra Pradesh	1
2	Karnataka	2
3	Kerala	1
4	Madhya Pradesh	4
5	Tamil Nadu	9
6	Telangana	2
7	West Bengal	1

Some of the major works carried out during this period are:

- Design Flood study of Subernrekha-Mahanadi link carried out on consultancy basis.
- Comprehensive Design Flood Review of Polavaram was also carried out during this period.
- Water availability study of Mahananda Barrage.

Technical Assistance / Advice tendered

HSO has provided secretariat assistance to various technical/expert committees for undertaking special studies on various aspects related to water resources development and management. Some of the important contributions during the year 2022-23 are as under:

- Consultancy work to study the issue of floods and siltation in river Ganga due to Farraka barrage (under NHP): The consultancy work was awarded to RMSI Pvt Ltd. The Draft Final Report on the consultancy work has been accepted by the Committee constituted by MoJS under the chairmanship of Chairman, CWC. The Committee has accepted the Final Report in the 9th meeting of the Committee held on 15.12.2022.
- Consultancy services of physical based mathematical modelling for estimation of sediment rate and sediment transport in 7 river basins of India (under NHP): Awarded to M/s Haskoning DHV Consulting

Pvt. Ltd with effective date 16.11.2020 (18+12 months). Final report of the project has been accepted and approved by the TARC on 30.09.2022. Phase-II of the project has been started from 16.11.2022.

x) Planning and Design of Water Resources Projects

CWC is actively associated with design of majority of the mega water resources projects in India and neighboring countries, viz., Nepal and Bhutan by way of design consultancy or in the technical appraisal of the projects. At present CWC is providing design consultancy to 92 projects. Out of this, 26 projects (including 3 from neighboring countries) are at construction stage, 34 projects (including 3 from neighboring countries) are at DPR stage and 32 projects involve special problems.

xi) National Committee on Seismic Design Parameters:-

The National Committee on Seismic Design Parameters (NCSDP) was constituted by MoWR Order dated 21st October, 1991 with the objective to recommend the seismic design parameters for the proposals received from the dam owners. Member (D&R), CWC is the chairman of the committee with 12 other experts from various engineering disciplines from different technical institutions and Government organizations as its members. Director (FE & SA), CWC is the member Secretary of NCSDP. Site specific study report of 28 projects has been examined and observations issued.

xii) National Register of Large Dams:

Dam Safety Organisation (DSO), CWC compiles and maintains the register of large dams across the country in the form of National Register of Large Dams (NRLD) based on information provided by State Govts./ PSUs. As per the latest information compiled under the NRLD-2019 maintained by CWC, there are 5,745 large dams in the country as on June, 2019. Out of these, 5,334 large dams have been completed and 411 large dams are under construction. The NRLD is available on CWC's website. NRLD-2019 was released by Chairman, CWC on 27th June, 2019. Now, NDSA is in the process of updating the NRLD.

xiii) Technical Examination of Instrumentation aspects of the projects:

Detailed Project Report (DPR) / construction drawings of 5 river valley projects in various States/ countries namely Himachal Pradesh, Jammu & Kashmir, Andhra Pradesh, Nepal and Rajasthan have been examined, out of which 4 projects have been cleared with respect to instrumentation aspects and observations for remaining one project has been sent to the project authorities for compliance.

Other Seismic works:

- Work related to technical evaluation and critical examination of web based tool Seismic Hazard Assessment Information System (SHAISYS) being developed by IIT Roorkee and CWPRS Pune under DRIP.

Meetings to review the progress and to discuss the way ahead were held with the teams involved from two organisations during the year on 4th of August, 2022 and 13th of September, 2022 respectively under the chairmanship of Member (D&R), CWC.

- Works related to vetting/ appraisal of manuals on Software Requirement Specifications (SRS) of SHAISYS with Software Management Directorate.

Establishment of International Centre of Excellence:

Dam Rehabilitation and Improvement Project (DRIP) Phase-II and Phase-III provides for establishment of two Centres of Excellence (CoE) for adapting the advances in dam engineering across the world and developing technologies relevant to Indian conditions. These centers shall have state of the art facilities to provide leadership, best practices, research, support and training in dam engineering. The services of these centers of excellence could be utilized by the dam fraternity in India to get consultancy for addressing their dam safety issues as well as training of dam engineers.

CoEs are planned to be established at IIT Roorkee and IISc Bangalore. Discussions in this regard with IIT Roorkee have been concluded. Approval of finalized draft proposal as well as Memorandum of Agreement (MoA) by the Ministry is under process.

xiv) 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. Objective of the programme 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 4 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 and 2 UTs. The entire process including the preparation of IMPs, Detailed Project Report (DPRs), detailed designs and final implementation/ project execution is expected to be completed by Phase-4. Implementation of the project would lie with the concerned States who would have an option to either fund it from their own resources or they can avail loan facility from ADB or any

other financial institutions.

During Feb-Aug, 2022, ADB fielded a consultation mission for SIMP in India during which discussions were held with Secretary (DoWR, RD & GR), Chairman (CWC), WRDs of concerned Batch-1 States, etc. Thereupon, 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 work plan 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. First such workshop was successfully convened for the Vani Vilasa Sagara project (Karnataka) during 05-16 Dec, 2022 with about 40 participants drawn from WRD of each of the Batch-1 States, along with officers from related departments viz. Agriculture, Ground Water, CAD, Revenue, etc. Officers from CWC HQ and Regional offices are also being nominated to attend the workshop.

xv) Reservoir Sedimentation Assessment Studies:

CWC has taken up sedimentation assessment studies of reservoirs located all over the country using satellite remote sensing technique. Under the scheme during 2022-23, the study of 40 reservoirs has been entrusted to M/s Geo Marine Solutions Pvt. Ltd. Mangalore, Karnataka.

CWC has conducted in-house sedimentation assessment study of one reservoir using remote sensing technologies. 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 it is possible to get images of the reservoirs near FRL during monsoon season as well; this is relatively difficult with optical images for full reservoir during monsoon season when it is cloudy).

xvi) Monitoring of Major Reservoir Storage:

CWC is monitoring live storage status of reservoirs of the country on weekly basis and issues weekly bulletin on every Thursday. 143 reservoirs are being monitored having total live storage capacity of 177.46 BCM which is about 68.83% of the live storage capacity of 257.81 BCM 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 PMO, NITI Aayog, MoJS, MOP, MOA&FW,

IMD, and the Water Resources Departments of concerned States and is also uploaded on CWC's 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.

xvii) Participation in 24th Congress and 73rd International Executive Council (IEC) of ICID:

The 24th Congress and 73rd International Executive Council (IEC) of International Commission for 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. Additionally, INCID promoted the next event (25th Congress of ICID and 75th IEC) proposed to be held at Visakhapatnam, Andhra Pradesh during 1-8 Nov., 2023.

xviii) Central Water Commission/ National Water Academy :

CWC / National Water Academy conducted various trainings / workshops in CWC headquarter and its field offices. In addition to above, some officers participated in trainings, workshops and conferences organized by various national and international organizations during 01.04.2022 to 31.12.2022.

7.1.2 CENTRAL SOIL AND MATERIAL RESEARCH STATION (CSMRS)

The Central Soil and Materials Research Station (CSMRS), New Delhi, an attached office of DoWR, RD & GR, was established in 1954. CSMRS is an ISO 9001:2015 certified organization and 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 and quality assurance of construction for various river valley projects. The sphere of activity of CSMRS comprises the following key areas:

- The soil discipline deals with soil characterization, rock fill material characterization and geosynthetics material characterization. This discipline conducts foundation investigations for assessing the competency of the foundation strata for the construction of 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 rocks, geophysical investigations and geotechnical instrumentation. This discipline conducts laboratory investigation of intact rock, in-situ tests for determination of shear strength properties, deformability 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.

CSMRS undertakes consultancy works primarily pertaining to the projects in the area of water resources sector, in the domain of investigation with reference to laboratory and in-situ testing for foundations on soils and rocks and investigations for the construction materials such as concrete (and its constituents), soil, geo synthetics, rock fill. The consultancy work comprises suggestions, based on the recommended parameters of the investigated materials (required for the design of structures) and remedial measures to be adopted for the problems encountered in the project.

INVESTIGATIONS FOR PROJECTS

Thirty three projects, including three abroad, four in North- East region of India, and three interlinking projects, were investigated. The investigations comprised field and laboratory investigations in the areas of soil, rock, rock fill, geosynthetics, concrete and its constituents. The investigated projects are as under:

North Eastern Project

- Dibang Multipurpose Project, Arunachal Pradesh
- Katakhal Irrigation Project, Assam
- Haora Dam Project, Tripura
- Champai Cherra Dam Project, Tripura

Interlinking Projects

- Damanganga-Vaitarna-Godavari Intrastate Link Project, Maharashtra
- Ken-Betwa Link Canal Project, Madhya Pradesh (NWDA)

- Sone Dam STG Link Canal Project, Bihar

National Projects:

- Adi Badri (Yamuna Nagar) Haryana
- Bastawa Mata and Indroka Dam Projects, Jodhpur, Rajasthan
- Bhaunrat Dam Project, UP
- Bhagpur Lift Irrigation Scheme, Maharashtra
- Barinium Hydroelectric Project, Jammu & Kashmir
- Isarda Dam Tonk, Rajasthan
- Kanhar Irrigation Project, U.P
- Khetri Tailing Dam, Khetri, Rajasthan
- Nathpa Jhakri H E Project, Himachal Pradesh (SJVN)
- National Thermal Power Corporation (NTPC), Kahalgaon, Bhagalpur, Bihar
- North Koel Project, Jharkhand
- Polavaram Project, Andhra Pradesh
- Purthi Hydroelectric Project, Himachal Pradesh
- Reoli Dugli Hydroelectric Project, Himachal Pradesh
- Rihand Dam Project, U.P
- Saraswati Reservoir Scheme, Haryana
- Sardar Sarovar Project, Gujarat
- Subarnarekha Multipurpose Project, Jharkhand
- Sulwade Jamphal Lift Irrigation Scheme, Maharashtra
- Tehri Pump Storage Project, Uttarakhand
- Vishnugad Pipalkoti HE Project, Uttarakhand
- Vyasi HE Project, Uttarakhand

Uniaxial Jacking Deformation Test

Direct Shear Test

Collection of Soil Samples

Core Drilling

Drilling for Rock Bolt at TRT

HRT Rock Bolt Testing

Important achievements of CMSRS during 2022-23:

Success Indicators	Achievements (number)
Technical reports brought out / published	63
Publication of Research Papers	48
Evaluation of Detailed Project Reports and Technical comments on compliance to DPR	10 26
Training programme organized	08

SELF- SPONSORED RESEARCH SCHEMES:

The self-sponsored research schemes currently in progress are as follows:

- Effect of molding water and compaction densities on the permeability characteristics of soils
- Effect of molding water content on the shear strength characteristics of soils
- Effect of molding water on swelling pressure of expansive soils
- Study on swelling characteristics of soft rocks
- Effect of fines on behaviour of rock fill material

7.2 SUBORDINATE OFFICES

7.2.1 CENTRAL GROUND WATER BOARD (CGWB)

Most of the activities of the CGWB are undertaken as a part of the central sector scheme titled 'Ground Water Management and Regulation (GWMR) scheme'. In addition to above, CGWB is an implementing agency of National Hydrology Project (NHP). CGWB also implements specific components of other schemes of DoWR, RD & GR like i) RGNGWTRI component of HRD and Capacity Building scheme ii) Ground Water component of the PMKSY – HKKP scheme iii) supporting implementation of Atal Bhujal Yojana.

Major activities of the Board include: i) aquifer mapping and preparation of management plans as a part of the NAQUIM programme; ii) exploratory drilling including lithology preparation and pumping tests; iii) monitoring of ground water levels; iv) monitoring of ground water quality; v) implementation of demonstrative schemes for artificial recharge and rainwater harvesting; vi) periodic assessment of ground water resources of the country, jointly with the concerned State Government agencies; vii) geophysical studies; viii) capacity

building activities for personnel of its own as well as Central/State Government organizations; ix) outreach activities for dissemination of usable information; xi) providing technical assistance to States / UTs; x) regulation and control of ground water development and management in the country under CGWA; xi) providing technical assistance for participatory ground water management as a part of Atal Bhujal Yojana; xii) implementation of the ground water component of PMKSY-HKKP scheme for promoting ground water based irrigation etc.

National Aquifer Mapping and Management Program (NAQUIM):

CGWB is implementing National Aquifer Mapping and Management program (NAQUIM), which envisages mapping of aquifers (water bearing formations), their characterization and development of aquifer management plans to facilitate sustainable management of ground water resources. NAQUIM was initiated in 2012 as a part of the GWMR plan scheme with the objectives to delineate and characterize the aquifers and develop plans for ground water management. Out of 32 lakh sq km of the entire country, a mappable area of 25 lakh sq km has been identified to be covered under this programme. Aquifer maps and management plans have been prepared for an area of 24.57 lakh sq km spread over various parts of the country. The remaining area is targeted to be covered by March 2023. NAQUIM outputs are shared with various stakeholders including the District authorities.

Sharing of NAQUIM outputs and report with DM, Rayagada District, Odisha on 30.11.2022

High resolution aquifer mapping and management in Arid areas of India:

CGWB has initiated 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 is aimed at establishing aquifer ge-

ometry, demarcation of de-saturated and saturated aquifers, identification of paleo channels network, identification of potential sites for ground water withdrawal and identification of sites for water conservation structures etc. Under phase- I of the project, work has been initiated for an area of 1 lakh sq km covering parts of Rajasthan, Gujarat and Haryana. The study is being carried out in collaboration with CSIR-NGRI.

Ground water level monitoring:

Ground water level monitoring is one of the key activities of CGWB. The primary objective of ground water monitoring is to record the response of various natural and anthropogenic stresses on the groundwater regime which impacts the recharge and discharge parameters. At present, CGWB has a network of nearly 23,000 ground water observation wells throughout the country. The ground water levels are measured four times a year during the months of January, March/ April/ May, August and November.

Ground water quality studies:

CGWB has 16 regional chemical laboratories to carry out chemical analysis of water samples. These chemical laboratories are well equipped with sophisticated instruments like ICP-MS, Atomic Absorption Spectrophotometer (AAS) etc. Ground water sampling for quality monitoring is done once a year during the pre-monsoon period. In addition to this ground water samples are also collected and analysed as a part of other scientific studies. During 2022, CGWB, through its in-house laboratories, analysed 37,950 samples for basic constituents and heavy metals.

Study of Uranium in Ground Water:

CGWB has taken up sampling and analysis of ground water samples for uranium content across the country. So far nearly 46,000 groundwater samples have been collected and analysed by CGWB.

Geophysical Studies:

Geophysical studies are non-invasive techniques and provide indirect information about disposition and characteristics of aquifers. CGWB has in-house facility for various geophysical studies. Outputs of geophysical studies are used mostly in aquifer mapping studies and other case specific investigations. During 2022, CGWB through its field offices carried out 1,261 Vertical Electrical Sounding (VES), 1,534 Transient Electromagnetic (TEM) studies and 35 borehole logging.

Exploratory Drilling:

Ground water exploration is one of the core activities of CGWB. Drilling aided ground water exploration provides direct information about disposition and characteristics of the aquifers. Every year around 650 wells are drilled by CGWB for ground water exploration through in-house resources. CGWB has a fleet of 78 operational drilling rigs and has capability to construct wells in various types of terrain in the country. In view of enhanced requirements of ground water exploration under the NAQUIM programme, CGWB has also taken up exploratory drilling through outsourcing. After conducting necessary tests and chemical quality assessment, successful wells are handed over to the State user agencies. During 2022, CGWB constructed 551 wells including EW, OW and Piezometers.

Aquifer Rejuvenation and Water Conservation:

- **Artificial Recharge studies in water stressed areas of Rajasthan & Haryana:** During 2022-23, CGWB has taken up the project on 'Groundwater augmentation through artificial recharge in certain water stressed areas of Rajasthan and Haryana' under GWM&R scheme with an estimated cost of Rs 170 crore. Work is being taken up in collaboration with WAPCOS Ltd.
- **Master Plan for artificial Recharge to Groundwater:** The implementation of Master Plan for Artificial Recharge-2020 is being taken up in 36 districts in 36 States/ UTs. State Level Nodal Agencies has been identified in all the 36 States/ UTs for preparing Master Plan for Artificial Recharge-2025 and implementation of artificial recharge projects.

Assessment of Dynamic Ground Water Resources of India:

Periodic assessment of dynamic ground water resources is done jointly by CGWB and the respective State Governments. 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 the entire country. Ground water resource assessment for the base year 2022 has been done using IN-GRES software. As per the recent assessment of dynamic ground water resources (2022) carried out jointly by CGWB and the State Governments, out of the 7,089 assessment units, 1,006 (14%) units are categorized as 'over-exploited', 260 (4%) as 'critical', 885 (12%) as 'semi-critical' and the remaining 4,780 (67%) are categorized as 'safe'.

Azadi Ka Amrit Mahotsav:

Public Interaction Programs (PIPs) were organised by CGWB under Azadi Ka Amrit Mahotsav. During January to December 2022, 318 such programmes were conducted in which nearly 15,000 people participated. The participants were sensitized on various aspects of water conservation, ground water management and findings of the NAQUIM study.

Public Interaction Programs under Azadi Ka Amrit Mahotsav, at Visakha Valley School Visakhapatnam, Andhra Pradesh on 01.07.2022

Central Ground Water Authority: The Central Ground Water Authority (CGWA) has been entrusted with the responsibility of regulating and controlling ground water development and management in the country. The functions/ responsibilities of CGWA include:

- Exercise of powers under section 5 of the Environment (Protection) Act, 1986 for issuing directions and taking such measures in respect of all the matters referred to in sub-section (2) of section 3 of the said Act.
- Exercise of penal provisions contained in sections 15 to 21 of the said Act.
- To regulate and control, manage and develop ground water in the country and to issue necessary regulatory directions for the purpose.
- Exercise of powers under section 4 of the Environment (Protection) Act, 1986 for the appointment of officers.

Important activities of CGWA during 2022 are given below:

As per the recommendation of the committee for operationalization of notified guidelines dated 24.09.2020 constituted by the Ministry of Jal Shakti, the amendment in guidelines has been proposed and it is under consideration of the Ministry of Jal Shakti.

Processing of Applications for Grant/ Renewal of No Objection Certificate (NOC) for Ground Water Withdrawal: CGWA continued to evaluate applications received from industries/ infrastructure units / mining projects for grant of NOC for groundwater withdrawal as per provisions of the notified guidelines. 13,897 applications were received during January to December 2022 against which 3,067 new & renew NOCs and 8,081 exemption NOCs were issues; 1,307 applications were rejected and 718 NOCs approved.

Self-inspection Module for Monitoring of Compliance of Conditions Stipulated in the NOC: A self-inspection module has been developed and has been made available in the NOCAP portal for monitoring of compliance conditions of the NOC. The users can fill in the compliance status of conditions specified in the NOC and upload geo-tagged photos on the portal.

On-Site Inspection by CGWB: On-site inspections were carried out by the regional offices of CGWB to check the compliance of NOCs granted by CGWA before recommending the renewal applications to CGWA, New Delhi. Necessary show-cause notices were issued to the project proponents who have not complied with the conditions of the NOC issued by CGWA.

Rajiv Gandhi National Ground Water Training and Research Institute (RGNGWTRI):

RGNGWTRI is the only institute of its kind dedicated to training and research in the field of ground water. Since 2012 (12^{th} Plan), RGNGWTRI has been implementing a three-tier (Tier-I: National Level, Tier-II: State/District, Tier-III: Block Level) training programme. As a part of the three-tiered training programme being implemented, 165 trainings (Tier-I: 68, Tier-II: 30 & Tier-III: 67) were conducted during January to December 2022. 9,576

participants including ground water professionals as well as users at grassroots level participated in the programmes.

Sl. No.	Training	Period January - December 2022		
		Training Conducted	No. of Participants	No. of Women Participants
1	Tier-I	68	1,427	523
2	Tier-II	30	912	425
3	Tier-III	67	7,237	2,685
Total		**165**	**9,576**	**3,633**

7.2.2 CENTRAL WATER AND POWER RESEARCH STATION (CWPRS)

CWPRS has been working and providing specialized services through physical and mathematical model studies, field and laboratory investigations in river training and flood control, hydraulic structures, ports and harbours, coastal protection, foundation engineering, construction materials, pumps and turbines, ship hydrodynamics, hydraulic design of bridges, environmental studies, earth sciences, cooling water intakes for thermal and nuclear power plants.

AREAS OF EXPERTISE

The research activities at CWPRS can be grouped into seven major disciplines as listed below:

i) **River Engineering:** Major studies related to river training and bank protection works, hydraulic design of barrages and bridges, measuring water and sediment discharge etc., are carried out under river engineering studies. Significant studies during the period include:

- Mathematical model studies to safely pass flood in river Ghaggar in the States of Haryana and Punjab.
- Hydraulic model studies for bank protection of river Ganga near Bhagalpur, Bihar.
- Hydraulic model study to activate the central natural channel at 4 km downstream to 14 km downstream of Kosi barrage.
- Mathematical model studies for flood protection works to various Nallas in Satluj river basin under Pooh of Kinnaur Dist. HP.
- Mathematical model studies to assess hydraulic flow parameters in river Pawana in the vicinity of PCMC for proposed river front development and river rejuvenation.
- Numerical model studies for evolving flood protection measures for river Vashishti near Chiplun Town, Maharashtra.
- Hydraulic model studies for restoration of damaged components of Tapovan-Vishnugad Barrage, Uttarakhand.

ii) **River and Reservoir Systems Modelling:** Important studies related to flood estimation and forecast, reservoir sedimentation and water quality using mathematical models

and field surveys are carried out under this discipline. Few significant studies during the period include:

- Dam break analysis and flood zone mapping for emergency action plannning of Nathpa Dam, Kinnaur, Himachal Pradesh for M/S SJVNL.
- Dam beak analysis and inputs for emergency action planning for Kurumurthyraya reservoir, PRLIS, Telangana.

iii) **Reservoir and Appurtenant Structures:** Hydraulic design for spillway and energy dissipation systems, reservoir sedimentation and flushing, water conductor system studies are carried out using physical and mathematical models. Sedimentation in reservoirs is also assessed through remote sensing. Significant studies carried out under this discipline include:

- Studies for optimization of the layout of approach channel for spillway of Polavaram Irrigation Project, Andhra Pradesh.
- Studies for auxiliary spillway with downstream guide wall for Indira Sagar Dam, Madhya Pradesh.
- Studies for discharging capacity and energy dissipation arrangement of spillway of Kwar H.E. Project, J&K.
- Studies on modified energy dissipation arrangement for spillway of Punatsangchhu-I H.E. Project, Bhutan.
- Studies on modified energy dissipation arrangement for spillway of Devsari H.E. Project, Uttarakhand.
- Studies for discharging capacity and energy dissipation arrangement of spillway of Lakhwar H.E.Project, Uttarakhand.
- Studies for Syphon pipeline to verify its discharging capacity and safe functioning of Syphon pipeline of Koparde Lift irrigation scheme of Tarali irrigation project, Maharashtra.
- Hydraulic model studies for desilting basin of Teesta-VI H.E. Project, Sikkim.

iv) **Coastal and Offshore Engineering:** Major significant projects related to optimization of length and alignment of breakwaters, jetties, berths, approach channel, turning circle etc. are undertaken for development of various ports and harbors under this discipline. Major studies carried out are indicated below:

- Studies for integrated waterway and Marina development at Nethrawati-Gurupur river, Karnataka.
- Studies for hydrodynamics, sedimentation for development of ship jetty at Tune Tekra, Deendayal Port Trust, Kandla, Gujarat.
- Physical model studies for wave tranquillity for development of port infrastructure at Kamorta bay, Andaman-Lakshadweep harbour works.
- Studies for wave tranquility to assess the effect of development

of Vizhinjam seaport (VISL) on fishing harbour, Kerala.

- Studies for the proposed development of fishing harbour at Alvedande, Karnataka.
- Hydraulic model studies for assessing spillway discharging capacity under wave conditions for Kalpasar Dam, Gujarat.
- Studies for wave hind casting and storm surge analysis for proposed development of multipurpose harbor at Maple, Karnataka (DPR-5).
- Wave tranquility studies for development of berth at Kamarajar port, TN.
- Studies for wave tranquility and shoreline changes for the development of RO-RO jetty at Revdanda, Tal. Alibag, Dist. Raigad, Maharashtra.
- Wave transformation studies to assess the wave conditions at fourth container terminal (Phase-II), JN Port.
- Mathematical model studies for development of new anchorages in Mumbai harbour.
- Field data collection to assess the feasibility of resumption of lighter age at existing Tuna barrage jetty at Nakti Creek, Kandla, Gujarat.
- Field data collection for spring and neap tide under CMIS at Nani Danti-Moti Danti, Gujarat and Satpati, Palghar MH.
- Field data collection and analysis for hydrodynamic and sedimentation studies at Mulgaon, Shrivardhan, Maharashtra.
- Field data collection and mathematical studies to assess tidal hydrodynamics and sedimentation pattern for the fishing harbor at Astaranga, Puri, Odisha.
- Field data collection and mathematical model studies for hydrodynamics for development of jetty at Morbi, Gujarat for M/s Dev Salts Pvt. Ltd.

v) Foundation and Structures: Laboratory and field test studies are carried out under this discipline to determine the soil, rock and concrete properties. Mostly the studies undertaken by this discipline pertain to dams, power plants etc. Also, geotechnical studies by numerical modeling are conducted to assess safety and seepage aspects of earthen dams, tailings dams, ash dykes, barrages, hill slopes, embankments and coastal structures such as breakwaters, navigation channels, shore slopes, etc. Major studies include:

- Studies for verification and improvement in structural design by 3D stress analysis using FEM of penstock bifurcation, Arun-3 HEP, Nepal, SJVN Limited, Shimla, Himachal Pradesh.
- Geotechnical studies for zoned earthen dams of Mallannasagar reservoir of Kaleshwaram lift irrigation project, Telangana and Kurumurthiraya reservoir or Palamuru Rangareddy Lift

Irrigation scheme (PRLIS), Telangana.

vi) **Applied Earth Sciences:** Important studies related to seismic surveillance of river-valley projects, controlled blasting studies for civil engineering projects, detection of seepage and engineering properties of structures using nuclear logging and geophysical methods are carried out for various dams, canals, nuclear and thermal power plants. Major studies carried out are indicated below:

- Micro earthquake studies for Kuri-Gongri HE Project, Bhutan.
- Estimation of site-specific seismic design parameters for Kirthai II HE Project, Jammu & Kashmir.
- Estimation of site-specific seismic design parameters for Kondhane Dam Project, Maharashtra.
- Estimation of site-specific seismic design parameters for Saraswati river rejuvenation and its heritage development project, Haryana.
- Estimation of site-specific seismic design parameters for Sillahala Project, Tamil Nadu.
- Assessment of in-situ quality of concrete of Rengali power house structure by non-destructive testing methods, Rengali, OHPC Ltd., Odisha.
- Monitoring of blast vibration during dismantling of old Anicut at Jobra Mahanadi Barrage, Odisha.
- Vibration studies for Rengali HE Project, Odisha.

vii) **Instrumentation, Calibration and Testing Facilities:** Important studies related to installation and monitoring of instruments in dams, hydro electric power plants etc., calibration of instruments and their testing are being carried out at CWPRS. Hydraulic instrumentation is being used for data acquisition on physical hydraulic models. Field data collection is being carried out for coastal parameters like water level, currents, wave-height etc. Services of dam instrumentation are provided for prototype. Few important studies include:

- Bathymetry survey of reservoir pond at Ordinance Factory Khamaria, Jabalpur, M.P.
- Bathymetry survey for Rihand dam, Sonbhadra, Utter Pradesh.
- Bathymetry survey of Bakreswar dam at Birbhum, West Bangal.
- Assessment of dam stability by dam instrumentation being carried out for Polavaram dam.
- Dam instrumentation for 17 dams in Tamil Nadu under DRIP.
- Surge analysis for Ner lift irrigation scheme I & II under Jihe Katapur LIS, District- Satara, Maharashtra.
- Performance testing of high head twin centrifugal pump.
- Measurement of water discharge through penstock of Koyna Hydro Electric Power Project [Stage I – (4 × 70) = 280MW and Stage II – (4 × 80) = 320MW].

- Testing of fire water submersible pump of 400 m^3/hr. at 150 m head capacity driven by diesel engine at CWPRS Pune.
- Measurement of water discharge through penstock of Koyna Hydro Electric Power Project [Stage IV – (4 × 250) = 1,000 MW].
- National Workshop on "Advances in Design, Installation and Operation of Large Pumps and Turbines".
- Measurement of water discharge through penstock of Koyna Hydro Electric Power Project [Stage III – (4 × 80) = 320 MW].
- Head loss test/measurement in the water conductor system of Bairasiul Power Station, Chamba.

7.2.3 GANGA FLOOD CONTROL COMMISSION (GFCC)

Ganga Flood Control Commission (GFCC) was established in 1972 with its headquarter at Patna. The Commission is headed by a chairman with two full time members. The representatives of concerned central ministries and departments as well as the Engineer-in-Chief / Chief Engineers of the Ganga basin States are part time members/permanent invitees.

The Commission has been assigned the following tasks:

- Preparation and updation of comprehensive plans for flood management of the river systems in the Ganga basin.
- Phasing / sequencing of programme of implementation of works included in the basin-wise plans.
- Providing technical guidance to the Ganga basin States, namely, West Bengal, Bihar, Jharkhand, Uttar Pradesh, Uttarakhand, Chhattisgarh, Madhya Pradesh, Delhi, Haryana, Himachal Pradesh and Rajasthan on flood management.
- According techno-economic appraisal and clearance to flood management schemes of the Ganga basin States with an estimated cost of more than Rs. 12.5 crore and up to Rs. 25 crore, except for schemes of the States of Haryana, Uttar Pradesh and Delhi on the river Yamuna in the reach from Tajewala to Okhla Barrage. The schemes with estimated cost of more than Rs. 25 crore are appraised by GFCC and their techno-economic clearance is accorded by TAC-MoWR.
- Monitoring the execution of the important flood management schemes, particularly those receiving central assistance under Flood Management and Border Area Programme or being executed under Central Sector.
- Assessment of adequacy of the existing water ways under the road and rail bridges and additional waterways required to be provided for reducing the drainage congestion to reasonable limits.
- Performance evaluation of major flood management measures executed by the States including the inter-State flood management schemes.

Achievements during 2022-23:

i) Maintenance of Flood Protection Works of Kosi and Gandak Projects:

The flood protection works on river Kosi and Gandak are being carried out based on site inspection after every flood season and on recommendations of Kosi High Level Committee (KHLC) and Gandak High Level Standing Committee (GHLSC) respectively. The re-imbursement of expenditure incurred on maintenance of the flood protection works executed in Nepal portion is being made by Government of India after utilization certificate of the same is received from the State Government of Bihar for Kosi and Government of Uttar Pradesh for Gandak, respectively. KHLC/GHLSC conducted annual inspection of the flood protection works on rivers Kosi and Gandak during 10-13 November, 2022 and 22-24 November, 2022, respectively, held meetings and finalized the recommendations for flood protection works on these rivers to be taken up and completed in time bound manner before the flood season 2023.

ii) Updating of comprehensive Plan for Flood Management:

Comprehensive plans for flood management for all the 23 river systems of the Ganga basin were prepared between 1975 and 1990. The work of updating these comprehensive plans was taken up due to changes, additional information/data on hydro-meteorology and morphology in the basin in the subsequent years. All comprehensive plans, except comprehensive plan for flood management for Kosi river system, have been updated once. Second updating of 6 plans has also been completed. During the year 2020-21, a pilot project proposal on the "preparation of comprehensive plan of flood management for the Kosi river system using state of the art technology" was formulated and a sub-committee on "preparation of comprehensive plan using state of the art technology" was constituted involving officers from GFCC, State Govt. of Bihar and other subject experts. The proposal was submitted and is under active consideration of DoWR, RD &GR. In the recent 53rd GFCC meeting held on 13th December 2022, it was stressed on development of integrated comprehensive plan for flood management of a river sub-basin as a whole, considering the inter-State/trans boundary aspects. The concerned States were requested to supply the data available under their domain.

iii) Assessment of the adequacy of existing waterways under road and rail bridges :

Main stem Ganga was divided into 5 reaches a) Out fall to Sahebganj, b) Sahebganj to Buxar, c) Buxar to Haridwar, d) Haridwar to Rudrapryag, e) Rudraprayag to Badrinath & Rudrapryag to Kedarnath. Out of 5 selected reaches, the assessment study is in progress for 3 reaches. Survey and data collection work for Haridwar to Rudraprayag has been completed. Assessment study report for Haridwar to Rudraprayag is in progress and survey for Rudraprayag

to Badrinath & Rudraprayag to Kedarnath is in process.

iv) **Techno-economic Appraisal of Flood Management Schemes:**

Thirty five flood management schemes were received in GFCC from Ganga Basin States during April 2022 to December 2022 including spill over projects from previous years. One scheme was returned to State Govt. and techno-economic appraisal of one scheme was cleared. Seven schemes are pending with State Governments for compliance. 26 schemes are under examination in GFCC.

7.2.4 BANSAGAR CONTROL BOARD (BCB)

Bansagar Control Board was set up vide Government of India, Ministry of Agriculture and Irrigation Resolution No.8/17/74-DW-II dated 30th January,1976. It was amended vide Resolution No.8/17/74-DW-II dated 28thMarch,1978. This Resolution was in accordance with an agreement reached between the Governments of Madhya Pradesh, Uttar Pradesh and Bihar on 16th September, 1973 for sharing the waters of river Sone and the cost of the Bansagar dam. The Union Minister of Jal Shakti is the Chairman of the Board and Union Minister of Power, Chief Ministers, Minister-in-charge of Irrigation and Finance of the three States and Minister-in-charge of Electricity of Madhya Pradesh are members. The expenditure on the office of the Board is met out of budget grant of DoWR, RD & GR and subsequently reimbursed by the three States of Madhya Pradesh, Uttar Pradesh and Bihar. An Executive Committee of the Board headed by Chairman, CWC manages the activities of the Board. Bansagar dam was raised to its full height along with erection of 18 radial crest gates in June 2006. In 2022-23 the reservoir got filled up to reservoir level 341.64 m (FRL) on 28.09.2022.

Bansagar Dam Project: Bansagar is a multipurpose river valley project on river Sone in Madhya Pradesh envisaging both irrigation and hydroelectric power generation. The Bansagar project is being executed by the Water Resource Department, Government of Madhya Pradesh under direction of Bansagar Control Board. The Party States are carrying out the execution of the canal sand power system independently under their jurisdiction. As per the information provided by the Water Resources Department, Government of Madhya Pradesh, the water released to the States of Madhya Pradesh, Uttar Pradesh and Bihar from November, 2021 to December, 2022 is 2,632.07 MCM, 511.66 MCM and 1097.46 MCM, respectively.

7.2.5 UPPER YAMUNA RIVER BOARD (UYRB)

Upper Yamuna River Board (UYRB) was constituted by Resolution No. 10(66)/71-IT dated 11th March, 1995 of MoWR, RD & GR, Govt. of India in accordance with the provision of the MoU signed by the Chief Ministers of Himachal Pradesh, Haryana, Uttar Pradesh, Rajasthan, and National Capital Territory of Delhi on 12th May, 1994 regarding allocation of utilizable surface flow of river Yamuna upto Okhla Barrage (Upper Yamuna) among the co-basin States. After the creation of Uttaranchal State in 2000, the resolution was modified to include

Uttaranchal (now Uttarakhand) also in the Board in 2001.

The Board consists of Member, Central Water Commission as part-time Chairman and one nominee each from the States of Uttar Pradesh, Uttarakhand, Haryana, Rajasthan, Himachal Pradesh, and National Capital Territory of Delhi not below the rank of the Chief Engineer, a Chief Engineer from Central Electricity Authority and representatives of Central Ground Water Board and Central Pollution Control Board as part-time Members. The Board has a full-time Member-Secretary who does not belong to beneficiary States. The expenditure on the Board is shared equally by the six basin States.

Upper Yamuna Review Committee

Upper Yamuna Review Committee (UYRC) comprising Chief Ministers (Governor in case of President's Rule) of the States of Himachal Pradesh, Haryana, Rajasthan, Uttar Pradesh, Uttarakhand, and National Capital Territory of Delhi under the chairmanship of the Hon'ble Minister, DoWR, RD & GR, Ministry of Jal Shakti, Government of India is for assessment of working of the UYRB and ensuring implementation of MoU dated 12.05.1994.

Functions of UYRB:

The main function of the UYRB is to regulate the allocation of available flows amongst the beneficiary States and also monitoring the return flows; monitoring conserving and upgrading the quality of surface and groundwater; maintaining hydro-meteorological data for the basin; overviewing plans for watershed management; monitoring and reviewing the progress of all projects upto and including Okhla barrage.

Activities of UYRB:

UYRB worked to resolve actively various issues amongst the basin States of upper Yamuna reaches viz. share of Yamuna water to Rajasthan at ex-Tajewala, short supply of Yamuna water to Rajasthan from Okhla headwork, interceptor sewer scheme for Yamuna river, schemes for Gurgaon feeder canal and Agra canal, pollution of Yamuna raw water at Wazirabad, division of utilizable water resources of Yamuna river between Uttar Pradesh and Uttarakhand etc.

Three storage projects, viz., Lakhwar (on the river Yamuna with 330 MCM live storage & 300 MW power generation in the State of Uttarakhand), Kishau (on the river Tons, a tributary of river Yamuna, with 1,324 MCM live storage & 660 MW power generation in the States of Uttarakhand & HP) and Renukaji (on the river Giri, a tributary of river Yamuna, with 498 MCM live storage & 40 MW power generation in the State of HP) MPPs have been identified to be constructed in upper Yamuna basin. The agreements for Lakhwar & Renukaji were signed among the basin States on 28.08.2018 and 11.01.2019 respectively. Efforts have been made by UYRB for resolving various concerns raised by Uttarakhand & Himachal Pradesh for signing the agreement for Kishau MPP. A hybrid meeting was held on 22.03.2022 under the chairmanship of the Secretary, DoWR, RD& GR, Government of India on the issues related to the inter-State agreement for Kishau MPP with the representatives from the Governments of Himachal Pradesh, Haryana, Rajasthan, Uttarakhand and NCT of Delhi. A meeting was held on

26.07.2022 under the chairmanship of Home Secretary, Govt. of India wherein representatives of Uttarakhand, Himachal Pradesh, NCT of Delhi, Haryana, DoWR, RD & GR/ CWC and UYRB were present. A meeting was held on 21.09.2022 under the chairmanship of the Hon'ble Union Minister, Jal Shakti with the Hon'ble Chief Ministers of the States of Haryana, Himachal Pradesh and Uttarakhand on the issues pertaining to the proposed inter-State agreement and implementation of Kishau MPP at Shram Shakti Bhawan, New Delhi.

A meeting through video conferencing was held on 04.03.2022 under the chairmanship of Shri Kushvinder Vohra, Chairman, UYRB & Member (WP&P), CWC & Ex-officio Additional Secretary to Govt. of India with the Additional Chief Secretary, Haryana Irrigation & Water Resources Department, Govt. of Haryana; Principal Secretary, WRD, Govt. of Rajasthan and other officers of CWC to deliberate on the proposal of transfer of Rajasthan's share of Yamuna water at Tajewala Head, Haryana to Jhunjhunu and Churu districts of Rajasthan and its utilization. In pursuance to the decision taken in meeting held through VC on 04.03.2022, a Technical Committee was constituted as agreed by both the States. In continuation, 1st and 2nd meetings of the Technical Committee were held under the chairmanship of Shri R.D. Deshpande, Member Secretary, UYRB on 26.05.2022 and Shri B.P. Pandey, Member Secretary (I/C), UYRB on 22.11.2022, respectively with the members of the Committee.

On 10.11.2022 & 11.11.2022 UYRB officials visited Okhla barrage, Agra canal, Gurgaon canal and Bharatpur feeder canal at Rajasthan border and held discussions regarding water availability & details of regulation at Okhla Headworks with officers of Governments of Haryana, Rajasthan & Uttar Pradesh and visited nearby places/ irrigation structures. Officials of Rajasthan & UP requested to take up the works like cleaning the regulator area of debris, weed & hyacinth and repairing head regulator by releasing funds on the priority and reviewed the various issues on the short supply of water to Rajasthan. Funds have also been asked to be deposited by Rajasthan to UP for repair of the canal system to improve conveyance to Rajasthan.

Chairman, UYRB & Member Secretary, UYRB, had attended a meeting with Hon'ble Chief Minister of Rajasthan and Hon'ble MoJS at Jaipur, Rajasthan on 08.04.2022 regarding water availability to the State of Rajasthan.

7.2.6 FARAKKA BARRAGE PROJECT (FBP)

The Farakka Barrage Project (FBP) was commissioned in 1975 for preservation and maintenance of the Shyama Prasad Mukherjee Port (erstwhile Kolkata Port) and for increasing the navigational depth of the Bhagirathi–Hooghly waterway. FBP also facilitates the sharing of Ganga waters between Bangladesh and India as per the Indo-Bangladesh Water Treaty 1996. It comprises 2,245 m long barrage across river Ganga at Farakka in Murshidabad District of West Bengal, a canal Head Regulator at Farakka for diverting water to feeder canal and Jangipur Barrage, besides the road-cum-rail bridge across Ganga at Farakka, navigation lock at Jangipur, navigation locks at Farakka and Jangipur,

a road-cum-rail bridge across the feeder canal, townships at Farakka, Ahiron and Khejuria ghat having about 4,000 dwelling units, a higher secondary school with the student capacity of 1,200 and a hospital. Its appurtenant structures include flood embankments, marginal bunds, afflux / guide bunds, etc.

FBP authority has been assigned following major responsibilities:

i) Operation & maintenance of main barrage
   - 112 gates on main barrage
   - 11 gates on Head Regulator
   - 15 gates of Jangipur barrage
   - Protective measures of apron and river bed in upstream and downstream of both the barrages & Head Regulator.

ii) Maintenance and protective measures of feeder canal (38.38 km. in length), structures across Feeder Canal, culverts, inlets, ferry services, inspection road (both banks), syphon, buildings etc.

iii) Maintenance and protective anti-erosion work in the original jurisdiction (12.5 km upstream and 6.9 km downstream of barrage); along with its allied structures like marginal bund, afflux bund, inspection road, regulator, culverts, guide bund etc. for the safety of barrage.

iv) Maintenance of Farakka Barrage Township, Khejuria ghat Township, Jangipur barrage colony, colony at Kalindri regulator, including maintenance of all civil, mechanical and electrical structures.

v) Operation & maintenance of all equipment, vehicles and machineries, etc.

Major achievements:

- Replacement of nine barrage gates in phase-II & phase-III in Farakka Barrage.
- Bank protection works in a length of 2,280 m under emergent condition on left bank of Ganga river between Ch. 1530 to Ch. 3450 m upstream of barrage.
- Construction of boundary wall of the Khejuria ghat colony (total length = 1.185 km) at left bank of river Ganga in FBP.
- 13,254.25 acres of FBP land and 2,718 buildings have been uploaded on GLIS portal.
- Work of scour filling by using geo-mega bag at RD 0.00 in feeder canal was executed.
- 118th Meeting of Technical Advisory Committee under chairmanship of Member (D&R), CWC was convened on 21st December, 2022.
- Work of repairing of PSC road over main barrage has been executed successfully.

7.2.7 NATIONAL WATER INFORMATICS CENTRE (NWIC)

National Water Informatics Centre (NWIC) is a subordinate office of the Department set up to act as a repository of nation-wide data on water resources of the country. NWIC is supposed to act as a single window source of water resources data and is mandated to: -

- Collect, collate, update, maintain and

disseminate data on water resources and related information.

- Share hydro-meteorological data amongst Central and State Governments organisations; institutions, academia, planners and general public.
- Develop tools and systems for decision making (decision support systems).
- Provide technical support to organizations dealing with water emergency response for hydrological extremes.

The primary activities of the NWIC include:

- Maintenance of Water Information Management System (WIMS) - a data aggregating platform; and India-Water Resources Information System (India-WRIS) – a publicly accessible online web portal for dissemination of water data. The data collection, generation and presentation into the portal are continuous activities. Various types of data displayed on India-WRIS through different modules are rain fall, reservoir storage level, river water level and discharge, ground water level and surface and ground water quality etc.
- Enhancement of existing modules and development of new modules.
- Enriching existing content of India-WRIS by adding new data and data layers.
- Maintenance of server and IT infrastructure.
- Sharing of data with Central and State Government organisations and stake holders by providing easy access through web portal and facilitating data down-loads based on their area of interest.

Key activities performed by NWIC during the year 2022-23:

Water and Allied Resources Information and Management System (WARIMS) (earlier IWCIMS)

Integrated Water and Crop Information and Management System (IWCIMS) is now renamed as Water and Allied Resources Information and Management System (WARIMS). It 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 9 themes with regards to planning, design, formulation and management of water resources and allied sectors considering river basin approach.

Annual accomplishments:

- For the state-of-the-art integrated DSS system, a feasibility study has been conducted that included recommending technology stack, software, hardware, identifying stakeholder departments & agencies and in-depth studies of respective IT/ non-IT systems and their integration with WARIMS, development of implementation strategies, identification of implementing agencies and cost estimates.

- A Support Center and an Integrated Command and Control Center (ICCC) is envisaged. WARIMS-ICCC will manage day-to-day operations and communicate emergencies to relevant stakeholders through emails, SMS etc. It will also have an equipped help desk to resolve technical issues faced by different user groups of WARIMS.
- a Geo-spatial Analytics Laboratory (GAL) has been proposed under WARIMS project at NWIC. The objective of GAL would be to carry out satellite image processing in house to reduce dependency on other agencies for customised data generation.
- To compare current data availability with the required data, a gap analysis has also been carried out by during feasibility study to ensure the availability, leading to setting priority of use case implementation.
- A Proof of Concept (PoC) has been developed to assess the feasibility of development of the identified use cases in real-time environment.

Development of State Water Informatics Centers (SWIC)

NWIC plans to assist States in development of State Water Resource Information System (State-WRIS) as a State water data repository and by providing them necessary technical guidance and IT infrastructure support. SWIC is envisaged to empower States with digital, validated, unified on-line water resources information system required for better planning and management of water resources at State level and simultaneously to feed the central system for basin and regional level policy planning and taking decisions based on authentic data analytics. In coordination with NWIC, the SWIC shall act as a single point solution for regional and micro level data amalgamation and its dissemination. Policy framework for providing support by NWIC has been sent to States as well as UTs. As of now, 11 States have signed the MoA for establishing SWIC. After signing of MoA, training is being provided by NWIC for the experts/ professionals of States in setting up of the State-WRIS.

Activities related to improvement and data enrichment of India-WRIS and WIMS :

i) India-WRIS

- **Inter Basin Transfer Link:** New map, summary & salient features, reports updated of 16 Himalayan components data and generated new widgets
- **Revamping of Modules:** Reservoir, soil moisture, evapo-transpiration, water resource project & river information system modules have been revamped to make them more users friendly. Download functionality of soil moisture and evapo-transpiration has also been implemented in revamping.
- **Development of new module:** 'Forest/Tree Cover' module has been developed to show forest & tree cover spread across the country and brings forest information from FSI & NRSC together to get a holistic view.
- Upgradation of Arc GIS Server Version (10.6 to 10.8)
- **Data updation:** New data added of hydro structure.

- **Data Dissemination:** Data has been disseminated to various agencies through APIs i.e. data.gov.in, NRSC.
- **Trainings on India-** WRIS and WIMS were organised for users and NHP implementing agencies (State Governments/ Central agencies)

ii) Water Information Management System (WIMS):

- **Migration of the WIMS Applications in new architecture:** WIMS applications have been migrated to new advanced and enhanced cloud architecture.
- **Metadata Bulk Insertion Automation Script:** Automation script created for bulk station creation for both groundwater and surface water sites, using excel based metadata template.
- **Development of Groundwater related modules:**

  a. **Ground Water Report:** New module for generating various reports related to depth to water level, fluctuation - annual, seasonal and decadal etc. for user defined area is developed.

  b. **Ground Water Quality:** Various updates were implemented for water quality data entry and report creation modules as per the inputs provided by CGWB.

  c. **Other Modules:** Development of geophysical investigation, groundwater exploration and pumping test ongoing as per the inputs provided by CGWB.

- **Historical Data Migration:** Historical data migration for various hydrological, meteorological and water quality related parameters for multiple agencies done in WIMS database.
- **Sharing of data through various modes:** Data on various hydro-meteorological parameters along with metadata shared with various user agencies and other stakeholders through FTP, APIs, DB exports as requested on NWIC help-desk.
- **Telemetry Station's Configuration Automation Function:** Database function created to bulk insert the sensor configuration details, i.e., mapping of telemetry observed parameters to WIMS Stations for automated telemetry data flow in WIMS database.
- **Flood Forecasting Module Updates:** Various issues related to flood forecast website functionalities were resolved along with implementation of advanced features in the website.

7.3 REGISTERED SOCIETIES/ STATUTORY BODIES / AUTONOMOUS BODIES

7.3.1 NATIONAL WATER DEVELOPMENT AGENCY (NWDA)

The National Water Development Agency (NWDA) was set up in July 1982 by

the Government of India as a Society under Societies Registration Act, 1860 under the then Ministry of Irrigation (now Ministry of Jal Shakti) to study the feasibility of the links of rivers under peninsular component of National Perspective Plan (NPP). NWDA is fully funded by Government of India. The functions of NWDA have been modified from time to time and the present functions are furnished below:

- To carry out detailed survey and investigations of possible reservoir sites and inter-connecting links in order to establish feasibility of the proposal of peninsular rivers development and Himalayan rivers development forming part of NPP for water resources development prepared by the then Ministry of Irrigation (now Ministry of Jal Shakti).
- To carry out detailed studies about the quantum of water in various peninsular river systems and Himalayan river systems which can be transferred to other basins/States after meeting the reasonable needs of the basin/States in the foreseeable future.
- To prepare feasibility report of the various components of the scheme relating to peninsular rivers development and Himalayan rivers development.
- To carry out survey and investigation work and prepare detailed project reports of river link proposals under NPP for water resources development and thereafter approach concerned States for obtaining concurrence for implementation of the project.
- To prepare pre-feasibility/feasibility/ detailed project reports of the intra-State links as may be proposed by the States. The concurrence of the concerned co-basin States for such proposals may be obtained before taking up their FRs/DPRs.
- NWDA to act as a repository of borrowed funds or money received on deposit or loan given on interest or otherwise in such manner, as directed by MoWR, RD &GR (now MoJS) and to secure repayment of any such borrowed funds/ money/deposits/ loan etc. by way of mortgage, pledge, change or lien upon all or any other property, assets or revenue of the Society, both present and future.
- To do all such other things the Society may consider necessary, incidental, supplementary or conducive to the attainment of above objectives.

Hon'ble Union Minister of Jal Shakti is the President of the Society. The Governing Body (GB) of the NWDA Society under the chairmanship of the Secretary (DoWR, RD & GR), Government of India, manages, administers, directs and controls the affairs and funds of the Society subject to the rules, bye-laws and orders of the Society and generally pursues and carries out the activities of the Society.

HIGHLIGHTS OF ACTIVITIES

i) Interlinking of Rivers under NPP:

Ken-Betwa Link Project (KBLP):

- After concerted efforts by the DoWR, RD & GR, a tripartite Memorandum of Agreement (MoA) for the implementation of the Ken-

Betwa Link Project (KBLP) jointly was signed on 22.03.2021 between the Union of India, Governments of Madhya Pradesh (MP) and Uttar Pradesh (UP), in the presence of Hon'ble Prime Minister of India.

- The PIB Memo was appraised by the PIB in its meeting held on 1st October, 2021 and the PIB recommended a funding pattern of (90 (C): 10(S)) for the project, with some conditions. Based on the PIB recommendations, the Cabinet approved implementation of KBLP at an estimated cost of Rs 44,605 crore at 2020-21 price level with central support of Rs 39,317 crore on 08.12.2021.
- KBLP will provide annual irrigation to an area of 10.62 lakh ha (8.11 lakh ha in Madhya Pradesh and 2.51 lakh ha in Uttar Pradesh) in Chhattarpur, Tikamgarh, Panna, Sagar, Damoh and Datia districts of Madhya Pradesh and Banda, Mahoba, Jhansi and Lalitpur districts of Uttar Pradesh in Bundelkhand region as well as to the Vidisha, Shivpuri and Raisen districts of Madhya Pradesh. The project will provide 194 Million Cubic Metre (MCM) of water for enroute drinking water supply to a population of 62 lakh (41 lakh in Madhya Pradesh and 21 lakh in Uttar Pradesh). The project will also generate 103 MW of hydropower and 27 MW of solar power. Apart from other benefits, the project will rejuvenate all the tanks in the enroute area of link canal by feeding through the link canal, wherever feasible and would help in ground recharge.
- A Steering Committee and Special Purpose Vehicle viz. Ken-Betwa Link Project Authority (KBLPA) for the implementation of KBLP jointly by Government of India and State Governments of MP and UP have been constituted vide Gazette Notification dated 11.02.2022.
- With allocation of budget under RE of FY 2021-22, the implementation of the project has started.
- Rs. 4,639.46 crore have been utilized during FY 2021-22 mainly for CAMPA fund and land acquisition. A provision of Rs. 1,400 crore has been made in FY 2022-23 for KBLP. Rs. 394.77 crore has been utilised as on 30.11.2022. Total expenditure of Rs. 7,534.18 crore has been made on the project as on 30.11.2022, including Rs. 2,496.71 crore from State budget.
- Initially the focus is on land acquisition, R&R, fulfilling the compliances to the conditions of forest clearance and wildlife clearance.
- Final report of Integrated Landscape Management Plan of Panna Tiger Reserve, was released by Secretary, DoWR, RD & GR on 02.06.2022.
- Three meetings of the Steering Committee of Ken – Betwa Link Project (SC-KBLP) have been held under the chairmanship of Secretary DoWR, RD & GR, Ministry of Jal Shakti in New Delhi on 07.04.2022, 20.07.2022 and on 18.01.2023 respectively.
- Topographical survey work for the proposal barrages at Pailani and Banda completed using UAV/Drone technology. Diamond core deep

drilling at the barrage sites under progress. Contour plan of the barrage sites received.

- The offices of KBLPA have been opened at Bhopal, Jhansi and Chattarpur, as decided during the first meeting of Steering Committee.
- The report on core logging of four bore holes drilled along the proposed barrage axis at Banda received from GSI, Lucknow and sent to CSMRS & CWC for design of barrages.
- The work on State-specific components like Lower Orr, Kotha Barrage and Bina Complex Multipurpose Project is already in progress.

Other projects:

- PFR of modified P-K-C link circulated by CE(N), NWDA Lucknow, on 18.08.2022 among concerned States.
- PFR of Upper Udanti Irrigation Project circulated on 31.03.2022 by CE(N), NWDA, Lucknow.
- Draft PFR of Khadaga Hydropower Project circulated on 31.03.2022 by CE(N), NWDA, Lucknow.
- Consultancy work for System Study of (a) Manas – Sankosh – Tista – Ganga link (b) Subarnarekha – Mahanadi link (c) Ganga- Damodar- Subernarekha link and (d) Farakka – Sundarbans link project has been awarded to IIT, Guwahati, NIT, Warangal, NIT Patna and NIH, Roorkee, respectively.
- PFR of Pennar (Somasila)— Palar — Cauvery (Kattalai) Link project in 3 volumes was circulated to party States by CE(S), NWDA, Hyderabad.

ii) Intra State Links

Under the intra-State link projects, NWDA received 49 link proposals from 10 States out of which pre-feasibility reports of 39 link projects were completed and sent to concerned States. The remaining links are either withdrawn by States or are not under intra-State link category. Based on the request of concerned States, the DPRs of four links viz; Kosi-Mechi, Burhi Gandak-Noon-Baya-Ganga links of Bihar, Wainganga-Nalganga link of Maharashtra and Ponnaiyar (Nedungal)-Palar intra-State link of Tamil Nadu were completed and sent to them. Further, the draft DPRs of Damanganga (Ekdare)-Godavari link and Damanganga-Vaitarna-Godavari link projects have also been completed.

Seventh India Water Week (7th IWW) - 2022:

The 'Seventh India Water Week-2022' was held from 1st – 5th November, 2022 at India Expo Centre, Greater Noida, National Capital Region (NCR) of Delhi with the theme "Water Security for Sustainable Development with Equity".

- The Hon'ble President of India, Smt. Droupadi Murmu inaugurated the 7th India Water Week on 01.11.2022 at the India Expo Centre in Greater Noida, Uttar Pradesh, in august presence of Governor, Uttar Pradesh, Chief Minister, Uttar Pradesh, Union Minister of Jal Shakti, Ministers of States for Jal Shakti.
- Plenary session was held on 01.11.2022 under the Chairmanship of Hon'ble Union Minister of Jal Shakti, Shri Gajendra Singh Shekhawat.
- Shri Pankaj Kumar, Secretary, DoWR, RD & GR welcomed all the dignitaries and the event commenced with the

auspicious ceremony of "jal bharo" by the President and other dignitaries present on the dais by pouring water into the vessel, strengthening the vision of Jal Shakti.

- Denmark, Finland, Germany, Israel & European Union participated in 7th IWW-2022. Around 2,000 delegates from India and abroad participated in the event.
- During IWW- 2022, four technical sessions comprising 10 seminars, 10 panels discussions, events and side events were held. A large group of international and national persons of eminence participated and shared their experiences in the field of water management.
- H.E. Mr. Shoimzoda Jamshed, First Deputy Minister of Energy & Water Resources, Republic of Tajikistan, and H.E. Eng. Maryprisca Winfred Mahundi, Dy. Minister of Water, Tanzania inaugurated the Exhibition at the 7th edition of India Water Week 2022 in the gracious presence of Union Minister of Jal Shakti Shri Gajendra Singh Shekhawat and senior officials.
- The 7th India Water Week-2022, culminated with the valedictory function on 05.11.2022 in the august presence of Hon'ble Vice President of India, Shri Jagdeep Dhankhar. Hon'ble Union Minister for Jal Shakti, Hon'ble Union Minister for Agriculture & Farmer's Welfare, Hon'ble Minister of State for Jal Shakti, Hon'ble Minister of Jal Shakti, Uttar Pradesh, Secretary, DoWR & GR, MoJS, and Special Secretary, DoWR, RD &GR, MoJS, graced the occasion.

National Interlinking of Rivers Authority (NIRA)

- The proposal for the constitution of National Interlinking of River Authority (NIRA) is under active consideration in the Ministry. The issue was deliberated at length in 15th meeting of Task Force-ILR (TFILR) covering the need for its constitution, appropriate mode for its creations, mandate and functions, structure, subsuming the staff of NWDA into NIRA and additional requirements of posts, consultation mechanism etc.
- The revised proposal for the restructuring of NWDA and creation of NIRA was deliberated by the Special Committee on ILR in its 19th meeting held on 12.11.2021 covering mandate and functions of NIRA, proposed structure, subsuming the staff of NWDA into NIRA and additional requirements of posts etc.
- The proposal for constitution of NIRA has been prepared by NWDA and submitted to the Ministry on 17.12.2021. The proposal is under consideration of the Government.

7.3.2 NATIONAL WATER MISSION (NWM)

Water is intrinsic to life and growth. Water is a gift of nature in its natural state and a product of value when it reaches the households to drink, feed, clothe and aid growth. To tackle the adverse impacts of climate change on water resources, NWM was set up as per the National Action Plan on Climate Change (NAPCC) which was approved by the Government of India and released by the Hon'ble Prime Minister on 30th June 2008. One of the main objectives

of the mission is to ensure integrated water resource management which would help to conserve water, minimize wastage and ensure more equitable distribution both across and within States.

The five goals of the mission are reflective of a non-siloed approach to water. The mission through its goals tries to break sectors & verticals in water policy for an integrated holistic approach to water. The goals identified by the comprehensive Mission Document for National Water Mission are:

- Comprehensive water data base in public domain and assessment of the impact of climate change on water resource;
- Promotion of citizen and state actions for water conservation, augmentation and preservation;
- Focused attention to vulnerable areas including over-exploited areas;
- Increasing water use efficiency by 20%;
- Promotion of basin level integrated water resources management.

NWM has been addressing accomplishment of above five goals through implementation of 39 strategies prescribed in the Mission Document.

Activities and new initiatives taken during the year

(i) 1st All India Annual State Ministers' Conference on Water

"1st All India Annual State Ministers' Conference on Water'' with the theme "Water Vision@2047" was held on 05-06 January, 2023 at Bhopal to discuss the Water Vision@2047. This was the 1st ever Annual Conference which was attended by State Ministers of Water Resources/ Public Health Engineering Department/ Irrigation who made presentations on Hon'ble Prime Minister's Vision@2047 for Water, along with the partner Departments/ Ministries of the Central Government.

The Conference commenced with an e-address by Hon'ble Prime Minister of India. Hon'ble Minister of Jal Shakti and Hon'ble Minister of State for Jal Shakti & Food Processing Industries attended the Conference. Also, Hon'ble Chief Minister of Madhya Pradesh, Hon'ble Deputy Chief Minister of Maharashtra and 13 Hon'ble State Ministers of Water Resources/ Rural Development/ Public Health Engineering graced the Conference with their kind presence.

The primary objective of the workshop was to seek and strengthen the partnership with the states and stakeholder Ministries and to achieve a shared vision in order to manage water as a precious resource in an integrated manner with holistic and inter disciplinary approach to water related issues.

Shri Gajendra Singh Shekhawat, Hon'ble Union Minister (Jal Shakti) along with other Ministers and senior officers during 1st All India Annual State Ministers' Conference on Water on 5th - 6th January, 2023 at Bhopal

Smt. Archana Varma, AS & MD, NWM during the 1st All India Annual State Ministers' Conference on Water on 5th - 6th January, 2023 at Bhopal

(ii) Setting up of Bureau of Water Use Efficiency (BWUE)

To achieve the target of one of the goals of NWM, i.e., improvement in WUE by 20%, a dedicated organization has been set up as Bureau of Water use Efficiency (BWUE) under National Water Mission during October, 2022 to work on mission mode. BWUE will act as a facilitator for promotion of improving water use efficiency across various sectors namely irrigation, drinking water supply, power generation, industries, etc. in the country, for promotion, regulation and control of efficient use of water in irrigation, industrial and domestic sectors.

Following are the proposed functions of said Bureau:

- To plan and execute nation-wide program for promotion of efficient use of water in irrigation, domestic water supply, municipal and/or industrial uses in the country.
- To make necessary regulatory directions to promote water use efficiency.
- Prescribing guidelines for water conservation codes, standardizing and developing codes and facilitate their notification from concerned authorities.
- Developing standards for water efficient fixtures, appliances, sanitary wares and other equipment using water in both urban / rural areas to specify equipment and appliances or class of equipment/appliances as the case may be for the purpose of water use efficiency.
- Evolving a system of efficiency labeling/ blue labeling, water footprint and protocols.
- Assessment of water foot print and water auditing in agriculture sector to minimize virtual export of water.
- Evolve a system for incentivizing for promotional efforts to increase in water use efficiency.
- Evolve guidelines, promote and ensure water audit in water supply, industrial and agriculture sector.
- Create a resource centre and data bank related to various aspects of water use efficiency.
- Promote research and development including research in the field of water conservation in order to increase the water use efficiency.
- Work towards capacity building and mass awareness through information, education and communication (IEC) by organizing training by specialists in the techniques for efficient use of water and its conservation.
- Promote region specific projects on water use efficiency in collaboration with Central/State Government institutions.

(iii) Water Heritage Structures

As a part of Azadi Ka Amrut Mahotsava, NWM has initiated the process of identification of 75 water ancient water conservation structures across India and declare them as "Water Heritage Structures". In this connection, a Committee has been constituted under the Chairmanship of Shri Rajiv Ranjan Mishra, Ex-Director General, National Mission for Clean Ganga, comprising members from CWC, CGWB, ASI & INTACH. States/UTs have been requested to send nominations of traditional water conservation sites to be recognised as «Water Heritage Structures". NWM has started receiving responses from States/ UTs/stakeholders and so far NWM has received 421 nominations of various typology. A tentative list of 75 water heritage structures has been proposed by the Committee and is under the process of approval of the competent authority.

A sub-portal **"Jal-Itihas"** on India WRIS Portal is also being created. Once 75 structures are finalized, details of the structures will be uploaded on "Jal-Itihas" portal.

(iv) "Jal Shakti Abhiyan- Catch the Rain (JSA:CTR)" 2022 campaign

Jal Shakti Abhiyan-I (JSA-I) was conducted in 2019 in 1,592 blocks out of 2,836 blocks in 256 water stressed districts of the country and was expanded as "Jal Shakti Abhiyan: Catch the Rain" (JSA:CTR) in 2021 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. "Jal Shakti Abhiyan: Catch the Rain" (JSA:CTR) 2022 campaign, the third in the series of JSAs, was launched by Hon'ble President of India on 29.03.2022 in all districts (rural as well as urban areas) of the country for implementation from 29th March, 2022 to 30th November, 2022 - the pre-monsoon and monsoon period.

Jal Shakti Abhiyan, a flagship campaign of the National Water Mission, involves inter-sectoral convergence of all development programmes like MGNREGS, AMRUT, Repair, Renovation and Restoration Scheme, Water Shed Development Scheme, Per Drop More Crop etc. The abhiyan offers a major opportunity in leveraging convergence and working towards a greater vision of water conservation. "Jal Shakti Abhiyan: Catch the Rain brings in more collaboration from different Central Department/ Ministries as well State Governments to work in an integrated manner.

Focused interventions of the campaign

The focused interventions of the campaign include (1) water conservation and rainwater harvesting; (2) enumerating, geo-tagging & making inventory of all water bodies; preparation of scientific plans for water conservation based on it; (3) setting up of Jal Shakti Kendras in all districts; (4) intensive afforestation; and (5) awareness generation.

Appointment of Central Ministries/ Departments Nodal Officers and State Nodal Officers: For seamless coordination and better implementation of the campaign, Nodal Officers from concerned Central Ministries/ Departments and State Nodal Officers from each State/ UT have been appointed. An orientation workshop was organized on 4th May, 2022 for the Central Ministries'/Departments' Nodal Officers and State Nodal Officers under the Chairmanship of Secretary, DoWR, RD &

GR for sensitization of the Nodal Officers and to highlight the role expected from them during the implementation of the campaign.

Orientation workshop of Nodal officers held on 04th May, 2022

Orientation of CNOs and TOs: In order to discuss the modalities related to the field visits of CNOs and TOs, a workshop-cum-orientation programme was organized on 19th and 20th May, 2022 at New Delhi for the Central Nodal Officers and Technical Officers appointed for JSA:CTR-2022. The workshop was chaired by Secretary, DoWR, RD and GR, Ministry of Jal Shakti. Among other officials, the meeting was also attended by Secretary, Department of Land Resources; Secretary, Department of Rural Development and Additional Secretary and Mission Director, National Water Mission, Ministry of Jal Shakti. During the workshop, presentations were made on 'Introduction of JSA: CTR – 2022 and Role of CNOs and TOs', 'Inventorization and Rejuvenation of Springs, 'GIS based water conservation plans and inventory of water bodies' and 'Mission Amrit Sarovar'. The workshop highlighted the role of CNOs and SNOs during their visit to the districts allotted to them.

Workshop cum orientation programme of Central Nodal Officers & Technical Officers held at New Delhi on 19 & 20.05.2022

Involvement of Non-Governmental Organizations (NGOs): Non-Governmental Organizations (NGOs)/ Voluntary Organizations (VOs) play an important role in the implementation of the campaign. The NGOs working in field of water conservation in different states are being mobilized and involved directly in implementation of JSA: CTR-2022. In order to involve the NGOs in the campaign and to discuss the issues in the implementation of the campaign, a National Conference on the role of Civil Society Organizations in Water Security for Sustainable Development-Learning and Development under Jal Shakti Abhiyan : Catch The Rain was held on 23rd and 24th June, 2022 at Kanha Shanti Vanam near Hyderabad wherein 82 NGOs participated.

National Conference on the role of Civil Society Organizations in Water Security held at Kanha Shanti Vanam near Hyderabad on 23rd & 24th June, 2022

Meetings with State Nodal Officers– Series of meetings had been organized with State Nodal Officers to discuss the progress of JSA:CTR-2022. In this series, five meetings were organized with States/ UTs through virtual mode between July and August wherein States appraised about the best practices being taken up in their respective areas for successful implementation of JSA:CTR-2022 campaign. Action points for each meeting were prepared and sent to the SNOs of each State for necessary action.

Virtual Meeting with State Nodal Officers to discuss progress under JSA:CTR 2022 campaign

Progress under Jal Shakti Abhiyan: Catch The Rain-2022

As per the information uploaded by various stakeholders on the JSA:CTR portal (jsactr.mowr.nic.in), during the period of 29th March 2022 till 30th November, 2022 under the JSA:CTR campaign, 10,58,591 water conservation & rain water harvesting structures were created/ongoing, 2,34,467 traditional water bodies were renovated/ongoing, 7,18,884 reuse and recharge structures

were completed/ongoing and 13,32,506 watershed development structures were completed/ongoing. Further, 78,26,40,139 afforestation activities were carried out under the campaign. 262 districts have prepared water conservation plans.

(v) Financial assistance to districts for GIS Mapping of Water Bodies and for preparation of Scientific Plans

A financial grant of upto Rs 2.00 lakh to each district is provided in two installments of Rs. 1.00 lakh each to meet part of the expenditure in undertaking GIS mapping of water bodies and preparation of scientific action plan under JSA:CTR campaign. GIS Mapping of water bodies of a district depends on many factors such as area, geographic characteristics etc. Further, the task requires hiring of technical man-power for its completion. The financial grant of Rs 2.00 lakh was only meant to encourage the district authorities for undertaking the activity and was meant to cover only a part of the cost.

First installment of Rs. 1.00 lakh each has been released to 579 districts till date. Second Installment of Rs 1.00 lakh has been released to 135 districts.

(vi) Jal Shakti Kendras

As water is a subject handled by various Departments of the State Government like Irrigation- Major/ Minor; Water resources; Public Health Engineering, Rural Water Supply, Municipality, Agriculture, Industries, Rural Development etc. and also the technical knowledge on appropriate RWHS is also limited at local level (rural & urban), it has been proposed to the States to set up Jal Shakti Kendras in every district of the country. All the State Governments have been requested to set up 'Jal Shakti Kendras' in every district headquarters as a part of the campaign. 'Jal Shakti Kendras' (JSKs) will work as "knowledge centers" for disseminating information related to water conservation techniques and will provide technical guidance to people. As per information available on 'Jal Shakti Abhiyan: Catch the Rain' portal (jsactr.mowr.gov.in), 606 Jal Shakti Kendras have been set up in various States/UTs.

Opening of Jal Shakti Kendra and 1st Meeting of District Water Conservation Committee, Yupia, Arunachal Pradesh.

vii) Involvement of Nehru Yuva Kendra Sanghatan (NYKS)

NWM tied up with Department of Youth Affairs to spread awareness to cover 31,150 villages in 623 districts on JSA:CTR campaign using the vast network of Nehru Yuva Kendra Sangathan (NYKS) and its youth clubs. The awareness generation drive by NYKS, started in December 2020, formed the foundation of the massive involvement of the people in the JSA: CTR campaign. NYKS have engaged over 3.82 crore people in 36.60 lakh activities in the campaign through activities like rallies, jal choupals, quizzes, debates, slogan writing competitions, wall writings etc. The power of the youth of the country is being tapped by involving NYKS to sensitize the populace on different aspects of water management. Involvement of NYKS is extended in the JSA: CTR 2022 also to carry out their activities through their vast network in the country.

(viii) Preparation of State Specific Action Plans for Water Sector

NWM envisaged developing State Specific Action Plan (SSAP) for water sector covering irrigation, industry, domestic and waste water of a State/UT. NWM is providing financial assistance of Rs. 50 lakh to major States and Rs. 30 lakh to small States/UTs as a grant for formulation of SSAPs for water sector. NWM engaged two nodal agencies for coordination and monitoring of SSAP formulation. North Eastern Regional Institute of Water and Land Management (NERIWALM), Tejpur is coordinating & monitoring SSAP formulation for 19 States and National Institute of Hydrology (NIH), Roorkee is coordinating & monitoring with remaining 16 States/UTs. So far, 32 States / UTs (2 in last one year) have signed MoUs with the nodal agencies. 18 States (out of which 7 in past one year) have submitted the first phase of draft status report.

(ix) HRD & Capacity Building and Mass Awareness Programmes

Trainings/workshops are regularly organized in collaboration with State Governments and Government Agencies like National Institute of Hydrology (NIH), Roorkee, North Eastern Regional Institute of Water and Land Management (NERIWALM), Tezpur, Water & Land Management Institute (WALMI), Dharwad and Centre for Water Resources Development & Management (CWRDM), Kerala. Dialogue series on "Catch the Rain" where Collectors/District Magistrates/ Commissioners and water activist are invited to share their commendable work in their districts to address the water issues.

(x) Baseline Studies

NWM awarded 26 baseline studies in association with 4 institutes (NERIWALM, WALMTARI, WALMI and CWRDM) for improving water use efficiency in irrigation sector. These studies are done considering major – medium projects covering five States - Assam (5 projects), Andhra Pradesh (5 projects), Telangana (5 projects), Maharashtra (6 projects) and Kerala (5 projects). Inception reports of 18 studies had been approved by Core Group on baseline studies. 12 final reports & 5 draft final reports have been submitted by the institutes.

(xi) Water Talks

A monthly 'Water Talk' lecture series is an important activity undertaken by the NWM with the aim to stimulate awareness, build capacities of stakeholders and

41st Water Talk held by NWM virtually on 21.10.2022.

encourage people to become active participants to sustain life by saving water on earth. Leading water experts are invited to present inspiring and broadening perspectives on current water issues in the country. 'Water Talk' series was launched on 22nd March 2019 on the occasion of World Water Day.

Following Government's restrictions on public gatherings due to COVID-19 pandemic, the water talks are now being organized as e-Water Talk in webinar format since May 2020. NWM has organized 42 Water Talks so far out of which last 30 talks have been held on virtual platform.

7.3.3 NATIONAL INSTITUTE OF HYDROLOGY (NIH)

The NIH was established in December 1978 at Roorkee. The Institute is fully aided by the MoJS, DoWR, RD& GR. The objectives of the Institute are:

- To undertake, aid, promote and coordinate systematic and scientific work on all aspects of hydrology,
- To cooperate and collaborate with other national and international organizations in the field of hydrology,
- To establish and maintain a research and reference library in pursuance of the objectives of the society and equip the same with books, reviews, magazines and other relevant publications,
- To carry out activities that the Society may consider necessary, incidental or conducive to the attainment of the objectives for which the Institute has been established.

The major theme wise R&D activities: (1) environmental hydrology; (2) ground water hydrology; (3) hydrological investigations; (4) surface water hydrology; and (5) water resources systems. In addition, the Institute has a Research Management and Outreach Division (RMOD), which provides the interface with various research and academic institutions along with R&D activities.

The Institute has set up six regional centers: (1) Hard Rock Regional Centre (Belagavi); (2) Western Himalayan Regional Centre (Jammu); (3) Deltaic Regional Centre (Kakinada); (4) Central India Hydrology Regional Centre (Bhopal);

(5) North Eastern Regional Centre (NERC) (Guwahati); and (6) Centre for Flood Management Studies for Ganga basin (Patna). In addition, a new Regional Centre has been recently opened at Jodhpur (Rajasthan) to cater needs of hydrological studies of arid and semi-arid regions.

Studies and Research:

NIH Thrust Area of R&D Activities:

Major research/thrust areas are as under:

- Hydrology of extremes
- Environmental hydrology
- Regional hydrology
- Integrated water resources management
- Hydrological studies for north-east region
- Hydrological Studies for Himalayan region
- Hydrology for watershed management
- R&D under National Water Mission
- Technology transfer and outreach activities

The studies and research in the Institute are being carried out broadly under the following major categories:

- Basic studies and research
- Applied studies and research
- Software development
- Field and laboratory-oriented and strategic research
- Sponsored research and consultancy

The Institute has the following well-equipped laboratories with state-of-art instruments to provide the necessary support to field studies:

- Nuclear hydrology
- Remote sensing & GIS
- Soil water
- Water quality
- Hydro-meteorological observatory

During the year 2022-2023 (up to Dec 2022), the Institute has published more than 100 papers in reputed international and national journals and proceedings of international and national conferences and symposia. During the year, 50 internal and 46 sponsored R&D studies were going on. 11 consultancy projects & 3 technical services were completed and 91 are continuing in the year 2022-2023.

Some of the important R & D studies completed during the year include statistical evaluation of global precipitation estimates over data scarce Western Himalayan region of India; water quality assessment of South West Punjab emphasizing carcinogenic contaminants and their possible remedial measures; evaluation of the influence of low frequency atmosphere ocean oscillations on annual floods in Godavari and Narmada river banks; assessment of climate change impact on water availability and agriculture in part of Banas basin; evaluation of the influence of low-frequency atmosphere-ocean oscillations on annual floods in the Godavari and Narmada river basins; hydrologic and hydraulic modelling for floodplain inundation mapping under future climate change scenarios: A case study of Tawi River, India; hydrological behavior of two mid-sized mountainous catchments under the influence of climate change; and groundwater quality assessment of Moriagaon district of Assam with emphasis on arsenic & fluoride contamination.

Apart from R&D activities, the Institute has organized 22 training programmes during the year 2022-23 (till Dec. 2022), for capacity building of field engineers, scientists, researchers, etc. The Institute has also organized various activities under Azadi Ka Amrit Mahotsav@ India 75.

A view of Awareness Program under 'AKAM@ India 75' at Haridwar on 29th July, 2022

Keeping in view the NHP objectives and initiatives, NIH is involved in the following activities of NHP:

- Purpose Driven Studies (PDS): NIH is coordinating the research activities under Purpose Driven Studies (PDS). 40 PDS have been approved and 21 PDS have been completed.
- Centre of Excellence for Hydrologic Modelling: "Centre of Excellence for Hydrologic Modelling (CEHM)" has been created at NIH, Roorkee. Two studies on application of different models have been initiated in CEHM. Status report on the hydrologic modelling has been prepared. Development of "National Hydrology Model (NHM)" with IIT Kharagpur is under progress. 8 studies have been initiated on the request of State departments.
- Decision Support System (DSS): Decision Support System (DSS) has been developed for 9 States by NIH during HP-II project. New applications of DSS-PM (planning & management) have been created in association with States. DSS-PM contract has been signed with DHI India on 5th August, 2019 at NIH Roorkee.

Patents / MoU / Awards:

- During the year 2022, the NIH received Patent No. 395135 entitled "Fluoride Removal Media Developed From Bagasse Fly Ash And A Method For Synthesis Thereof" for R&D activities under Environmental Hydrology division.
- A memorandum of understanding (MoU) has been renewed and signed between the National Institute of Hydrology (NIH), Roorkee (India) and the UK Center of Ecology and Ecology (UKCEH), Wallingford (United Kingdom) to strengthen and

Third modelers meet organized under NHP at New Delhi during 19-20 December, 2022

promote their coordination through research collaboration for their mutual interests, focusing on the research domains of eco-hydrology, environmental flows and ecosystem services, hydrological monitoring and modelling, water quality modelling, and experimental catchments and data management.

MoU with UK-Centre for Ecology and Hydrology (UK-CEH) by NIH, Roorkee on 06th Dec.,2022

7.3.4 NORTH EASTERN REGIONAL INSTITUTE OF WATER AND LAND MANAGEMENT (NERIWALM)

NERIWALM is a Registered Society under the administrative control of the DoWR, RD & GR. This is the only Water and Land Management Institute (WALMI) established and administered by Government of India and is serving eight States of the North East India. It imparts trainings to enhance knowledge, skill and capacity of in-service personnel working in the Departments of Water Resources/ Irrigation, Soil Conservation, Agriculture & Horticulture, Rural Development, etc. including Water Users Associations (WUAs) and farmers in the NE region of India. Customized mid-term training programmes are also conducted on self-financed mode for BE/B.Tech/M.Tech/ graduates/post graduate students as requested by colleges/universities for the fulfillment of their prescribed degree programmes.

During the year 2022-23 (April 2022 to March 2023), the target for training programme recommended by Technical Advisory Committee of NERIWALM was 65 for different target groups like officers, farmers, water users associations, women group/farmers, other stakeholders and students. In the year 2022, from January to December, 72 training programmes were organized by the institute benefitting 3,099 persons. The breakup of number of training programme and participants from January to December, 2022 is given below, NERIWALM also organised, on the

Target group	Target for Number of training programme (January to December, 2022)	Achievement Number of training programme (January to December,2022)	Achievement Number of participants (January to December,2022)
Officers	20	21	860
WUAs/Farmers	26	28	1,007
Women groups/ farmers	04	6	232
NGO	02	0	0
Student	13	15	1,000
Stakeholders	07	02	-
Grant Total	**72**	**72**	**3,099**

**Note: As stakeholders' programmes are participated by Officers/Farmers/Student/NGOs participants as per designation are included in participants column to avoid repetition.*

direction of Ministry, seven watershed management training programme and four springhed management training/ workshop/ webinar/ symposium during January to December, 2022.

7.3.5 NATIONAL MISSION FOR CLEAN GANGA (NMCG)

NMCG was registered as a society on 12.08.2011 under the Societies Registration Act, 1860. It acted as implementation arm of National Ganga River Basin Authority (NGRBA) which was constituted under the provisions of the Environment Protection Act (EPA), 1986. NGRBA has been dissolved with effect from 07.10.2016, consequent to the constitution of National Council for Rejuvenation, Protection and Management of River Ganga (referred as National Ganga Council) vide notification no. S.O. 3187(E) dated. 7-10-2016 under EPA, 1986. The Act envisages five tier structures at national, state and district level to take measures for prevention, control, and abatement of environmental pollution in river Ganga and to ensure continuous adequate flow of water to rejuvenate the river Ganga as below:

- National Ganga Council under chairmanship of Hon'ble Prime Minister of India (last NGC meeting held on 30th December, 2022).
- Empowered Task Force (ETF) on river Ganga under chairmanship of Hon'ble Union Minister of Water Resources, River Development and Ganga Rejuvenation.
- NMCG.
- State Ganga Committees.
- District Ganga Committees in every specified district abutting river Ganga and its tributaries in the States.

NMCG has a two-tier management structure comprising of Governing Council and Executive Committee which are headed by Director General, NMCG. Executive Committee has been authorized to accord approval for all projects up to Rs.1,000 crore. NMCG has signed Memorandum of Understanding (MoUs) with various Central Ministries such as Ministry of Human Resources Development, Ministry of Rural Development, Ministry of Railways, Ministry of Shipping, Ministry of Tourism, Ministry of Ayush, Ministry of Petroleum, Ministry of Youth Affairs and Sports, Ministry of Drinking Water & Sanitation and Ministry of Agriculture and Farmers' Welfare.

"Namami Gange" was launched with the aim of integrating previous and currently ongoing initiatives in holistic manner with a basin approach. It has been approved as a Central Sector Scheme in 2015 and includes diverse set of interventions such as pollution abatement measures to tackle different sources of pollution such as municipal sewage, industrial effluents, municipal solid waste, non-point sources of pollution and interventions for improving ecological flows, biodiversity conservation, afforestation, improving amenities and sanitation at riverbanks, capacity building, research & monitoring, public awareness. These programs can be placed into four categories i.e., Nirmal Ganga, Aviral Ganga, Jan Ganga and Gyan Ganga.

II. Pollution Abatement (Nirmal Ganga)

a) Out of 408 projects, 228 projects have been completed so far. These projects pertain to sewerage infrastructure, rural sanitation, pilot projects for in-situ treatment of wastewater in drains, industrial pollution abatement, modernization/ development of ghats and crematoria, trash skimmers for river surface cleaning, biodiversity conservation and improvement of fisheries, ghat cleaning, afforestation, and medicinal plantations, etc.

Projects Status as on 30th November, 2022					
Sl. No	**Projects Undertaken**	**No of Projects**	**No of Projects completed**	**Sanction Cost (Rs in crore)**	**Total Expenditure (Rs in crore)**
Sewage Infrastructure					
1	Sewage Infrastructure	176	98	26,263.06	11,753.62
2	Modular STPs Decentralized Treatment	1	0	410.00	0.00
Ghat & Crematoria/ River Front Development					
3	RFD, Ghats & Crematoria and Kunds (includes 24 old sanctioned projects of West Bengal)	101	71	1,689.23	1,165.96
4	Ghats Cleaning	5	3	59.84	51.82
5	River Surface Cleaning	1	1	33.53	19.49
6	Solid Waste/Sanitation	5	5	201.59	120.93
	Sub Total	**112**	**80**	**1,984.19**	**1,358.20**
Institutional Development (Non -Infrastructure)					
6	Ganga Knowledge Center	7	2	145.77	40.97
7	Ganga Monitoring Center	1	0	46.69	0.00
8	Industrial Pollution Abatement	17	2	1,427.10	416.70
9	District Ganga Committee	1	0	2.30	0.00
	Sub Total	**26**	**4**	**1,621.86**	**457.67**
Project Implementation Support/Research & Study Projects/Public Relations and Public Outreach					
10	Project Implementation Support/ Research & Study Projects and Public Outreach	27	3	95.86	28.06
	Biodiversity				
11	Educating Schools & Communities for conserving habitat of Ganga River Dolphin	1	1	1.28	1.28
12	Assessment of fish & fisheries of the Ganga river system for developing suitable conservation & restoration plan	4	3	20.83	14.21
13	Biodiversity Conservation	5	2	166.92	53.34
	Sub Total	**10**	**6**	**189.03**	**68.83**

Projects Status as on 30th November, 2022					
Sl. No	**Projects Undertaken**	**No of Projects**	**No of Projects completed**	**Sanction Cost (Rs in crore)**	**Total Expenditure (Rs in crore)**
Afforestation					
14	Afforestation	35	27	482.37	323.60
Composite Ecological Task Force & Ganga Mitra					
15	Composite Ecological Task Force and Ganga Mitra	6	4	200.18	124.76
Bioremediation					
16	Bioremediation	14	6	238.38	37.34
Construction of IHHL across Gram Panchayats near Ganga River					
17	Construction of toilets across Gram Panchayats near Ganga River (States-UK, UP,BH,JH,WB)	1	0	1,421.26	1,020.44
Grand Total		**408**	**228**	**32,906.19**	**15,172.52**

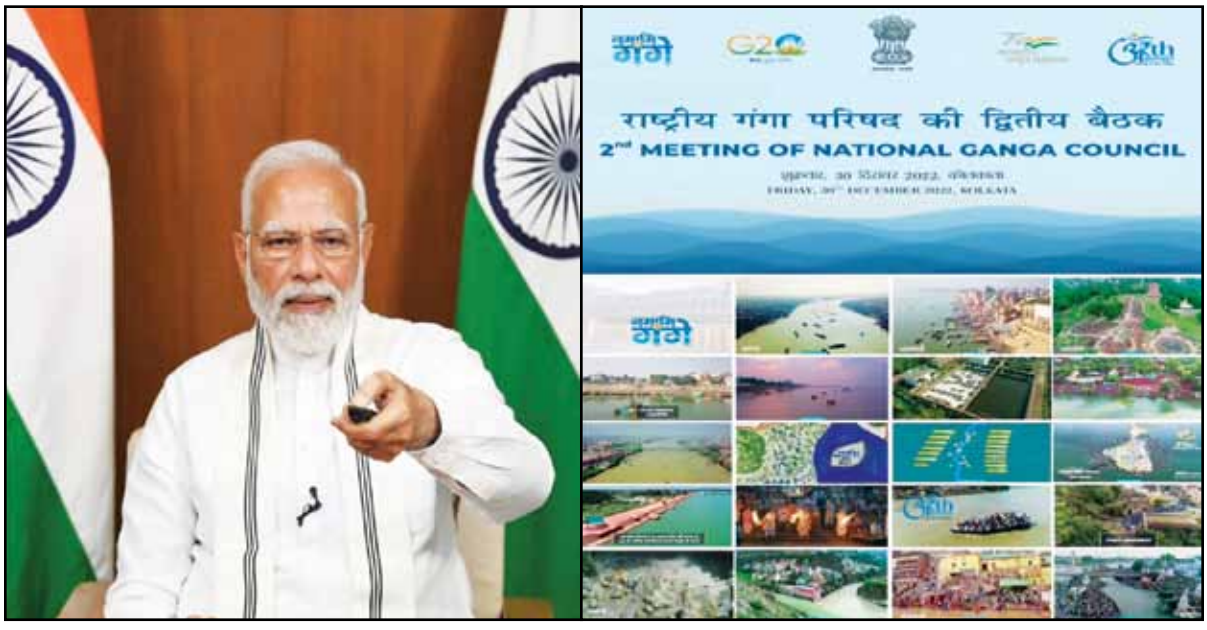
Major Achievements from January-December 2022

- **Meeting of National Ganga Council:** The 2nd meeting of the National Ganga Council was held under the Chairmanship of Shri Narendra Modi, Hon'ble Prime Minister of India on 30th December 2022 at Kolkata. Hon'ble PM joined via video conferencing, while the other members of NGC viz. Hon'ble Chief Ministers of West Bengal, Uttar Pradesh, Uttarakhand, Jharkhand and Bihar (represented by Deputy Chief Minister of Bihar), Hon'ble Union Ministers of Jal Shakti; Agriculture & Farmers Welfare; Shipping; Power; Environment, Forests and Climate Change; Housing and Urban Affairs; Tourism; Union Minister of State (Independent Charge) Science & Technology and Vice Chairman NITI Aayog; Secretaries of Department of Water Resources, River Development & Ganga Rejuvenation; Department of Drinking Water & Sanitation; Ministry of Housing and Urban Affairs; Ministry of Agriculture & Farmers Welfare and DG, NMCG were physically present.

2nd National Ganga Council Meeting under the Chairmanship of Hon'ble Prime Minister on 30th December 2022

During the meeting Hon'ble Prime Minister complemented the functioning of NMCG and mentioned about the selection of Namami Gange as one of the top 10 Eco-Restoration Flagships of the world by UN agencies, from among over 160 such restoration programs around the world. He said that it was a great opportunity to discuss ways to further strengthen the Namami Gange initiative. Hon'ble PM spoke about ways to enhance cleanliness efforts including expanding the network of sewage treatment plants in the smaller towns. He also emphasised on ways to enhance various forms of herbal farming along the Ganga and the need to boost tourism infrastructure along the river, which can provide livelihood opportunities to several people.

- Inauguration and Foundation Stone laying ceremony of Sewage Infrastructure projects by Hon'ble Prime Minister on 30th December 2022: On 30th December 2022 Hon'ble Prime Minister inaugurated 7 sewage infrastructure projects consisting of 20 STPs and 612 km sewerage network, costing Rs. 992 crore. He also laid the foundation stone for 5 sewerage infrastructure projects consisting of 8 STPs and 80 km sewerage network with an estimated cost of Rs. 1,585 crore.



Inauguration and Foundation Stone laying ceremony of Sewage Infrastructure projects by Hon'ble Prime Minister on 30th December 2022

- **United Nations Recognizes Namami Gange as one of the top 10 World Restoration Flagships:** The United Nations (UN) has recognized Namami Gange initiative to rejuvenate India's sacred river Ganga as one of the top 10 World Restoration Flagships to revive the natural world. The Award was received by DG, NMCG at a function in the 15th Conference of Parties (COP15) to the Convention on Biodiversity (CBD) in Montreal, Canada on 14th December 2022, on World Restoration Day.

Hon'ble Union Minister of Jal Shakti during the launch of DGC Digital Dashboard on 6th April 2022

- **Launched Digital Dashboard for District Ganga Committees (DGCs) Performance Monitoring System (GDPMS):** On 6th April 2022, Hon'ble Union Minister of Jal Shakti launched the digital dashboard for District Ganga Committees (DGCs) Performance Monitoring System (GDPMS) and the 4 M, i.e., Mandated Monthly Minuted Meetings of DGCs to be held on the second Friday of every month.
- **Completion of projects:** Between January to November 2022, 25 sewerage infrastructure projects have been completed which comprise 41 STPs for creation/ rehabilitation of 910 MLD treatment capacity and laying of 427 km sewer network.
- **Arth Ganga:** Under Arth Ganga, six key verticals have been identified are (i) Zero Budget Natural Farming; (ii) Monetisation of Reuse of Sludge & Wastewater; (iii) Public Participation; (iv) Culture Heritage & Tourism; (v) Livelihood Generation Opportunities; (vi) Institutional Building.
- During 2022, various key initiatives include signing of MoUs with Sahakar Bharti, Patanjali, Art of Living, and others to promote the organic farming, MoUs with ImAvatar for promoting livelihood generation opportunities, and MoUs with Ministry of Culture to promote culture and heritage.

Hybrid annuity-based PPP model

Government of India has approved the adoption of the Hybrid Annuity Based Public-Private Partnership Model for the development of sewerage infrastructure under Namami Ganga.

- Under HAM, NMCG has sanctioned 31 numbers of projects in 22 packages worth of Rs. 11,292.49 crore. These projects are for the towns of Haridwar, Varanasi, Kanpur, Prayagraj, Mathura, Bareilly, Unnao, Shuklaganj, Agra, Meerut, Muzaffarnagar, Budhana, Moradabad, Patna, Kolkata Howrah, Bally, Baranagar, Asansol, Burdwan, Durgapur, North Barrackpore, Ayodhya, Saharanpur, and Garden Reach. These projects shall create / rehabilitate sewage treatment capacity of 2,588.88 MLD.
- Of the 22 packages taken up on hybrid annuity-based PPP model, 1 package for 82 MLD STPs at Haridwar, 1 package for 50 MLD STP at Ramana and 1 package of 30 MLD new STP and 20 MLD TTP at Mathura have already been implemented and commissioned.

Industrial Pollution Management

Tannery Cluster:

Three CETPs at Kanpur region connected with tanneries sector are being monitored on quarterly basis.

- **Jajmau Tannery Cluster:** There are 320 tanneries operating in Jajmau Cluster at Kanpur. They have installed primary effluent treatment plant and the outlet effluent is collected and treated at 36 MLD CETP (9MLD tannery wastewater + 27MLD sewage). NMCG has sanctioned the 20 MLD CETP & its associated components project for Jajmau Tannery Cluster, Kanpur, UP worth Rs. 617 crore (Phase-I).
- **Unnao and Banthar Tannery Cluster:** Banthar Tannery Cluster, Unnao, UP has 4.5 MLD CETP and has 27 Member Units. NMCG has sanctioned the project for upgradation of 4.5 MLD CETP with ZLD system with an estimated cost of Rs.108.93 crore excluding taxes (funding pattern 75% Central Govt. share and 25% from Banther SPV).
- **Mathura textile cluster:** NMCG has approved the upgradation of existing 6.25 MLD Mathura CETP project for Rs. 13.87 crore with a condition that NMCG and SPV share will be 75%: 25% i.e., Rs 10.40 crore & Rs. 3.47 crore, respectively and 100% operation and maintenance cost will be borne by SPV. The work (civil and electromechanical) has been completed and the project has been commissioned.

Water Quality Monitoring

Manual water quality: 97 locations by Central Pollution Control Board (CPCB) through respective State Pollution Control Boards (SPCBs) and collected data is compiled at CPCB.

Real-Time Water Quality Monitoring Stations (RTWQMS):

- Setting up RTWQM Stations on River Ganga: 36 Real-Time Water Quality Monitoring Stations (RTWQMS) are installed on main stem of river Ganga, tributaries and drains since March 2017. In addition to the existing 36 RTWQM stations, additional 40 RTWQM stations have been installed.
- Engagement of Data Qualification Consultant for 76 RTWQM stations: Data qualification services consultant has started validation of data for 40 RTWQM stations from 05.07.2022.

III. Ecology and Flow (Aviral Ganga)

As per the mandate given under the NMCG authority notification dated 7th October 2016, for maintaining ecological flow of water in river Ganga, NMCG on the 9th October, 2018 has notified the minimum ecological flow in the river Ganga required to be maintained at different points in different stretches at all times, starting from all the head streams of river Ganga up to Haridwar in Uttarakhand and from Haridwar to Unnao. A mechanism for monitoring of e-flow regime has also been put in place with the help of Central Water Commission (CWC).

Rural Sanitation

12 lakh Individual Household Latrines (IHHL) have been constructed across

4,507 villages in the States of Uttarakhand, Uttar Pradesh, Jharkhand, Bihar, and West Bengal. NMCG has released Rs. 829 crore to DoDWS for the construction of IHHL, Rs. 124 crore for SLWM and Rs. 67 crore for afforestation in Ganga villages. All villages situated along the bank of river Ganga have been declared Open Defecation Free (ODF).

Biodiversity

NMCG has established partnerships with Wildlife Institute of India (WII), Dehradun, Uttar Pradesh State Forest Department (UPSFD), Central Inland Fishery Research Institute (CIFRI), Barrackpore, Centre for Environment Education (CEE), World Wide Fund for Nature (WWF) India and Turtle Survival Alliance India (TSAI) is adopting a basin level approach through involvement of multiple stakeholders for biodiversity conservation and Ganga rejuvenation.

Under the biodiversity conservation program of NMCG, 10 projects have been sanctioned at a cost of Rs. 189 crore for the conservation & restoration of indigenous and endangered aquatic species of Ganga, such as Gangetic dolphin, otters, ghariyal, turtles and aquatic birds etc. by involving multiple stakeholders and to create awareness among the stakeholders for the conservation of these species in Ganga.

Biodiversity conservation activities under Namami Gange

Afforestation

A DPR was prepared by FRI Dehradun for afforestation of 1,34,104 hectares in the Ganga basin States of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, and West Bengal at an estimated cost of Rs. 2,293.73 crore. Implementation of the DPR has started from the year 2016-17 onwards, and expenditure of Rs. 347.0 crore has been incurred so far by the 5 State Forest Departments for plantation in 30,071 hectares.

30 projects have been sanctioned for afforestation works to the respective State Forest Departments of all the 5 States of Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal. For the year 2022-23, 3 projects have so far been sanctioned to the State Forest Department Uttar Pradesh, Jharkhand & West Bengal.

Details of the sanctioned projects are as under:

State	FY 2016-17 to 2021-22*		
	No. of projects sanctioned	**Cost (Expenditure in Rs. crore)**	**Total Area Covered under Plantation (in ha.)**
Uttarakhand	6	128.54	10,356
Uttar Pradesh	6	71.09	8,820
Bihar	6	97.76	7,896
Jharkhand	6	26.25	884
West Bengal	6	23.39	2,115
Sub total	**30**	**347.02**	**30,071**
	FY 2022-23 (ongoing)		
	No. of projects sanctioned	**Sanction Cost (in Rs. crore)**	**Area (in ha.)**
Uttarakhand	-	-	-
Uttar Pradesh	1	9.86	2100.25 +Maintenance
Bihar	-	-	-
Jharkhand	1	1.56	Maintenance
West Bengal	1	0.45	Maintenance
Sub total	3	11.88	2,100.25
Grand total	**33**	**358.9**	**32,171**

**Note: Costs mentioned for years 2016-17 to 2021-22 are the actual expenditure incurred by the respective State Forest Departments.*

In February, 2021, a study project was sanctioned to IIFM, Bhopal for "Mid-term evaluation of forestry plantations funded by NMCG", to know the efficacy of the interventions in five Ganga States. The findings of the project indicate overall good survival rate and growth of the plants due to good practices and adoption of suitable plantation models in natural, assisted and reconstructive Ganga river scape / land scape.


Afforestation along Ganga Basin

Wetland Conservation

Wetland conservation is an integral component of the 'Namami Gange' programme, under which 3 projects has been sanctioned to Uttar Pradesh, Bihar & Jharkhand at a cost of Rs. 7.17 crore for the conservation of wetlands.

IV. Research, Policy and Knowledge Management (Gyan Ganga)

Leading Research and Development

- **Bhuvan Ganga:** NMCG has MoU with NRSC/ISRO for supporting geospatial technology in 2015. Bhuvan Ganga, a mobile app geoportal, provides platforms to manage, access, visualize, share and analyze geo-spatial data, non-spatial data products and services to support NMCG objectives of environmental and ecological improvement within the Ganga river basin. There are 3,066 geo-taggings as on date with defined classes like industrial waste water, natural drain/ nallas, open defecation sewage, semi urban/rural sewage, solid waste disposal, urban sewage, plantation and other. The information shared by general public is very useful in preparing the DPR of the polluted stretch. Bhuvan Ganga app is widely using by NMCG in drain monitoring.
- **LiDAR Mapping:** NMCG has collaborated with Survey of India, for mapping the Ganga basin in high resolution generating Digital Elevation Models (DEM). Deliverables of mapping would be Digital Elevation Model/ Digital Terrain Model (The bare earth model has vertical accuracy better than 50 cm), contour of 1.0 m, ortho-photos (25 cm ground sampling distance or better), GIS ready dataset, outlet/ vent of sewerage and other discharge from all dwelling units, industrial, commercial and all type of other institutions mapping from the sources outlet to the public drainage network, the entire public network integrated with the present project mapping, crematoria, ghats, RFD, solid waste disposal sites, STP/ETP/ CETP etc. for defined project area of interest. This technology enables identification of entire topography of an area making it easy for policy makers to analyse the available data and improve decision-making process. Critical pollution hotspots are also easily identified through this technology. Mapping area is 43,084 km^2 along the 10 km buffer of river.
- **Environmental Flow Assessment using GIS, RS, Survey:** Environmental

flow assessment for Yamuna river from Hathnikund barrage to Okhla barrage was implemented by NIH, Roorkee. Project cost was Rs. 104.62 lakh.

- **Cultural Mapping using GIS:** NMCG in partnership with INTACH is carrying out the cultural mapping of the main stem of the Ganga from origin to Ganga Sagar documenting the rich natural, built and intangible heritage.
- **'Satellite Image-derived Water Quality Research" using Remote Sensing:** The pilot project on 'Satellite Image-derived Water Quality Research (SIWAR)–River Ganges" was executed by World Resources Institute (WRI) India to understand if satellite image-derived water quality measurements can effectively supplement in-situ water quality monitoring.

International Dialogues and Conferences:

- **Singapore International Water Week 2022-** On 17th April 2022, NMCG hosted a Hot Issues Workshop in the Singapore International Water Week 2022 on the topic 'Sustainable Waste water Management in Developing Countries - An Innovative Indian Approach in River Rejuvenation'. DG-NMCG and ED-Technical participated in the workshop virtually.
- **Israel visit:** Executive Director (Technical), NMCG along with 25 officers of Central and State Governments visited Israel to attend a course on "Urban Water-Regulation, Technology and Economics of Sustainable Water Management at Urban Centers" from 7th to 17th May 2022.
- **Stockholm World Water Week 2022:** NMCG participated and organized sessions in Stockholm World Water Week 2022. NMCG organized a virtual session on 'Arth Ganga: Model for Economic River-People Connect for Sustainable River Rejuvenation using Economic Bridge' and an onsite session on zero liquid discharge cities.

Stockholm World Water Week 2022

- **World Water Congress Denmark:** On 12th September 2022, Hon'ble Minister of Ministry of Jal Shakti and DG-NMCG attended World Water Congress at Copenhagen, Denmark. During the Conference, DG NMCG participated as a speaker in a session that focused on 'Innovative funding for SDG's and Climate Change' wherein he shared the several efforts undertaken under Namami Gange mission.

World Water Congress Denmark

- **International River Symposium, Vienna:** From 28th to 30th November 2022, NMCG participated in the International River Symposium, Vienna. On 28th November, DG NMCG presented on the topic 'Addressing Pollution & Ecosystem Degradation in the Ganga' in the session 'River monitoring, protecting, restoring and managing rivers from a triple planetary crisis angle (nature-climate-pollution)'.

V. People River Connect (Jan Ganga)

a) River Front Development (RFD), Ghat, Crematoria and Kunds/ Ponds rejuvenation

77 projects have been sanctioned for construction of 219 ghats and promenades, 62 crematoria and rejuvenation of 8 kunds/ ponds. 191 ghats, 49 crematoria and 8 kunds have been completed in Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, West Bengal and Madhya Pradesh.

b) Ghat Cleaning

As part of Namami Gange initiative, ghat cleaning projects were taken up at various locations along the river Ganga. In Rishikesh, a ghat cleaning project, at a cost of Rs 2.35 crore is going on for cleaning of 8 ghats. Similarly, in Varanasi a ghat cleaning project, at a cost of Rs. 8.21 crore is going on for cleaning of 88 ghats.

c) Important Activities (under Jan Ganga)

Magh Mela in Prayagraj: From 14th January, 2022 Magh Mela an annual festival was started near the banks of river Ganga. This year, an exhibition was set up by team Namami Gange and a presentation was made wherein the significant information was imparted to the visitors about the Namami Gange Programme.

Wings India at Hyderabad: National Mission for Clean Ganga set-up a pavilion at Civil Aviation, Wings India-2022 held at Begumpet Airport, Hyderabad from 24th to 27th March 2022. The event was jointly led by the Ministry of Civil Aviation of India (MoCA) and the Federation of Indian Chambers of Commerce and Industry (FICCI), on the theme of 'India@75: New Horizon for Aviation Industry'. The pavilion was honored by the presence of Hon'ble Governor of Telangana, Dr. Tamilisai Soundararajan and Hon'ble Minister of Civil Aviation, Shri Jyotiraditya M. Scindia.

National Mission for Clean Ganga set-up a pavilion at Civil Aviation, Wings India-2022 held at Begumpet Airport, Hyderabad from 24th to 27th March 2022

Yamuna Par Azadi Ka Amrit Mahotsav: NMCG organized 'Yamuna Par Azadi Ka Amrit Mahotsav' on 16th August 2022 at Zero Pushta, Sonia Vihar along river Yamuna in the presence of Shri Gajendra Singh Shekhawat, Hon'ble Union Minister for Jal Shakti, Shri Pankaj Kumar, Secretary, Do WR, RD & GR, Ministry of Jal Shakti, Shri G. Asok Kumar, Director General, NMCG and Shri Ganji K. V. Rao, Director General, Tourism, Ministry of Tourism.

Yamuna Par Azadi Ka Amrit Mahotsav organised by NMCG on 16th August 2022

Training Programme on Water as Leverage: On 17th and 18th October 2022, NMCG in association with Embassy of Netherlands organized a two - day training programme on Water as Leverage (WaL) to explore the applicability, scalability and replicability of the concept in India. The Workshop was attended by NMCG officials, Programme Manager and Delegated Commissioner, Ministry of Infrastructure and Water Management and delegates from CWC, NIH, Govt. of Kerala, West Bengal, Delhi Jal Board, GIZ India.

NMCG organized Training Programme on Water as Leverage on 17th and 18th October 2022, in association with Embassy of Netherlands

Ganga Utsav 2022- On 4th November 2022, NMCG organised Ganga Utsav 2022 to commemorate the declaration of river Ganga as the national river, along with celebrating all rivers in the country. As this was a part of the Azadi Ka Amruth Mahotsav celebrations, the Chief Guest of the morning session was Shri G. Kishan Reddy, Union Minister for Culture, Tourism & DoNER, who was joined by Shri Bishweswar Tudu, Hon'ble Minister for State of Ministry of Jal Shakti and Ministry of Tribal Affairs, H.E. Freddy Svan, Royal Danish Ambassador to India, Sh. Sriram Vedire, Advisor, Ministry of Jal Shakti and Sh. G. Asok Kumar, Director General, NMCG. The Chief Guest of the evening session was Shri Gajendra Singh Shekhawat, Hon'ble Union Minister of Jal Shakti. He was joined by Shri Pankaj Kumar, Secretary, Department of Water Resources, River Development and Ganga Rejuvenation and DG, NMCG. More than 15,000 people participated in the day long events in the National Stadium premises, Delhi.


Glimpses of Ganga Utsav 2022 Celebration on 4th November, 2022

7th India Water Week 2022: On 1st November 2022, during the 7th India Water Week 2022, NMCG organized a session on Ganga Rejuvenation from the Lens of UN Sustainable Development Goals. The speakers of the sessions included Ambassadors of countries such as Israel, Netherlands and Denmark, renowned academicians, eminent leaders and policy practitioners, current and former government officials, etc. NMCG also had set up the Namami Gange Pavilion, which was inaugurated by Shri Gajendra Singh Shekhawat, Hon'ble Union Minister of Jal Shakti and Ms. Maryprisca Winfred Mahundi (MP) Hon'ble Dy Minister of Water, Tanzania in the presence of DG, NMCG and other NMCG officials.

7th India Water Impact Summit (IWIS): The 7th edition of the India Water Impact Summit was organized by NMCG and Centre for Ganga River Basin Management and Studies (c-Ganga) in a hybrid mode at Dr. Ambedkar International Centre (DAIC), New Delhi from 15th to 17th December 2022. The theme of summit was 'Restoration and Conservation of Small Rivers in a Large Basin" with emphasis on the select aspects of 'Mapping and Convergence of 5Ps' - People, Policy, Plan, Programme and Project. The objective of the summit is to impart impetus towards developing water and environmental infrastructure to protect rivers and water bodies in India. The summit was inaugurated by Shri Gajendra Singh Shekhawat, Hon'ble Union Minister for Jal Shakti in the presence of Shri Bishweswar Tudu, Minister of State for Jal Shakti, Secretary, Department of Water Resources, River Development and Ganga Rejuvenation, DG, NMCG and Founding Head, cGanga, IIT-Kanpur.

Glimpses of 7th India Water Impact Summit from 15th-17th December 2022

Ganga Vichar Manch (GVM) Workshop: On 19th December, 2022, DG, NMCG attended the Ganga Vichar Manch workshop presided over by Union Minister Jal Shakti Presided. The workshop serves as a forum for interactive dialogue among Ganga stakeholders. Addressing GVM members, the Union Minister for Jal Shakti stated that GVM provides people with the opportunity to suggest tangible solutions, debate, and volunteer in the conservation of River Ganga, and he also congratulated GVM volunteers on their efforts on the ground, as Namami Gange has been named one of the world's top ten flagship initiatives to restore nature by the United Nations Environment Programme (UNEP).

NMCG organised Ganga Vichar Manch on 19th December 2022

Mann Ki Baat: On 25th December 2022, during 96th episode of Mann ki Baat, Hon'ble Prime Minister of India mentioned about the importance and integral connection of river Ganga with our way of life. He stated that it is our big responsibility to keep mother Ganga clean and for the same reason, Namami Gange was launched eight years ago. He applauded the efforts undertaken within Namami Gange which has not only gained humongous public participation in India but also gain international recognition by being selected as top ten initiatives to restore the ecosystem among 160 such initiatives across globe.

VI. Arth Ganga

Six key verticals identified for Arth Ganga: (i) Zero Budget Natural Farming; (ii) Monetisation of Reuse of Sludge & Wastewater; (iii) Public Participation; (iv) Culture Heritage & Tourism; (v) Livelihood Generation Opportunities; (vi) Institutional Building.

Sustainable agriculture and allied areas:

Several meetings with important stakeholders held including Ministry of Agriculture, Patanjali, Art of Living, FICCI, IFAD, WRI, IUCN practitioners of Natural Farming etc. to explore its replication in Ganga basin.

- Ministry of Agriculture & Farmers' Welfare in the Annual Action Plan for 2022-23 & 2024-25 for Natural Farming under BPKP, approved for Uttarakhand (6,400 ha), UP (85,710 ha), Bihar (52,000 ha) & Jharkhand (4,000 ha).
- Under Namami Gange mission, 6,181 clusters and 1, 23,620 ha area have been covered for organic farming.

- Study on "Evaluation of Natural Farming practices on water and energy savings and Enhancement of Soil Fertility & Crop Productivity" by WALAMTARI, Andhra Pradesh, sanctioned on 20th June 2022.
- Exploring possibility of marketing organic/natural farming products of Ganga Basin with the help of several Corporates including ITC, Hindustan Unilever and Patanjali etc.
- More than 1.6 crore trees planted in 30,000 ha areas.
- Ranching of more than 65 lakh IMC fingerlings by CIFRI – more than 76,000 adult Hilsa and 5.8 lakh spawn were ranched over 740 programmes in the river Ganga.
- EoI for promotion of natural farming in Ganga basin with objective of capacity building of farmers attracted 56 submissions.

MoU signed with Patanjali on 31st October 2022 for promotion of organic farming

MoU signed with Sahakar Bharti on 16th August 2022 for promotion of organic farming

Reuse of Treated Waste Water (TWW) & Sludge

- MoU signed with Railways 3rd December 2015 – DSEs of Agra, Jhansi & Prayagraj Railway Divisions have been designated as nodal officers for creating infrastructure for reuse of treated waste water from STPs.
- Under Mathura sewage scheme, 20 MLD Tertiary Treatment Plant is completed and now supply of treated water to Indian Oil Corporation's Mathura Refinery for non- potable purpose has started. As of now, about 8 MLD treated water is supplied to IOCL.
- NMCG in association with Ministry of Power has mapped 15 STPs within 50 km radius of Thermal Power Plants (TPPs). Based on the mapping, Ministry of Power has taken up initiatives for studying the feasibility of using the treated waste water from identified STPs.

Livelihood Generation Opportunities

- Project Jalaj – "Connecting river and people to realise Arth Ganga" is a livelihood model involving participation and empowerment of local people, especially women towards realizing bio-diversity sensitive tourism involving boat safaris, home stays, marketing of local handicrafts and food items etc. is being implemented at 75 locations though WII.

7.3.6 NARMADA CONTROL AUTHORITY (NCA)

The Authority is headed by the Secretary, DoWR, RD & GR, as its Chairman,

with Secretaries of the Union Ministries of Power, Environment, Forests and Climate Change, Social Justice & Empowerment and Tribal Welfare, Chief Secretaries of the four Party States, viz. Madhya Pradesh, Maharashtra, Gujarat & Rajasthan, one full time Executive Member and three full time independent Members appointed by the Central Government and four part time members nominated by Party States.

The Review Committee for Narmada Control Authority (RCNCA) is headed by the Union Minister of Jal Shakti, Union Minister for Environment, Forest and Climate Change and Chief Ministers of four Party States viz. Madhya Pradesh, Rajasthan, Maharashtra & Gujarat as members and Secretary (WR, RD&GR) is the convener.

The Narmada Control Authority has its headquarter at Indore (MP) and regional offices at Indore, Bhopal & Vadodara, liaison unit in New Delhi and field offices at Mandla, Hoshangabad, Kevadia and Indore.

In pursuance of sub-clause 16(1) clause-XIV of the Narmada Water Disputes Tribunal, Sardar Sarovar Construction Advisory Committee was constituted on 04.09.1980 for ensuring efficient, economical and early construction of Units-I and III of Sardar Sarovar Project. Further in pursuance of sub-clause 16(1) of clause-XIV, the Sardar Construction Advisory Committee (SSCAC) was dissolved on 11th August 2020 and the post construction management of Units-I and II will be by Gujarat under the supervision of Narmada Control Authority (NCA).

PROGRESS OF SARDAR SAROVAR PROJECT (SSP)

i) SARDAR SAROVAR DAM

As per decision of 89th meeting of NCA held on 16th June, 2017, the work of lowering of gate of SSP was completed by the GoG and reservoir permission schedule to fill the SSP reservoir up to FRL EL 138.68 m was finalized by the SSRRC in its 51st meeting on the basis of the draft schedule submitted by GoG as per Indian Standard Code 15272:2004 guidelines and other technical standards being followed. Due to lesser rain in 2017 leading to deficit in utilizable flow in order of 45%, the SSP reservoir was filled up to EL 130.75 m only in the month of September, 2017. The reservoir got filled up to FRL (138.68 m) during the monsoon 2019, 2020 and 2022 due to sufficient rainfall in the basin. An expenditure of Rs. 73, 611.89 crore has been incurred on Sardar Sarovar Project up to October, 2022.

ii) NARMADA MAIN CANAL

Work on Narmada Main Canal (NMC) from head regulator to Gujarat Rajasthan border (Ch. 0 to 458.318 km) has been completed. Work of 74.0 km. Narmada Main Canal in Rajasthan is also completed. In Gujarat, the work on all branch canals of NMC from 0 to 458.138 km has been completed except Kachchh Branch Canal. 96.15% work of distributaries, 92.83% work of minors and 88.64% work of sub-minors are completed in Gujarat.

In Rajasthan, 100% work of main canal, distributary (flow) and distributary (lift), minors & sub minors (flow) are completed and 99.9% minor and sub minor (lift) are completed up to March, 2022. The project can be considered as completed

iii) UTILIZATION OF WATER

Narmada water is being supplied to central Gujarat, north Gujarat and Saurashtra region of Gujarat from the Sardar Sarovar Dam. Government of Gujarat has created an irrigation potential of 16.93 lakh ha out of which 10.59 lakh ha has been irrigated during the water year, i.e., July, 2021 to June, 2022. A quantum of 8,764.12 MCM of water was provided during this water year in Gujarat and Rajasthan portion, out of which 516.86 MCM of water has been utilized by Rajasthan. Rajasthan has also created an irrigation potential of 2.46 lakh ha to utilize Narmada water. Drinking water is being provided to 1,541 villages & and 3 towns - Sanchore, Bhinmal and Jalore Town of Jalore District in Rajasthan. 1.81 lakh ha area has been irrigated during the water year.

RESETTLEMENT AND REHABILITATION ASPECTS OF SSP

The 37th Task Force Meeting of NCA on rehabilitation and resettlement issues of SSP was conducted on 26th November, 2020. Data on Project Affected Families (PAFs) till December, 2020 was compiled and further updated upto 30th September 2022 based on information furnished by the Party States. The details are given in the following table:

Category	State			Total
	Gujarat	Maharashtra	Madhya Pradesh	
Total number of fully affected villages	03	00	01	04
Total number of partially affected villages	16	33	177	226
Total	**19**	**33**	**178**	**230**
Total number of Project Affected Families	4,765	4,188	23,603	32,556^
Total number of PAFs resettled in	GJ: 4,765	GJ: 752	GJ: 5,540	11,057
	MH: Nil	MH: 3,436	MH: Nil	3,436
	MP: Nil	MP: Nil	MP: 18,063	18,063
Number of R&R sites planned/ developed	236	14	88	338
No. of R&R sites Operational	223	14	83	320

^The number of PAFs may change due to addition/deletion of genuine/false PAFs likely to be declared by GRA/ State Governments.

7.3.7 BRAHMAPUTRA BOARD (BB)

The Brahmaputra Board was constituted by an Act of Parliament and received the assent of the President on 01.09.1980 for planning and integrated implementation of measures for the control of floods and bank erosion in the Brahmaputra valley and for matters connected therewith.

The Board consists of 21 members under the Chairman, Brahmaputra Board (4 full time members and 17 part time members). The jurisdiction of Board covers all the North Eastern States including Sikkim and North Bengal. The organizational setup of Brahmaputra Board has been modified after restructuring order issued by GoI on 10.01.2019 which provides for establishment of regional offices headed by Dy. Chief Engineer/Superintending Engineer in all the State capitals of North Eastern States. All the 9 (nine) regional offices set up as a part of restructuring have started functioning in close coordination with respective State Governments.

A High Powered Review Board was constituted with the Union Minister of Jal Shakti as the Chairman, Chief Ministers of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Union Minister / Ministers of State- Finance, Surface Transport, Power, Agriculture, Ministers of State - Jal Shakti and Secretary, Department of Water Resources, RD & GR, Govt. of India, Chairman, Central Water Commission as members and Chairman of Brahmaputra Board as the member-secretary. Member (RM), CWC is a permanent invitee.

THE NORTH EASTERN HYDRAULIC & ALLIED RESEARCH INSTITUTE (NEHARI):

The institute was established under Brahmaputra Board at Rudreswar, North Guwahati as per clause 7 of Assam Accord in 1996. However, due to various reasons, the institute declined in its functioning and the labs became dysfunctional. It was decided to renovate the laboratories during 2018-2019. Accordingly, a project was taken up since 2018-19 which has successfully been executed, renovating the entire infrastructure of the institute by making laboratories up to date. The renovated NEHARI was inaugurated on 14.01.2021 by the Hon'ble Minister Jal Shakti at Guwahati. An MoU for mutual cooperation in research and training activities between IIT Guwahati and NEHARI, Brahmaputra Board has also been signed. MoU has also been signed with CSMRS, New Delhi and CWPRS, Pune. For capacity building in water resources planning, year-long training of manpower has been organised from 2021-22 to 2022-23 in association with NIH, CWPRS, CSMRS, NERIWALM, NESAC, CGWB and CWC.

North Eastern Hydraulic and Allied Research Institute (NEHARI)- Study of Physical Model in the covered Model Tray- Brahmaputra Board

MAJOR FUNCTIONS

The main objectives of Brahmaputra Board are management and control of flood and bank erosion and improvement of drainage giving due importance to the development and utilization of water resources of the Brahmaputra valley for irrigation, hydropower, navigation and other beneficial purposes.

ACHIEVEMENTS:

i) Master Plans

The Board had taken up preparation of master plans of the main stem of the Brahmaputra and Barak along with 68 major tributaries including Majuli island, river Dhaleswari and rivers of Meghalaya, Mizoram, Manipur and Tripura in three parts.

Preparation of Manipur River Master Plan and updation of Hoara River Master Plans is going on and updation of Master Plan of main stem Brahmaputra, Barak, South flowing river of Meghalaya, rivers of Mizoram have been initiated for taking up during this year.

Three Master Plans (Tangani, Kynshi and Sankosh-Raidak) are under updation using latest state of art modern technology. Modification of draft Master Plan of Teesta basin is also being taken up.

ii) Survey & Investigation and Preparation of Detailed Project Reports of Multipurpose Projects:

- Brahmaputra Board took up survey & investigation of 14 multipurpose projects in Brahmaputra and Barak basin and in the south flowing rivers of Meghalaya. Status of these projects is summarised in ***Annexure-IX***.
- Under scientific dissemination and improvement of water management practices of local tribes and indigenous people of NE region, Board has taken up (i) Water Management practices of Apatani inhabited Ziro Valley and Pakke Valley in Arunachal Pradesh; (ii) Water conservation and Management practices of Chakhesang tribe of Phek district in Nagaland; and (iii) Dong Water Management practices of Bodo tribes of Baksa district in Assam in association with NERI-WALM.
- Pilot schemes of springshed management at Mizoram, Nagaland and Arunachal Pradesh are also proposed during 2022-23.
- Bio-engineering measures for flood and erosion management - A pilot project of bio-engineering measures for river bank erosion of Brahmaputra at right bank downstream of Kordoiguri of river Brahmaputra at Majuli island is under progress.
- For preparation of Detailed Project Report to check flash flood and erosion in BTC area by Pagla/Baitamari, Aie, Beki, Pagladiya, Sankosh, Gangia and Saralbhanga rivers, work has been allotted to WAPCOS. The preparation of draft DPR is in progress.

iii) Anti-Erosion and Flood Management Schemes

Protection of Majuli Island from Flood and Erosion:

Majuli is the largest inhabited fresh water river island in the world. It is situated between latitudes 26º45'N and 27º10'N, and longitudes between 93º40'E and 94º35'E. Majuli island has constantly been subjected to erosion by the mighty Brahmaputra. Responsibility for under taking anti-erosion works for protection of Majuli island was given to Brahmaputra Board in the year 1999. Physical activities on the ground started in the year 2004.

Majuli main island was 502.21 sq km in the year 2004. Since then, with regular implementation of anti-erosion/bank protection measures, the total area of Majuli island had increased to 524.29 sq km till the year 2016. Works under immediate measures, emergent measures, Phase-I, Phase-II & III have been completed. A new scheme for protection of Majuli island from flood and erosion of river Brahmaputra for Rs. 233.57 crore was approved by the then Ministry of Water Resources and Ministry of DoNER allocated Rs. 207 crore for the same. Execution of the scheme is in progress. 97% of the work has been completed so far. Board has assigned work of office campus at Majuli to NPCC as PMC for monitoring of protection work and for further survey and investigation activities and 61% works have been completed till November 2022.

Protection of Majuli Island from flood and erosion of river Brahmaputra –Laying of Cement Concrete Block at Kamalabari Ghat, Majuli (Assam)

Restoration of Dibang and Lohit Rivers at Dhola –Hatiguli:

The scheme "Avulsion of Brahmaputra at Dhola-Hatighuli (measures for diversion of rivers Dibang and Lohit to their original courses) with ancillary anti-erosion measures" was approved by Ministry of Water Resources, Government of India in the Technical Advisory Committee (TAC) meeting held in May, 2002 and the Board was entrusted with the responsibility for execution of the scheme. Expenditure of Rs 93.93 crore has so far been incurred by the Board on execution of works envisaged under Phase-I, Phase-II, Phase-III, Phase-IV and Phase-V.

For continuation of benefits accrued from the schemes implemented in four phases of works of scheme Avulsion of Brahmaputra at Dholla Hatghuli, it is proposed to convert the existing tie-bund into a full-fledged embankment at Bahbari. Work estimated at Rs. 24.95 crore is under implementation and 91% work has been completed up to November, 2022.

Conversion of Tie-bund into embankment on River Brahmaputra Near Dibrugarh, Assam

7.3.8 BETWA RIVER BOARD (BRB)

A decision to harness the available water resources of Betwa river was taken in a meeting held on 22nd July, 1972 between Chief Ministers of Uttar Pradesh and Madhya Pradesh. Further Uttar Pradesh and Madhya Pradesh in a meeting held on 9th December 1973 agreed for setting up of a tripartite Control Board for the speedy, smooth and efficient execution of the various inter-State projects of both the States. BRB was constituted in 1976 by an Act of parliament to execute the Rajghat dam project and power house. The project authority started construction of the project under the overall guidance of BRB after promulgation of BRB Act 1976. The benefits and costs of the above projects are being shared equally by both the State Governments.

The Union Minister (Jal Shakti) is the Chairman of the Board. Union Minister of Power, Union Minister of Water Resources, Chief Ministers and Ministers-in-charge of Finance, Irrigation and Power of the two States are its members. An Executive Committee of the Board headed by Chairman, CWC manages the activities of the Board.

Rajghat Dam Project

The Rajghat dam with appurtenant structures has been constructed across river Betwa to provide irrigation facilities to 1.38 lakh ha in Uttar Pradesh and 1.21 lakh ha in Madhya Pradesh with power generation of 45 MW through Rajghat Hydro Electric Project at the toe of dam on left flank. The costs as well as benefits of the project are to be shared equally by both the States. Construction works of dam and power house have been completed.

i) Land Acquisition

The dam submerges 38 villages in U.P. and 31 villages in M.P. State. Compensation in M.P. area is completed. In U.P., the District Administration, Lalitpur had paid the land compensation of 25 villages and Betwa River Board have paid the compensation of 13 villages by mutual negotiation except the property compensation of village Kalapahar between FRL and MWL and the case has already been submitted for its valuation to the concerned Department of Uttar Pradesh.

ii) Planning and Present status of Rajghat Power House works

The estimated cost of Rajghat Hydro Electric Project at 1997 price level was Rs. 131.26 crore which included Rs. 58.41 crore for the civil works. The revised cost of the civil works of power house is Rs.66.89 crore at December, 1999 price level. MPPGCL has contributed Rs.59.51 crore. The total expenditure incurred on civil works of Rajghat Power House till June, 2008 is Rs.63.15 crore.

The three units of power house have been tested and commissioned during 1999-2000. From 1999-2000 to 2021-2022 (22 years), electricity generation from Rajghat Power House is 19,748.88 lakh units. The electricity generation during 2022-23 (upto 31.12.2022) is 1,049.82 lakh units. The completion cost of Rajghat Dam is Rs 300.60 crore at 2000 price level. The expenditure on dam is being booked in O&M head since October, 2005 as per decision taken in the meeting held on 02.02.2006 under the chairmanship of Secretary, MoWR. The State of U.P. has paid Rs 213.60 crore and M.P. has paid Rs 135.99 crore against their due share up to December, 2022.

7.3.9 TUNGABHADRA BOARD (TB)

Tungabhadra Board was constituted by the President of India in exercise of the powers vested under sub section (4), section 66 of Andhra State Act 1953 for completion of the Tungabhadra project and for its operation and maintenance. The Board consists of a Chairman, appointed by the Government of India, and four members, one each representing the States of Andhra Pradesh, Telangana, Karnataka and Government of India.

The Government of Andhra Pradesh and the Government of Karnataka provide funds in agreed proportions and also depute staff to man the various specified posts as per the agreed ratio.

Physical and Financial achievements and new initiatives

i) Irrigation Wing

- The Tungabhadra Reservoir has been filled upto the full reservoir level 497.740 m (1633.00 ft.) in this year. The inflow into the reservoir from June, 2022 to December, 2022 is 17,173.116 Million Cubic Meters (606.481 TMC). The utilization by States of Karnataka, Andhra Pradesh & Telangana till end of December 2022 during the water year 2022-23 is as per the table below;

Sl. No.	Name of the State	Allocation as per KWDT Award (TMC)	Prorata Entitlement on Abstraction (TMC)	Actual Utilization in TMC (As on 31.12.2022)	Actual Utilization in M Cum (As on 31.12.2022)
1.	Karnataka	138.99	123.255	82.965	2,349.237
2.	Andhra Pradesh	66.50	58.972	36.008	1,019.602
3.	Telangana	6.51	5.773	0.00	0.00
	Total	**212.0**	**188.000**	**118.973**	**3,368.839**

The evaporation losses from June, 2022 to December, 2022 are 174.115 M Cum (6.149 TMC). The reservoir evaporation loss is shared by the States of Karnataka and Andhra Pradesh in the ratio of 12.50:5.50. The water surplus over spill way is 11,447.281 MCum (404.269 TMC) in addition to 1,001.650 MCum (35.374 TMC) of water drawn for extra power

generation by the power houses on both sides of dam without jeopardizing the irrigation interests during the water year 2022-23.

This year Tungabhadra Dam received a record inflow of 17173.116 Mm^3 (606.481 TMC) after 61 years and also made a record release of flood water through spillway of 11,447.281 Mm^3 (404.269 TMC) after 61 years (i.e., after 1961-62).

- Due to completion of modernization of RBHLC from km 0.00 to 105.00 (except Canal Cross drainage works (UT, Aqueduct & Super passage), km 0 to 40 deep cut reaches and stabilisation works at some reaches, the velocity of water flow in the canal has improved substantially and the canal is now able to draw the designed discharge of 4,000 cusecs (against earlier discharge of 3,200 cusecs) at its head and has delivered a discharge of 2,350 cusecs already and is capable of carrying the design discharge of 2,575 cusecs at Andhra Pradesh border (against earlier discharge of 1,500 cusecs) subject to readiness of canal from Andhra Pradesh side.
- Completion of modernization of power canal and modernization of RBLLC (old unlined canal) upto 115 km (out of 250 km) and partial modernization of RBLLC from km 115 to km 205 have resulted in increased realization of around 1,100 cusecs at km 133 (against earlier realization of 750 cusecs) and around 600 cusecs (average) at km 250 i.e., AP border against earlier realization of 400 cusecs (average) and for some period the discharge even has crossed 700 cusecs. Further, modernization works for the balance reach from km 205.450 to km 250.580 of RBLLC will be taken up during 2023-24 closure period.
- **Transparency in Water Accounting and Measurement:**

  Now the TB canals are closed during good rainy spells and optimum water usage methods are adopted as a mark of good water accountability.
- **Dam Rehabilitation and Improvement Project works (i.e., under DRIP-II) for Tungabhadra Dam – Inspection by DSRP Team & World Bank Team:**

  Tungabhadra dam was included in the DRIP-II. As there were some differences in the procedure for execution of work & accountability under the supervision of TB Board, the Board in its 218th meeting held on 26.05.2022 decided to take up the right side dam safety works of Tungabhadra dam with its own funds on the similar lines of modernization works taken up for TB Board

canals viz., RB HLC, Power Canal & RB LLC.

ii) Hydro Electric Scheme

Two power houses are being maintained by the Tungabhadra Board with a total installed capacity of 72 MW and 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 as in 2021-22 after 12 years for a worth of Rs.61.50 crore. The power generated is shared between the States of Karnataka and Andhra Pradesh in the ratio of 20:80.

A mini hydel plant at the head of Right Bank High Level Canal of the Tungabhadra Project under Build, Operate, Own and Transfer (BOOT) system through an independent power producer has been commissioned on 27.10.2004. The mini hydel plant comprising 3 units of 2.75 MW each generated 27.00 million units up to December 2022. The power generated is purchased by the transmission corporations of Karnataka and Andhra Pradesh in the agreed ratio of 20:80.

One more new mini hydel plant was implemented at the head of Rayabasavanna canal of Tungabhadra Project under BOOT system through an independent power producer. The project construction was started in September 2012 and commissioned in record time of 11 months, i.e., on 31.08.2013. The total project capital cost is Rs.11.50 crore. The mini hydel plant comprising single unit of 1.4 MW has generated 5.8 million units upto December 2022. The power generated is purchased by GESCOM, Gulbarga (Karnataka) at the rate of Rs. 2.80 per unit.

iii) Fisheries Wing

In order to facilitate preservation of fish catch, the Board was running an ice-cum-cold storage plant upto 31.05.2022. The gross earning from the ice plant and fish farms upto May, 2022 is Rs.25.68 lakh.

7.3.10 POLAVARAM PROJECT AUTHORITY (PPA)

Polavaram Irrigation Project (PIP) is a multi-purpose irrigation project which is on the river Godavari near Ramayyapeta village of Polavaram mandal, about 42 km upstream of Sir Arthur Cotton Barrage, where river emerges out of last range of the Eastern Ghats and enters the plains in West Godavari District of Andhra Pradesh State. It envisages construction of a dam to create ultimate irrigation potential. The project also envisages generation of 960 MW of hydropower, 23.44 TMC for water supply to industries and drinking water to 28.50 lakh population & Visakhapatnam, sharing of 5 TMC and 1.5 TMC of water from reservoir rim with Odisha and Chhattisgarh respectively, stabilization in Godavari delta including 8 TMC for Samarlakota Branch Canal and diversion of 80 TMC of water to Krishna river basin as per GWDT Award.

The project has been declared as a national project as per section 90 of Andhra Pradesh Reorganisation Act, 2014. Central Government is funding100% of the remaining cost of the irrigation component only of the project for the period starting from 01.04.2014. Government of Andhra Pradesh is executing the irrigation component of the project on behalf of Government of India. The power component of the project is being executed by APGENCO.

In pursuance of the Andhra Pradesh Reorganization Act, 2014, the Central Government constituted a Governing Body for Polavaram Project Authority vide the Ministry of Water Resources Notification dated 28th May, 2014. The Authority is playing an important role in executing the project in guiding WRD in all important aspects of the project execution such as designs, monitoring of the progress, quality control, land acquisition & rehabilitation (LA and R&R) of the project affected people etc. M/s WAPCOS Limited has been engaged for project monitoring & coordination consultancy services and CSMRS, New Delhi as quality consultant.

Estimated Cost of the Project:

The 2nd Revised Cost Estimate (2nd RCE) at 2017-18 PL was examined in CWC and was accepted by Advisory Committee of DoWR, RD & GR in its 141st meeting held on 11.02.2019 for an amount of Rs. 55,548.87 crore.

Subsequent to the acceptance of Advisory Committee of DoWR, RD&GR, a Revised Cost Committee (RCC) was formed under the chairmanship of JS & FA of DoWR, RD & GR on 02.04.2019 to examine the cost escalation of Polavaram Irrigation Project. The committee, in its report submitted to DOWR, RD & GR on 17.03.2020, recommended the 2nd RCE as Rs.47,725.74 crore at 2017-18 PL.

Status of Land Acquisition and Resettlement & Rehabilitation

373 habitations of 222 revenue villages in 8 mandals are in submergence area and working area in ASR district (erstwhile East Godavari) and Eluru District (erstwhile West Godavari) in Andhra Pradesh. Out of these, 165 revenue villages in 5 mandals (Chinturu, VRPuram, Yetapaka, Kunavaram & Devipatnam) are in ASR District and 57 revenue villages in 3 mandals (Polavaram, Kukunoor & Velairpadu) are in Eluru District.

As per 141st meeting of Advisory Committee (2nd RCE), excluding Government and forest land, about 1,55,464.88 acres of land are to be acquired for the Polavaram Irrigation Project, of which the RCC in its report of March 2020 has recommended as 1,27,262.79 acres. Out of 1,27,262.79 acres, an extent of 1,13,119.07 acres has been acquired till November 2022 and a balance of 14,143.72 acres of land is to be acquired.

DETAILS OF REHABILITATION & RESETTLEMENT				
Sl. No.	Item	upto EL+41.15m (Phase -1)	above EL+41.15m (Phase -2)	Total
1	Mandal Affected	6	2	8
2	Revenue Villages Affected	54	168	222

DETAILS OF REHABILITATION & RESETTLEMENT				
Sl. No.	Item	upto EL+41.15m (Phase -1)	above EL+41.15m (Phase -2)	Total
3	Habitations Affected	123	250	373
4	Habitations Shifted	38	0	38
5	Balance Habitations	85	250	335
6	Total R&R Colonies	75	138	213
7	R&R Colonies Completed	26	0	26
8	Balance R&R Colonies	49	138	187
9	Total PDFs	20,946	85060	1,06,006
10	No. of PDFs Shifted	11,521	0	11,521
11	**Balance PDFs to be shifted**	**9,425**	**85,060**	**94,485**

Physical and Financial Achievements:

The project is in an advanced stage of construction. The physical and financial progress of Polavaram Irrigation Project as submitted by Water Resources Department, Government of Andhra Pradesh upto November, 2022 is as follows:

Sl. No.	Description	% of Physical progress (upto Nov, 2022)
1	Earthwork	86.99
2	Concrete	81.15
3	Structures	69.83

Sl. No	Description	% of financial progress (upto Nov, 2022)
1	Head works	76.69
2	Right main canal	92.75
3	Left main canal	72.33
4	Total Project (Works)	78.64
5	LA and R&R	22.16
Overall Project Works + LA and R&R)		**48.04**

Expenditure on the project:

Expenditure of Rs. 20,736.31 crore has been incurred on the project since inception till November, 2022. An expenditure of Rs. 4,730.71 crore was incurred before declaration of National Project, i.e., before 01.04.2014.

Funds released / reimbursement by Central Government:

Central Assistance of Rs. 562.47 crore was provided to the State under AIBP till March, 2014. Central Government will provide 100% of the remaining cost of the irrigation component only of the project for the period starting from 01.04.2014 to the extent of the cost of the irrigation component on that date. An eligible amount of Rs. 13,226.04 crore has been released by Govt. of India so far for execution of project after declaration of project as national project including the expenditure towards establishment charges of PPA.

7.3.11 KRISHNA AND GODAVARI RIVER MANAGEMENT BOARDS (KRMB & GRMB)

APEX COUNCIL

In exercise of the powers conferred by sub-section (1) of section 84 of the Andhra Pradesh Reorganisation Act, 2014 (Act 6 of 2014), the Central Government constituted the Apex Council for supervision of the functioning of the Godavari River Management Board and Krishna River Management Board vide Gazette Notification dated 29th May, 2014, consisting of:

a) Minister of Water Resources, River Development and Ganga Rejuvenation, Government of India – Chairman;

b) Chief Minister of the State of Andhra Pradesh – Member; and

c) Chief Minister of the State of Telangana – Member.

Two meetings of the Apex Council have been held so far. The 1st meeting was held on 21.09.2016. The 2nd meeting was held on 06.10.2020.

KRISHNA RIVER MANAGEMENT BOARD (KRMB)

The KRMB was constituted vide Gazette Notification No: S.O.1391 (E) dated: 28th May, 2014 in accordance with sub-sections (1), (4) and (5) of section 85 of the Andhra Pradesh Reorganisation Act, 2014.

Subsequent to formation of the Board, various issues related with the functioning of the Board as mandated in the Andhra Pradesh Reorganisation Act, 2014 were discussed in meetings with the senior officers of the States of Telangana and Andhra Pradesh. To sort out the issues raised by the State Governments, regular meetings were held at technical level as well as Board level. The jurisdiction of KRMB has been notified by MoJS, DOWR, RD & GR by Gazette Notification S.O. 2842(E) dated: 15.07.2021. Besides various technical meetings, the 16th Board meeting was held on 06.05.2022. In the 16th meeting, the Board approved the "Regulation for the Transaction of Business of Board Meetings". Ministry of Water Resources, River Development & Ganga Rejuvenation has constituted a Committee vide their order No. R-12011/7/2/2016-Pen Riv dated: 05.10.2018 under chairmanship of Chairman, KRMB to ensure supply of Krishna water to augment the drinking water supply to Chennai city.

The meetings of the Committee are held regularly every year. The seventh meeting of the committee was held on 24.06.2022. The jurisdiction of KRMB has been notified by MoJS, DOWR, RD & GR by Gazette Notification S.O. 2842(E) dated 15.07.2021. Subsequently, the amendment to clauses 1(l), 2(f) and 2(g) was notified by Gazette Notification S.O. 1563 (E) dated 01.04.2022. The Gazette Notification S.O. 2842(E) dated 15.07.2021 was further amended by Gazette Notification S.O. 3511(E) dated 27.07.2022.

GODAVARI RIVER MANAGEMENT BOARD (GRMB)

The GRMB was constituted vide Gazette Notification No: S.O.1403 (E) dated 28th May, 2014 in accordance with section 85 of the Andhra Pradesh Reorganisation Act, 2014. Subsequent to formation of the Board, various issues related with the

functioning of the Board as mandated in the Andhra Pradesh Reorganisation Act, 2014 were discussed in meetings with the senior officers of the States of Telangana and Andhra Pradesh. To sort out the issues raised by the State Governments, regular meetings were held at Board level.

During 2022-23, 13th Meeting of Board was held on 27.04.2022 at Hyderabad on implementation of Gazette Notification, administrative, financial and technical issues.

Three projects received in GRMB from Central Water Commission (CWC) for technical observations of the Board were approved by the 151st Advisory Committee meeting held on 29.11.2022 are as follows:

- **Rudha (Channakha-Korata) barrage (Medium):** The planned annual utilisation is 1.5 TMC (1.2 TMC for Telangana and 0.3 TMC for Maharashtra). In Telangana, nearly 5,466 ha in 14 villages of Adilabad district are irrigated by utilising its share of 1.2 TMC. In Maharashtra, nearly 1,214 ha in 9 villages of Yavatmal are irrigated by utilising its share of 0.3 TMC
- **Choutpally Hanmanth Reddy LIS:** This scheme envisages lifting of water in two stages by utilizing 0.80 TMC water from D4 distributary of Laxmi canal of Sri Ram Sagar Project. The project will irrigate an ayacut of 3,359 ha in Khariff season in Nizamabad district, having 1,009 ha of direct ayacut and 2,350 ha of stabilization by filling up 28 tanks.
- **Mukteshwar (Chinna Kaleshwaram) LIS:** The scheme envisages utilising 4.5 TMC of Godavari water to provide irrigation facilities to an extent of 18,211 ha through 14 minor irrigation tanks including supply of 0.3 TMC drinking water to 63 enroute villages of 4 mandals of Jayashankar Bhupalapally district.

7.3.12 CAUVERY WATER MANAGEMENT AUTHORITY (CWMA)

The Central Government in exercise of the powers conferred by section 4 of the Inter-State River Water Disputes Act, 1956 (33 of 1956) constituted the Cauvery Water Disputes Tribunal vide notification no. S.O. 437 (E) dated the 2nd June, 1990 to adjudicate upon the water disputes regarding the inter-State river Cauvery and the river valley thereof, among the States of Karnataka, Kerala, Tamil Nadu and Union Territory of Puducherry.

The Cauvery Water Disputes Tribunal submitted its reports and decision under section 5 (2) of Inter-State River Water Disputes Act, 1956 to Government on 5th February, 2007. The decision of CWDT was published by the Central Govt. vide Gazette Notification dated 19.02.2013. Supreme Court, in its judgement dated 16.02.2018, slightly modified CWDT's Order. Hon'ble Supreme Court also directed Central Government to formulate a 'scheme' to implement the CWDT's Order as modified by it. Thereafter, in exercise of the powers conferred by section 6A of the said Act, the Central Government notified the **Cauvery Water Management Scheme** on 01st June, 2018, inter alia, constituting the '**Cauvery Water Management Authority' (CWMA)** and the **'Cauvery Water Regulation Committee' (CWRC)** to give effect to the decision of the Cauvery Water Disputes Tribu-

nal as modified by the Hon'ble Supreme Court on 16.02.2018.

The Authority comprises one Chairman, two whole time Members, two part time Members, four part time Members from Party States - Kerala, Karnataka, Tamil Nadu and Union territory of Puducherry. The Head Quarter of the Authority is at New Delhi.

The Authority exercises such power and shall discharge such duty to do any or all things necessary, sufficient and expedient for securing compliance and implementation of the Award of the Tribunal as modified by the Hon'ble Supreme Court vide Order dated the 16th February, 2018 including:

(i) storage, apportionment, regulation and control of Cauvery waters;

(ii) supervision of operation of reservoirs and with regulation of water releases with the assistance of Regulation Committee;

(iii) regulated release by Karnataka, at the inter-State contact point presently identified as Billigundulu gauge and discharge station, located on the common border of Karnataka and Tamil Nadu.

During 2022-23 (From 1st April, 2022 to 31st December, 2022), 3 meetings of CWMA and 13 meetings of CWRC were held.

7.3.13 NATIONAL DAM SAFETY AUTHORITY (NDSA)

Ministry of Jal Shakti, vide OM dated 25.04.2022, established the NDSA on the additional charge basis under the chairmanship of Member (D&R), CWC assisted by the 5 Members i.e. Member (Technical), Member (Policy and Research), Member (Regulation), Member (Disaster and Resilience) and Member (Administration and Finance). Posts of Members of NDSA are being held by the officers of CWC and DoWR, RD & GR on additional charge basis. To support the NDSA, 4 regional offices (North, East & North East, West and South) headed by Director, CWC on additional charge basis have been also established.

NDSA shall implement the policy, guidelines and standards evolved by the NCDS for proper surveillance, inspection and maintenance of specified dams. Ministry of Jal Shakti, vide Gazette notifications S.O. 758(E) and G.S.R. 135(E) dated 17.02.2022 established NDSA and Functions & Power Rules 2022, respectively.

Actions by NDSA:

- As per the section 31(1) of DSA, 2021, every owner of a specified dam shall undertake every year, through their dam safety unit, a pre-monsoon and post-monsoon inspections in respect of each such dam. As on 16.12.2022, dam owning agencies reported that pre-monsoon inspection for 3,919 dams and post-monsoon inspection for 1,112 dams have been carried out in the year 2022. The NDSA through its regional offices is pursuing with the SCDS and SDSOs of various States to carry out the inspections of all the dams in their jurisdiction.
- As per the section 54 of the Act, NDSA is required to prepare 19 regulations on the recommendation of NCDS. A sub-committee for framing the

draft regulations was constituted on 12.05.2022. The 7 regulations prioritized by the NCDS in its first meeting have been drafted by the NDSA.

- Recently, three dam related incidents have been reported at (i) Karam Dam, District Dhar of Madhya Pradesh; (ii) Ardla Dam, District Khandwa of Madhya Pradesh; and, (iii) Parambikulam Dam, District-Palakkad, Kerala. On receipt of information about the incidents in NDSA, immediately the officers from NDSA were deputed at the project site as per the directions of the Chairman, NDSA and provided/suggested remedial measures to be adopted.

NDSA has held two meetings on 19.05.2022 and 25.08.2022. NDSA also organized Regional Review Meeting-cum Workshop in all the four regions in the country - on 3rd September 2022 at Coimbatore, on 10th September 2022 at Chandigarh, on 11th November 2022 at Pune and on 19th November 2022 at Guwahati, to sensitize and stress upon the States to implement the provisions of DSA, 2021; officers from State SCDS & SDSO and Central/State PSUs in the respective region participated in them.

Shri Gajendra Singh Shekhawat, Hon'ble Minister for Jal Shakti was presented Dividend Cheque for the year 2021-22 by Shri R.K.Agrawal, CMD, WAPCOS & NPCC on 11th January, 2023

8

PUBLIC SECTOR ENTERPRISES

Shri Prahlad Singh Patel, Hon'ble Minster of State for Jal Shakti during review meeting at WAPCOS on 06.06.2022

8. PUBLIC SECTOR ENTERPRISES

8.1 WATER AND POWER CONSULTANCY SERVICES LIMITED (WAPCOS)

WAPCOS Limited is a "MINIRATNA-I" Public Sector Enterprise under the aegis of the DoWR, RD & GR, Ministry of Jal Shakti incorporated on June 26, 1969 under the Companies Act,1956. WAPCOS is engaged in the engineering consultancy services and construction in the fields of water, power and infrastructure sectors in India and overseas. WAPCOS is providing engineering consultancy services to various clients since its incorporation in over fifty countries particularly in South Asia and across Africa. WAPCOS has the requisite experience and expertise to undertake consultancy & EPC projects of any scale and complexity in the sectors of its operations. WAPCOS portfolio of projects is diverse in nature. The Company has implemented a comprehensive quality management system in compliance with the requirements of both **ISO 9001:2015** for consultancy services in water resources, power and infrastructure development projects as well as **ISO 9001:2015** for engineering, procurement and construction projects related to residential, office buildings, civil works, roads and highways, irrigation, agriculture and water projects, electrical power projects for generation, substation, transmission, distribution networks, rural electrification and renewable energy, industrial, IT, telecommunications and related projects

FIELDS OF SPECIALIZATION

Main fields of Specialization of the Company cover-

- Irrigation, Drainage and Water Management
- Ground Water Exploration and Minor Irrigation
- Flood Control and River Morphology
- Watershed Management
- Dams and Reservoir Engineering
- River Basin Planning
- Hydropower, Thermal Power
- Renewable energy development such as solar and wind
- Water Supply, Sanitation and Drainage
- Ports, Harbours and Inland Waterways
- Urban and Rural Areas development
- Roads, Railways and Highway Engineering
- Buildings & Townships
- Ropeways

WAPCOS provides a range of services

from 'concept-to-commissioning' and beyond to various projects in water, power and infrastructure sectors by leveraging its diverse experience, core competencies and using the latest technologies available at its disposal. Over the years, WAPCOS has developed the expertise for servicing the clients at each stage of project development cycle. WAPCOS services for any given project include any one or a combination of (i) preliminary investigations and reconnaissance; (ii) feasibility studies, planning and project formulation; (iii) field surveys and testing; (iv) design engineering; (v) baseline and socio-economic surveys; (vi) tender engineering; (vii) institutional and human resource development; (viii) project management and construction supervision; (ix) operation and maintenance; (x) engineering procurement consultancy, turnkey and deposit works; and (xi) other consulting services.

USP OF WAPCOS

The Unique Selling Preposition (USP) of WAPCOS includes survey & investigation/pre-feasibility/DPRs for more than 550 projects in irrigation, water resources & agricultural sector contributing to development of over 17 million ha irrigation potential; more than 200 projects in ports & inland navigation; over 500 projects in water supply & sanitation, rural & urban development, roads & highway engineering; EIAs for over 300 projects in the field of irrigation, hydro/thermal power, ports & harbours in India and abroad. Similarly, in hydro-power sector; WAPCOS has provided consultancy and EPC services for almost 60 hydro-power projects in 19 countries with an installed capacity of more than 9,500 MW; over 107 hydro-power projects in India with an installed capacity of more than 22,500 MW. In Thermal Power, the Company has successfully provided engineering consultancy services for 10 overseas projects with capacity of around 6,100 MW and 19 projects in India with capacity of about 15,000 MW.

ASSOCIATION WITH INTERNATIONAL ORGANIZATIONS

WAPCOS is associated with several development projects funded by multilateral funding agencies like World Bank, Asian Development Bank, African Development Bank, Japan Bank for International Cooperation, United Nations Office for Project Services, French Development Agency and German Development Bank, Asian Infrastructure Investment Bank, European Investment Bank and European Bank for Reconstruction and Development. It is also associated with key development projects as part of the bilateral funding initiative of the GoI to various countries such as Afghanistan, Bhutan, Cambodia, Nepal, Ghana and Tanzania, amongst others.

WAPCOS OPERATIONS

WAPCOS has provided engineering consultancy services to its clients in over fifty (50) countries. WAPCOS has developed global presence, particularly in South Asia and across Africa, in areas of water, power and infrastructure sectors by undertaking engineering consultancy services for various development projects. Wide presence and assignments undertaken overseas demonstrate its global experience and expertise over the years. Presently, WAPCOS is undertaking projects in 33 countries, viz., Afghanistan,

Bangladesh, Belize, Bhutan, Botswana, Burundi, Cambodia, Cuba, Central African Republic, DR Congo, Eswatini, Ethiopia, Fiji Islands, Ghana, Gambia, Indonesia, Liberia, Lao PDR, Mozambique, Myanmar, Mongolia, Nicaragua, Niger, Nepal, Rwanda, Sri Lanka, Suriname, Sierra Leone, Tanzania, Togo, Uganda, Vietnam and Zimbabwe.

WAPCOS operates in all the States of India through more than 100 project offices spanning across all Government and Private sectors, with the distinction of having involved in major schemes of Government of India.

CORPORATE SOCIAL RESPONSIBILITY

WAPCOS undertakes CSR activities in diverse fields in different States of India, as specified under Schedule VII of the Companies Act, 2013 and guidelines issued by Department of Public Enterprises, Government of India, from time to time.

CSR activities undertaken during the year covered healthcare & nutrition, school education, environmental sustainability sectors, socio-economic development of underprivileged members of society and contribution to PM CARES Fund.

8.2 NATIONAL PROJECTS CONSTRUCTION CORPORATION LIMITED (NPCC)

National Projects Construction Corporation Limited (NPCC) was established on 9th January, 1957 as a premier construction company to create the necessary infrastructure for economic development of the country. NPCC Limited is a *mini ratna* (Category-I) and ISO 9001:2015 accredited Public Sector Enterprise under the aegis of the Ministry of Jal Shakti and is well established in the country with its registered office at New Delhi, corporate office at Gurugram and 12 zonal offices in capitals of different States.

FIELDS OF SPCIALIZATION

- Townships and other residential buildings,
- Institutional buildings,
- Office complexes,
- Roads, bridges and fly- overs,
- Hospitals and health sector projects,
- Industrial structures,
- Surface transport projects,
- Environmental projects,
- Heritage projects,
- Thermal power projects,
- Hydro-electric power projects,
- Dams, barrages & canals, and
- Tunnels and underground projects

MAJOR WORKS COMPLETED:

- Establishment of National Institute of Homoeopathy (NIH), Phase -II, Kolkata, West Bengal.
- Construction of Seismological Research Lab for Ministry of Earth Sciences at Karad (Maharashtra).
- Establishment of Regional Research Institute of Unani Medicine (RRIUM), Silchar, Assam under Ministry of AYUSH.
- Construction of College of Horticulture & Forestry, Thenzawal, Mizoram.
- Construction of Multi Technology Testing Centre (MTTC) & Vocational Testing Centre (VTC) at College

of Veterinary Sciences & Animal Husbandry at Selesih, Mizoram under 12th Plan.

- Construction of Hathiyari Surface Power House (120 MW capacity) along with Surge Tank, Penstock, 7m dia. and 1.35 Km long Head Race Tunnel, Dehradun, Uttarakhand.
- Construction & Development of Kendriya Vidyalaya School in Rajasthan (at Dholpur, Jaipur & Nagaur), Jharkhand (at Khunti, Lohardaga, Chatra, Giridih & Dumka) and in Gujarat (at Patan).
- Construction of STPI Building at Meerut, Uttar Pradesh.
- Development of Tourist Facilities at Mantalai, Union Territory of Jammu & Kashmir.
- Renovation, up-gradation and development of sports facilities at Bakshi Stadium, Srinagar (Union Territory of Jammu & Kashmir).
- Construction of North Eastern Institute of Ayurveda & Homeopathy (NEIAH) at Shillong under Ministry of AYUSH in Assam.

Development of Tourist Facilities at Mantalai, Jammu & Kashmir

Development Sports facilities at Bakshi Stadium, Srinagar, Jammu & Kashmir

MAJOR WORKS UNDER EXECUTION:

- Construction of Eklavya Model Residential School (EMRS) and Eklavya Model Day Boarding Schools (EMDBS) at various locations in Gujarat, Jharkhand, Chhattisgarh, Madhya Pradesh, Uttarakhand and Union Territory of Ladakh.
- Construction of Kendriya Vidyalaya Sangathan (KVS) schools in various locations in Rajasthan, Chhattisgarh, Madhya Pradesh, Kerala, Karnataka, West Bengal, Arunachal Pradesh, Haryana, Odisha, Andhra Pradesh and Telangana.
- Construction of All India Institute of Ayurveda (AIIA) building at Sarita Vihar (New Delhi), National Research Institute of Ayurvedic Drug Development (NRIADD) building at Kolkata (West Bengal) and National Institute of Ayurveda (NIA) building works at Jaipur (Rajasthan) under Ministry of AYUSH.
- Navodaya Vidyalaya works at various locations in Chhattisgarh, Madhya Pradesh, West Bengal, Arunachal Pradesh, Mizoram, Meghalaya, Bihar, Uttar Pradesh and Union Territory of Jammu & Kashmir.
- Central Agricultural University (CAU) works in North Eastern States of Mizoram, Nagaland and Manipur.
- Construction of Software Technology Parks of India (STPI) infrastructure at various locations in Arunachal Pradesh, Bihar, Kerala and Uttar Pradesh.
- Construction of JCOs Club, Quarter Guard, Armory and Armory Shop, Officer Mess, Cook House cum Dining Hall, Single Men Barrack etc. works of Assam Rifles in North Eastern States of Assam, Nagaland, Meghalaya, Tripura and Manipur.
- Construction of Industrial Biotech Park for Council of Scientific & Industrial Research and Indian Institute of Integrative Medicines (CSIR-IIIM) in Union Territory of Jammu & Kashmir.
- Construction of Border Out-Posts (BOPs), Roads & Fencing Works for Ministry of Home Affairs (MHA).
- Construction of Border Floodlighting works for Ministry of Home Affairs (MHA) in North Eastern States.
- Construction of G+1 Load bearing wall type structure at Central University of Kashmir Campus, Ganderbal (Union Territory of Jammu & Kashmir).
- Construction & Remodeling of primary, secondary and tertiary drains of Bruhat Bengaluru Mahanagara Palike (BBMP) at Gandhinagar & Bomanahalli in Karnataka.
- Construction of various police building infrastructure for Police Head Quarters, Leh at Solar Colony, Choglamsar, Leh (Union Territory of Ladakh).
- Construction of Science Centre Cum Planetarium at various locations in Odisha.
- Construction of New Building of Birbal Sahni Institute of Palaeosciences (BSIP) at Lucknow (Uttar Pradesh).
- Storm Water Drainage Scheme for Municipal Town for Tarakeswar, Hoogly under Tarakeswar Development Authority (TDA) in West Bengal.

Construction of new building at NRIADD, Salt Lake, Kolkata, West Bengal

Construction of Office Building of Upper Yamuna River Board, Noida, Uttar Pradesh

Construction of Industrial Biotech Park at Kathua, Jammu & Kashmir

Shri Gajendra Singh Shekhawat, Hon'ble MoJS virtually inaugurated workshop on Erosion Management, 2022 held on 16.12.2022 at Golaghat, Assam

9 INITIATIVES IN NORTH EAST

During Har Ghar Tiranga Programme (13th – 15th August, 2022) at CWC office, Itanagar, Arunachal Pradesh

9. INITIATIVES IN NORTH EAST

9.1 NATIONAL INSTITUTE OF HYDROLOGY

To cater the hydrological needs of the North Eastern Region, Sikkim and northern part of West Bengal (Teestha Basin), the North Eastern Regional Centre (NERC, Guwahati), for the Brahmaputra Basin has been actively interacting with the State, Central and Academic organizations working in water resources in this region. The thrust areas of research at NERC, Guwahati are (i) Flood estimation and routing; (ii) Structural/ non structural measures for flood management; (iii) Integrated watershed management for flood control; (iv) Hydrological data base management system; (v) Drainage congestion and erosion problems; (vi) Water quality problems; and (vii) Socio-economic aspect of flood disaster.

During the year 2022-23, NERC, Guwahati worked on following studies:

- Linear hydrological routing using satellite precipitation datasets for flood forecasting in parts of Brahmaputra basin.
- Rainfall induced flood hazard risk vulnerability assessment in East Jaintia Hills, Meghalaya.
- Impact of climate change on flood inundation in Beki river basin.
- Drought characterization and vulnerability assessment in Assam.
- River basin planning studies in Teesta basin up to confluence with Rangit river in Sikkim.
- Study on behaviors of flooding and unexpected drought like situations in Garo Hills District of Meghalaya.
- A coupled hydrodynamic and bank dynamic modeling approach for forensic analysis of bankline erosion process along Majuli island, the largest inhabited river island in the World.

The Centre has actively participated in various awareness activities under Azadi Ka Amrit Mahotsav @ India 75 in Guwahati.

9.2 CENTRAL SOIL AND MATERIAL RESEARCH STATION

33 projects, 3 abroad, 4 in North-East region of India, and 3 interlinking projects, were investigated by CSMRS. The investigations comprised field and laboratory investigations in the areas of soil, rock, rockfill, geosynthetics, concrete and its constituents. Three projects of neighboring country Kholongchhu

Hydroelectric Project, Bhutan, Kuri Gongri Project, Bhutan and Punatsangchhu-I Hydroelectric Project, Bhutan were takenup. Dibang Multipurpose Project, Arunachal Pradesh, Katakhal Irrigation Project, Assam, Heora Dam Project, Tripura and Champaicherra Dam Project, Tripura four projects belong to North-East region of India.

9.3 CENTRAL GROUND WATER BOARD

Central Ground Water Board carries out its activities in the North Eastern Region (Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland and Tripura) through its regional office at Guwahati and the State Unit offices. Major activities and achievements of CGWB during 2022 are summarized below:

Sl. No	Activities	Achievements
1.	Field Activities for Aquifer Mapping:	Under NAQUIM programme from January 2022 to December 2022 an area of 19,184 km^2 has been covered.
2.	Ground Water Exploration	From January 2022 to December 2022, CGWB has constructed 9 wells.
3.	Water Quality Analysis	2,258 water samples were analysed for the basic constituents and heavy metals.
4.	Groundwater Resource Estimation (base year 2020)	Groundwater Resource Estimation (as on March 2022) was carried out for seven North Eastern States. Reports shared with all the States.
5.	Ground Water Regime Monitoring	659 ground water monitoring stations are being regularly monitored four times a year (January, March, August & November).
6.	Short Term Water Supply Investigation.	23 investigations carried out
7.	Public Interaction Program (PIP)	19 public interaction programmes have been conducted during 2022. Total participants in these trainings were 1,807 out of which 876 were female participants.
8.	Regulation and control of ground water development and management in the country under CGWA	406 NOCs issued and 702 exempted.
9.	Training	02 Tier III trainings have been organised in NER under the aegis of RGNGWTRI (during January 2022 - December 2022). Total participants in these trainings were 242 out of which 131 were female staff.

PMKSY-HKKP- Ground Water Irrigation Schemes in North Eastern States:

Presently, 9 projects amounting Rs. 785.85 crore under this scheme are being implemented in 6 NE States - Assam Phase-I & II, Arunachal Pradesh Phase-I & II, Tripura Phase-I & II, Nagaland, Manipur and Mizoram. Total central assistance of these projects is Rs. 707 crore of which Rs. 630.15 crore has already been released.

Under these projects, 12,746 irrigation wells have already been constructed (target 12,829 wells) as on 31st December, 2022 with the creation of 46,501 ha of command area (target 48,808 ha) benefitting 47,695 small & marginal farmers (target 48,452 farmers).

Relevant details of the Central Assistance (CA) are given below:

S. No.	State	Cost of Proposal (Rs. crore)	Central Assistance (Rs. crore)	Central Assistance released (Rs. crore)	Month of CA Release
1	**Assam- Phase-I**	246.07	221.07	183.67	Aug-19 March-22
2	Arunachal Pradesh-Phase-I	45.3	40.77	40.45	Aug-19 Jan-22 March-22
3	Arunachal Pradesh Ph –II	44.95	40.25	39.45	Feb-20 Dec-21 March-22
4	Nagaland	18.15	16.25	15.60	Feb-20 March-22
5	Tripura Phase-I	13.31	11.91	9.53	Jan-20 Feb-22 March-22
6	Manipur	61.68	55.51	54.40	Jul-20 Feb-22 March-22
7	Mizoram	16.04	14.44	8.66	Jul-20
8	Assam Phase II	292.01	262.81	252.29	Feb-21 Jul-21 March-22
9	Tripura Phase II	48.34	43.51	26.10	Dec'21
	Total	**785.85**	**706.91**	**630.15**	

Shri Bishweswar Tudu, Hon'ble Minister of State of Jal Shakti attended the 20th State-level Buisu festival of Tripuri Dance in Dhalai District of Tripura on 13.04.2022

9.4 DAM REHABILITATION AND IMPROVEMENT PROJECT

The States of Manipur and Meghalaya (Implementing Agencies: Manipur WRD and Meghalaya Energy Corporation Limited (MePGCL)) are partner States under DRIP Phase II & Phase III with rehabilitation provision of five (5) and six (6) dams with financial outlay of Rs 311 crore and Rs 441 crore, respectively. These States are eligible for central grant of 90% of loan amount. The funding pattern for special categories States is 80:20 (loan: counterpart funding). Under DRIP Phase II, Manipur WRD has awarded 3 tenders for civil works worth Rs. 140 crore, whereas MePGCL has awarded one tender amounting to Rs 27 crore.

9.5 NATIONAL PROJECTS CONSTRUCTION CORPORATION LIMITED

NPCC is working in eight North Eastern States for the last 36 years for developing the infrastructure and other social amenities for upliftment of socio-economy of the people of North-Eastern States.

Indo-Bangladesh Border Fencing and Road Works:

NPCC is working on the construction of fencing in Tripura, Mizoram & Meghalaya for 640.753 km (actual on ground 623.301 km), 529.998 km (actual on ground 509.566 km) road & 154.72 km (actual on ground 101.59 km) and link road works for mostly in insurgency prone area. NPCC has today made the area accessible having network of road along the border fencing, where, there was no accessibility and BSF Jawans used to walk 20 to 30 km.

Indo-Bangladesh Border Flood-lighting Works:

MHA had sanctioned the construction of border flood-lighting of Tripura and Meghalaya. NPCC has completed border flood light work of 687.90 km in Tripura and 341.60 km in Meghalaya. The border flood light is helping BSF to have 24 hours vigil over insurgent groups and illegal migrants.

Border Out Post (BOP) Works:

NPCC has completed the construction of BOP works in difficult areas of North-East: Tripura-48 posts (total-50), Mizoram-4 posts (total-21), Assam-5 posts (total-6), Meghalaya-12 posts (total-17) and West Bengal-76 posts (total-94) for monitoring of the border activities by BSF.

National Institute of Electronics & Information Technology (NIELIT) Works:

NPCC is also playing a major role creating infrastructure for 10 extension centers and a centre of NIELIT in the North-Eastern States of Mizoram, Nagaland, Manipur, Arunachal Pradesh, Meghalaya and Assam for development of the skill of information technology which contributes towards socio-economic development.

Indian Agricultural Research Institute (IARI) Works:

Construction of building, Directorate Block, Guest House, Boys Hostel, Girls Hostel, roads, boundary wall and various site development works of IARI at Dhemaji, Assam.

Construction and site development works of IARI at Dhemaji, Assam

Central Agricultural University (CAU) Works:

Construction of Multi Technology Testing Centre (MTTC) & Vocational Testing Centre (VTC) at College of Veterinary Science and Animal Husbandry at Selesih (Mizoram), College of Veterinary Science and Animal Husbandry at Jalukie (Nagaland), College of Horticulture & Forestry at Thenzawal (Mizoram), College of Agriculture at Iroisemba, Imphal (Manipur) under Central Agricultural University (CAU).

ASSAM RIFLES WORKS

Construction of complete establishment of Assam Rifles in all the States of North-East with administrative block, hospitals all types of residential quarters, barracks, posts, recreation centers, library building, museum building, MT park, etc.

9.6 BRAHMAPUTRA BOARD

Brahmaputra Board has taken up scientific dissemination and improvement of water management practices of local tribes and indigenous people of NE region in association with NERIWALM. Four areas of NE region have been identified in first phase. Brahmaputra Board has taken up a pilot project at Majuli island in collaboration with IIT, Guwahati for 'hard and soft measures termed as bio-engineering method for flood and erosion management. For preparation of Detailed Project Report to check flash floods and erosion in BTC area by Pagla/Baitamari, Aie, Beki, Pagladiya, Sankosh, Gangia and Saralbhanga rivers, work has been allotted to WAPCOS, a PSU of the Ministry. The activities carried out by Brahmaputra Board in North Eastern Region have already been covered in detail in ***Chapter 7.***

9.7 NORTH EASTERN REGIONAL INSTITUTE OF WATER AND LAND MANAGEMENT

TRAINING PROGRAMMES

The Institute caters to the capapcity building needs of all the States of the North Eastern region. Details of State-wise participants in training in 2022 (from January to December, 2022) are given below:

Name of state	Total number of participant	Name of State	Total number of participant
Assam	1,599	Nagaland	355
Arunachal Pradesh	156	Tripura	11
Manipur	326	Sikkim	123
Meghalaya	190	Other states	175
Mizoram	164		
Total:	**3,099**		

OUTREACH ACTIVITY:

NERIWALM in collaboration with Brahmaputra Board is implementing good water management practices in the NE region of India. The best practices of water management and water conservation at Ziro and Pakke Kassang, Arunachal Pradesh have been initiated with community participation. Basic learning workshops and pilot activity planning were conducted for community members for effective water management through participatory approach. The institute also conducted field demonstration on water management in potato at farmer's field at Jamuguri, Assam.

SPONSORED TRAINING/ WORKSHOP / SEMINARS

Out of the 72 programmes conducted during the year, Institute received sponsorship for 03 training/workshops, while 12 were conducted as self -financed and remaining 57 were conducted from Institute's funds.

M.TECH COURSE IN WATER RESOURCE MANAGEMENT

One of the objectives for establishing NERIWALM is to prescribe courses in water and land management for irrigation and agriculture and hold examinations and grant certificates, diplomas etc. by seeking affiliation with universities and other appropriate academic bodies. The institute fulfilled this objective in 2019-2020 by opening Post Graduate Degree (M.Tech.) course in water resource management.

For academic purpose, NERIWALM is affiliated to Assam Science and Technology University, Guwahati. The course is approved by AICTE, Govt. of India. The duration of the degree course is two years and requires successful completion of 66 credits. In 2022, the fourth batch of M. Tech. course has 12 students. The main subjects covered in the course are surface water, ground water, water quality, irrigation, on-farm development, integrated water resource management, research methodology and IPR, water legal aspects, etc.

RESEARCH & DEVELOPMENT (R& D) ACTIVITIES

The institute undertook R&D activities from different Ministries of Government of India & State Government Departments of NER States. During 2022-2023, institute has undertaken concurrent evaluation of irrigation project (PMKSY-AIBP) in Assam, concurrent evaluation of irrigation project PMKSY-HKKP in Meghalaya, semi detail soil survey and irrigation planning for command area towards preparation of DPR of Haora and Champamura reservoir schemes in West Tripura, Tripura, good water management practices in NE region for better basin planning in Arunachal Pradesh.

9.8 NATIONAL RIVER CONSERVATION PLAN WORKS IN NORTH EASTERN STATES:

Achievements under National River Conservation Plan (NRCP) in various NER States are as follows:

Sikkim: Under NRCP, projects were sanctioned for conservation and pollution abatement of rivers Rani Chu, Teesta and Rangit in Sikkim at a cost of Rs.569.09 crore in 6 towns namely Gangtok, Ranipool, Singtam, Mamgan, Chungthang and Geyzing. The works sanctioned under the projects pertain to interception & diversion of sewage, sewage treatment plants, rehabilitation of sewer mains, low-cost sanitation, river front development and improved wood crematoria. Sewage treatment capacity of 26.00 mld is envisaged to be created in these towns. Under the project, a STP of 20.12 mld has already been commissioned along with other sewerage infrastructure facilities and river front development works. The scheme is presently under implementation.

Nagaland: For pollution abatement of rivers Diphu and Dhansiri at Dimapur, Nagaland, works have been sanctioned under NRCP at an estimated cost of

Rs.78.65 crore. The works envisaged under the project pertain to construction of sewage treatment plant of 25.43 mld capacity and other allied sewerage works, low-cost sanitation, afforestation, etc. Under the project, a STP of 25.43 mld has already been commissioned along with other allied sewerage works, low-cost sanitation, afforestation, works etc.

Manipur: For pollution abatement of river Nampul at Imphal, Manipur, works have been sanctioned under NRCP at an estimated cost of Rs.97.72 crore. The works envisaged under the project pertain to construction of 2 sewage treatment plants of 16 MLD and 1 MLD capacity other allied sewerage works, low-cost sanitation, afforestation, etc. The scheme is presently under implementation.

Shri Gajendra Singh Shekhawat, Hon'ble Minister (Jal Shakti) along with Secretary and Joint Secretary, DoWR, RD & GR during Har Ghar Tiranga Programme

10 WINGS OF THE DEPARTMENT, TRAINING & GOVERNANCE

Shri Bishweswar Tudu, Hon'ble Minister of State (Jal Shakti) during 8th International Yoga Day on 21.06.2022 at Mayurbhanj, Odisha

10. WINGS OF THE DEPARTMENT, TRAINING & GOVERNANCE

10.1 WINGS OF THE DEPARTMENT

The work allotment of different wings/ divisions of the Department is summarized as below:

1. ADMINISTRATION WING HEADED BY JOINT SECRETARY (ADMN. / IC & GW)

i. ADMINISTRATION SECTION (INCLUDING SC/ST & OBC CELL)

- Establishment matters of all (Group 'A', 'B' and 'C' employees of the Department (Sectt.))
- Engagement of Consultants
- Training Cell
- Advances
- Deputation of Assistant Secretaries
- Matters related to Hon'ble Minister and Hon'ble MoS Office
- E-HRMS
- FR 56(j)
- Reports / Returns
- Leave / LTC / Service Book etc. related matters
- APAR Cell
- Court Cases
- Air Ticket Cell
- Recruitment Rules
- SC/ST/OBC/PWD Cell
- Matters related to Allocation of Business Rules, 1961
- Election Matters
- Miscellaneous Matters

ii. GENERAL ADMINISTRATION SECTION:

- Purchase and online distribution of stationary, cartridges, crockery, briefcase, consumable items etc.;
- Swachh Bharat work including coordination with all offices and reporting to Ministry of Drinking Water and Sanitation including works related to organization of Swachhta Pakhwada by the Department;
- Modernization and renovation of office space including toilets in all buildings of the Department.
- All housekeeping related works such as outsourcing of services for housekeeping work, sanitization of office space etc.

iii. CENTRAL REGISTRY (C.R.) SECTION

- Receipt, Scanned/diary and distribution of incoming dak.
- Dispatched of outgoing dak.
- Maintenance of accounts of postage stamps and Frankling machines postage values.
- Settlement of speed post bills.

iv. CASH SECTION

- Salaries Bills
- GPF: GPF maintained of 252 Officers/ officials of Old Pension scheme) in PFMS Portal, annual interest calculation end of March of every year. GPF transfer cases are running whole year.
- After Superannuation benefits: payment of Gratuity, Commutation of Pension, Death Gratuity, Leave encashment on retirement & CGEIS payment through PFMS Portal etc.

v. COORDINATION SECTION

- Monitoring of E-Samiksha**,** VIP/PMO references, RTI Portal etc. **Portals**
- Forwarding of RTI requests/appeals to concerned PIOs/appellate authority.
- Furnishing information and disposal of RTI requests and appeals pertaining to Coordination section.
- Preparation of material for Hon'ble President's Address to both the Houses of Parliament.
- Preparation of material for Hon'ble Prime Minister Independence Day Speech and preparation of status/ action taken on announcements made by Hon'ble PM on Independence Day etc;
- Collection, compilation and furnishing the monthly, quarterly, half-yearly and yearly reports to the concerned Ministries/ Departments.

vi. O & M SECTION

Record Management Activities:

- Departmental Records Room's Inspection by NAI team and follow up;
- Appraisal of more than 25 years old physical records/files by NAI team & follow up;
- Various Half Yearly / Annual reports and returns on Records Management compilation and submission to NAI and DAR&PG;
- Getting periodical review of physical records lying in DRR done by concerned Sections/ Divisions;
- Recording, Reviewing and Destruction of old records in the Department;
- Compilation of information on Review of Records Retention Schedule for substantive functions of the Department and getting vetted by NAI;
- Maintenance and upkeep of Departmental Records Room (DRR) located at CSMRS Building, Hauz Khas, New Delhi.

vii. e-GOVERNANCE SECTION:

- To look after the Information Technology (IT) functions of this Department and e-Governance.
- Implementation of e-Office in the Department (Proper) and its Organisations
- E-Governance related functions and implementation thereof.

viii. INFORMATION, EDUCATION AND COMMUNICATION (IEC) SECTION:

Information, Education and Communication Section has been assigned task of carrying out mass awareness activities/ programmes on water conservation and water resources

management of the Department;

ix. PSU

PSU Section deals with all matter of Board level posts i.e. appointment, extension and creation etc. of two CPSEs etc.

x. ESTABLISHMENT – I SECTION:

Establishment-I is Subject Matter Division (SMD) for Central Water Commission (CWC). CWC is an apex organization in the Water Sector. It is an attached office under Department of Water Resources. It is the largest organization under the control of the Department. All administrative and organizational matters pertaining to CWC are processed in E-I Section.

xi. ESTABLISHMENT – II SECTION:

All administrative and organizational matters relating to CSMRS, CWPRS, NIH and NERIWALM.

xii. ESTABLISHMENT – III SECTION:

All administrative matters pertaining to the Brahmaputra Board, GFCC, Farakka Barrage Project and Upper Yamuna River Board.

xiii. ESTABLISHMENT - IV SECTION:

Deals with the Establishment matters in respect of NCA, NWDA, BCA, BRB, TB, KRMB, GRMB, PPA, CWMA and monitoring of Court Cases through LIMBS portal but no policy matters.

xiv. GROUND WATER (Estt.):

- Establishment matters relating to Group 'A' officers of the CGWB/CGWA, including recruitment, promotion, confirmation, etc.
- Cadre review of Group A, B, C, D officers of the Board.

xv. EA & IC :

- **EXTERNALLY AIDED PROJECTS:** Funded by World Bank, JICA, Germany, ADB and other Multilateral Banks.
- **INTERNATIONAL COOPERATION:** Collaboration / Bilateral agreements / Cooperation in the field of Water Resources with Foreign countries including signing of memoranda of understanding
- **FOREIGN TRAININGS AND DEPUTATION:** Matters relating to participation of the Indian delegation in the International events such as World Water Forum, World Water Week, World Water Day, G-77, G-20 and other important Global Platforms etc (On invitation basis). Processing of matters relating to official foreign visits by Hon'ble Minister (Jal Shakti), Hon'ble Minister of State (Jal Shakti) for the matter pertaining to Department of Water Resources, RD&GR. Processing matters relating to foreign visits of officers for Joint Working Group Meetings under the implementation of MoUs signed with foreign countries.

xvi. PARLIAMENT SECTION:

Coordination of replies to all Lok Sabha and Rajya Sabha Questions including Short Notice Questions. **Coordination with the concerned House of the Parliament** on the laying of Annual Report / Audited Accounts/ Review/ Delay Statement

of the organization under the control of DoWR etc;

xvii. GROUND WATER DESK:

Groundwater desk shall be the subject matter division (SMD) for all technical matters of CGWB & CGWA. All personnel/establishment & administrative matters shall be dealt by GWE division of the Ministry.

xviii. VIGILANCE SECTION:

- Application of CCS (Conduct) Rules, 1964/ CCS (CCA) Rules, 1965 in respect of cases attracting vigilance angle and their interpretation/ clarification.
- Disciplinary cases of vigilance nature of all employees of the Department (proper), as well as of CSS/CSCS/ CSSS cadres and officers of Group 'A' services of attached and subordinate offices and related action thereon.
- Immovable Property Returns/ intimation of acquisition/ disposal of movable/ immovable property under the CCS (Conduct) Rules 1964 and AIS Rules in respect of officers and staff of the Department proper.

xix. ATAL JAL:

Development, updation and maintenance of website, Mobile application and MIS portal of Atal Bhujal Yojana including all administrative, financial, audit etc;

2. FINANCE WING: HEADED BY JOINT SECRETARY & FINANCIAL ADVISER

i. BUDGET SECTION / Fin-I :

- Examination/compilation/preparation of following budgetary stage documents
- Statement of Budget Estimates
- Detailed Demand for Grants
- Revised Estimates
- Supplementary Grants
- Works relating to re-appropriation of funds
- Laying of Demands for Grants and Output-Outcome Monitoring Framework document of DOWR, RD&GR on the Table of the Parliament.
- Works relating to the meetings of Finance Minister and Secretary (Expendiure) with Financial Advisors.
- Expenditure review under scheme and establishment expenditure etc;
- Budget at Glance is provided at ***Annexure-X.***

ii. INTEGRATED FINANCE DIVISION (IFD) / Fin-II :

- Advising the Department and its organizations on all policy issues having financial implications
- Examination and furnishing comments on draft Memo for EFC/ SFC Appraisal/ Cabinet Notes etc.
- Scrutiny of proposals of all Wings requiring financial concurrence within the delegated powers of the Department.
- Examination of expenditure proposals, proposals for creation/ revival of posts and all matters requiring approval of Ministry of Finance.
- Examination and tendering advice on cases for deputation to foreign countries and on foreign travels.

iii. CONTROLLER OF ACCOUNTS (CA)

- Preparation of monthly and annual (financial and appropriation) accounts.
- Regular monitoring of expenditure and receipts.
- Internal Audit.
- Coordination of Ministry's responses to external (CAG) audit.
- Preparation of Appropriation Accounts

3. RIVER DEVELOPMENT AND PUBLIC POLICY WING: HEADED BY JOINT SECRETARY (RD &PP)

i. POLICY & PLANNING:

- Policy matters related to water resources of the country like: Formulation and revision of National Water Policy; Matters related to Hydro-Meteorological Data Dissemination policy; Sediment Management Policy.
- Matters related to National Commission for integrated Water Resources Development & Management (NCIWRDM)
- Coordination of the meetings of National Water Resources Council (NWRC) and National Water Board (NWB);
- Monitoring and other matters related to Development of Water Resources, Information System (DWRIS).

ii. BASIN MANAGEMENT – 1:

- Administration and amendment of Inter State River Water Dispute (ISRWD) Act, 1956;
- Administration and amendment of River Boards Act, 1956 and matters relating to River Basin Management Bill;
- Dam Safety Bill- 2020 (Legislative matters only);
- Work related to formation of Ganga Management Board (GMB);
- Coordination of Works related to Inter Linking of Rivers (ILR);

iii. BASIN MANAGEMENT – 2:

Setting up of water disputes tribunals and reference of disputes to tribunals under the Inter-State Water Disputes Act. Also administrative and legal matters connected therewith: Ravi-Beas Water Tribunal (RBWT); Mahanadi Water Dispute Tribunal; Krishna Water Dispute Tribunal (KWDT); Mahadayi Water Dispute Tribunal (MWDT) etc.

iv. PEN RIVER- I :

Inter-State issues/disputes on use, distribution and control of water related to rivers Godavari, Krishna, Cauvery, Mahi, Sabarmati, Narmada, Tapi, West flowing rivers from Tapi to Tadri and Tadri to Kanyakumari.

v. PEN RIVER- II:

Inter-State issues/disputes on use, distribution and control of water related to rivers Subarnarekha, Brahmani-Baitarani, Mahanadi, Pennar and rivers of A&N Islands & Pudducherry; East flowing rivers between Mahanadi & Pennar and between Pennar and Kanyakumari; rivers of Kutch & Saurashtra including Luni; rivers of Islands of Dadra &

Nagar Haveli and Daman & Diu; rivers draining desert in Rajasthan.

Works related to drought such as nominations from the Department for IMCT and the Dam Rehabilitation and Improvement Project (DRIP), issues related with implementation of Dam Safety Act, 2021, Safety issues of Mullapariya Dam, Technical matters of Bansagar Control Board and Betwa River Board.

vi. RIVER DEVELOPMENT:

- Studies and schemes related to rivers / spring rejuvenation
- River Water Quality Management, pollution abatement in rivers
- Studies related to impact of climate change, glacier melt, etc., on rivers
- Environmental flow / longitudinal connectivity in rivers, to ascertain effect of e-flow on Ecosystems, habitats and biological organisms

vii. NHP- UNIT- I :

- All matters related to RTDAS SW, SCADA and related instruments including procurement, hydro-met network physical and financial progress, installation and commissioning of RTDAS SW system
- Coordination for data sharing related to WRIS/WIMS.
- All matters related to NWIC.
- India WRIS-State WRIS integration.

viii. NHP: UNIT- II :

- All matters related to Knowledge Products and Studies pertaining to Surface Water.
- All matters related to Surface Water PDS including physical & financial Progress.

ix. NHP: UNIT- III :

- All matters related to RTDAS-Ground Water and related instruments including procurement, physical & financial progress, examination & finalization of bids, installation, and commissioning and data transmission to WIMS.
- Piezometers – Hydro-network, Construction, physical and financial progress

x. NATIONAL RIVER CONSERVATION DIRECTORATE (NRCD)

Centrally Sponsored Scheme (CSS) i.e. National River Conservation Plan (NRCP) jointly with the State Governments on a cost sharing basis for abatement of pollution in identified river stretches of India (excluding river Ganga and its tributaries).

4. ECONOMIC ADVISERY WING: HEADED BY ECONOMIC ADVISER

i. PLANNING UNIT:

- Preparation of Annual Report of the Department.
- Third Party Evaluation of Central Sector Schemes of the Department in coordination with internal SMDs and coordinating the feedbacks and comments of internal SMDs to the Third Party Evaluation of Centrally Sponsored Schemes of the Department by NITI Aayog.
- Liaison with NITI Aayog in preparation of Output-Outcome Monitoring Framework document and updating quarterly physical and financial progress i.r.o. schemes of the Department.

- To update and integrate NIP, PMG and PM Gati Shakti Portal.
- Communication with other Ministries/Departments related to Gender Budgeting, allocation of resources for SC/ST, updation of India Code Portal, Economic Survey, input for Budget Speech etc.
- Holding of monthly Standing Audit Committee meeting for speedy disposal of PAC and C&AG audit paragraphs.

ii. HINDI SECTION :

- To ensure the implementation of instructions/directions and constitutional provisions on Official Language, Official Languages Act, Official Languages Rules etc., in the Department and its subordinate organizations.
- To ensure the implementation of Presidential Orders on the Reports of Committee of Parliament on Official Language and issue instructions to all Sections and Officers in the Department and Subordinate Offices.
- Translation of Parliament Questions' answers, Cabinet notes, Standing Committee materials, Annual Report, Statutory reports, Orders, Letters etc. into Hindi.

5. STATE PROJECTS WING: HEADED BY COMMISSIONER (SPR)

i. SPR- I :

- Release of Central Assistance under PMKSY-AIBP & CADWM for the States of Andhra Pradesh, Assam, Bihar, Jharkhand, Karnataka, Kerala, Odisha, Tamil Nadu & Telangana;
- Works relating to Polavaram Irrigation Project (declared as National Project as per AP Reorganization Act, 2014);
- Parliament Questions / VIP References/ PMO references pertaining to the work allocated to SPR-I division and related Parliamentary matters;
- Works related to evaluation, Audit, Court Cases etc. of above mentioned PMKSY-AIBP & CADWM and National Project when taken up;

ii. SPR-II:

- Works related to Accelerated Irrigation Benefit Programme (AIBP) and Command Area Development & Water Management (CAD&WM). Central Assistance releases under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)- AIBP and CAD&WM for Major and Medium Irrigation/ Multipurpose projects for the states Chhattisgarh, Goa, Madhya Pradesh, Maharashtra, Uttar Pradesh, Uttarakhand, Punjab, Rajasthan, Himachal Pradesh, Haryana, Gujarat and the Union Territories of Jammu & Kashmir and Ladakh.
- Works related to National Projects (other than Interlinking of Rivers (ILR) projects. Release of Central Assistance for the National Projects of the aforesaid States.

iii. MINOR IRRIGATION (SMI & RRR):

- Work related to Surface Minor Irrigation (SMI) Schemes under Har Khet Ko Paani (HKKP) component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY).
- Examination of schemes for inclusion in the Surface Minor Irrigation (SMI) Scheme.

- Work related to Repair, Renovation and Restoration (RRR) of Water Bodies Schemes under Har Khet Ko Paani (HKKP) component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY).
- Examination of schemes for inclusion in the Repair, Renovation and Restoration (RRR) of Water Bodies Scheme.

6. COMMAND AREA DEVELOPMENT & WATER MANAGEMENT (CADWM) WING: HEADED BY COMMISSIONER (CADWM)

- Release of central assistance to States and Union Territories for implementation of CAD Programme other than PMKSY under Five Year Plans and Annual Plans.
- Monitoring and review of CAD Projects other than PMKSY and evaluation studies. Examination of water management / CAD aspects major and medium irrigation projects except those under PMKSY received from CWC.
- Examination projects for inclusion in the CAD programme. Liaison with NITI Aayog, Ministry of Agriculture, ICAR, etc.
- Coordination regarding On-farm water management projects proposed by ICAR and Ministry of Water Resources.
- Farmers Exchange Programme in States and Action Research Programme.

7. BRAHMAPUTRA AND BARAK WING: HEADED BY COMMISSIONER (B&B)

i. BB & BARAK :

- Technical and financial matters related to the Brahmaputra Board except Flood Management Programme.
- Release of grant-in aids to Brahmaputra Board under RBM Scheme.
- Matter related to approval of Master Plans prepared by Brahmaputra Board.

ii. NORTH EASTERN REGION :

- International matters in the field of water resources sector with China and Bhutan including strategic economic dialog (SED) meetings with China.
- Matters related to Hydro-Power Development in North Eastern Region, Clearance of Detailed Project Reports.

8. MINOR IRRIGATION STATISTICS WING: HEADED BY ADDITIONAL DIRECTOR GENERAL (STAT.)

- Implementation of Centrally Sponsored scheme 'Irrigation Census'.
- Conduct of Census of Minor Irrigation Schemes as well as Census of Water Bodies on quinquennial basis.
- Release/ revalidation of grants in aid to States and UTs for conduct of Minor Irrigation Census and Census of water Bodies.
- To review the performance of Statistical Cell created in different States/ UTs under Irrigation Census scheme.
- Release of fund for Statistical Cell in States and UTs under Irrigation Census scheme.

9. FLOOD MANAGEMENT WING: HEADED BY COMMISSIONER (FM)

i. DIVISION – I:

- India-Bangladesh Water Resources related matters pertaining to common border / trans-boundary rivers: Implementation of Ganges Water Sharing Treaty (1996) with Bangladesh on the sharing of Ganga/ Ganges waters at Farakka during the lean season. Matters relating to the Joint Committee to oversee the implementation of the Treaty and making arrangements for joint hydrological observations at Farakka (India) and Hardinge Bridge (Bangladesh) on river Ganga as per provisions of the Treaty. Selection of Indian Team and its deputation to Hardinge Bridge in Bangladesh for joint hydrological observations.
- Matters relating to India-Bangladesh Joint Rivers Commission (JRC) headed by Union Minister for Jal Shakti, Technical Level Committee and various other Joint Committees / Groups formed from time to time under the framework of Joint Rivers Commission including convening of bilateral meetings.
- Exchange of river data with Bangladesh on identified common border / trans-boundary rivers for scientific study and preparation of framework for the interim water sharing agreements on these rivers as per identified priority jointly.

ii. DIVISION – II:

- Implementation of centrally sponsored Scheme "Flood Management and Border Areas Programme (FMBAP)" in the country comprising of two major components viz. Flood Management Programme (FMP) component and "River Management Activities and Works related to Border Areas (RMBA)" component.
- Expert Committees / Task Forces / Working Groups on Flood Management.
- Crisis Management Plan and National Disaster Management Authority matters related to floods.

iii. DIVISION – III:

- India-Nepal Matters: Implementation of Mahakali Treaty for the "Integrated Development of the Mahakali River including Sarada Barrage, Tanakpur Barrage and Pancheshwar Project". All matters related to Pancheshwar Development Authority except establishment matters.
- Matters relating to various joint India-Nepal Committees including Joint Ministerial Commission on Water Resources (JMCWR), Joint Committee on Water Resources (JCWR), Joint Standing Technical Committee (JSTC), Joint Team of Experts (JTE), Joint Committee on Inundation and Flood Management (JCIFM), Joint Committee on Kosi and Gandak Projects (JCKGP).
- Matters related to India-Nepal joint projects including Sapta Kosi High Dam Multipurpose Project and Sun Kosi Storage cum Diversion Scheme, Kamala Dam project and Bagmati Dam project.

iv. DIVISION – IV:

- Technical Matters pertaining to Upper Yamuna River Board, Upper Yamuna Review Committee and Yamuna Standing Committee.
- Steering the implementation of balance works of North Koel Reservoir Project.
- Implementation of MoU on sharing of Yamuna waters, Renuka, Kishau and Lakhwar-Vyasi dams in Yamuna basin.

10. INDUS WING: HEADED BY COMMISSIONER (INDUS)

- **Matters related to Eastern Rivers of Indus System and BBMB:** Sutlej-Yamuna Link (SYL) Canal - Works related to its implementation, court cases, meetings, funding and release of grants-in-aid.
- Water related issues among Punjab, Haryana and Rajasthan - Restoration of 0.6 MAF of Rajasthan's share of surplus Ravi Beas waters, Transfer of Control of Head works at Ropar, Ferozepur and Harike, BML-Hansi Branch-Butana Branch Multipurpose Link channel, court cases thereof etc.
- **Matters related to Indus Waters Treaty 1960**

11. NATIONAL WATER MISSION WING: HEADED BY MISSION DIRECTOR (NWM)

i. ADVISER (TECHNICAL) AND ADVISER (COORDINATION & MONITORING) :

- Setting up of National Bureau of Water Use Efficiency (NBWUE);
- Preparation of State Specific Action Plans and Implementation thereon;
- Incentivization of sectors like industries, farmers, local bodies, water users' associations etc. for water conservation;
- Coordinating for taking up Baseline Study, Benchmarking and Demonstration Projects for Water Use Efficiency;
- Matters related to National Action Plan on Climate Change and National Water Mission;
- Inter-Ministerial committee on Water Conservation.

ii. RESEARCH & DEVELOPMENT DIVISION :

Coordination of activities related to research and development in water sector to be taken under the component "Research and Development Programme in Water Sector" of the scheme titled "Research and Development Programme in Water Sector and Implementation of National Water Mission".

12. GANGA REJUVENATION WING: HEADED BY DIRECTOR GENERAL (NMCG)

NAMAMI GANGE MISSION :

- Matters of Rejuvenation, Protection and Management of river Ganga and its tributaries and National Mission for Clean Ganga.
- Relating to Coordination work of National Mission for Clean Ganga with other Wings of DoWR, RD & GR.
- Processing of budget and other financial proposals for National Mission for Clean Ganga.

10.2 IMPLEMENTATION OF TRAINING POLICY OF THE DEPARTMENT

Administration Division administers the training to officers/ officials of the Department in reputed Institutes located in India and abroad in different fields, induction training on selection/ recruitment in the Department. Officers are given induction training on joining. Officials are also deputed on mid-career training at various levels/stages in their career as well as for thematic training like leadership development, stress management, ethics and values, finance, administration, etc. During FY-2022-23, no in-house training programme could be conducted due to COVID-19 pandemic. However, mandatory online training programme conducted by ISTM were attended by CSS & CSSS officers of this Department.

10.3 INTERNATIONAL YOGA DAY: 2022

In view of the 8th International Day of Yoga falling in Azadi Ka Amrit Mahotsava year, Ministry of Ayush, being the Nodal Ministry planned a series of diverse activities and programs. Starting from 7th April 2022, which was also the World Health Day and 75th Day of the countdown to 8th International Day of Yoga 2022, Ministry of Ayush allotted each Ministry/ Department a designated date before 21st June to practice Common Yoga Protocol and other Yoga related activities. The date allotted to Ministry of Jal Shakti was 28th April 2022 as the 54th Day of countdown to International Day of Yoga, 2022.

On the directions of Ministry of Ayush, this Department has organised Yoga Lecture/Demonstration by Experts on 28th April 2022 in National Media Centre, New Delhi. On this event, all the Organisations & PSUs within this Department located at Delhi/NCR participated.

Acharya Priytosh and his team showed various various postures, exercises & Aasans of Yoga, 28th April 2022 in National Media Centre, New Delhi

In view of the 8th International Day of Yoga falling in Azadi Ka Amrit Mahotsava year, Ministry of Ayush, being the Nodal Ministry proposed to observe IDY at 75 iconic sites across the country for India Branding. Out of the 75 iconic sites, Hon'ble Union Minister of Jal Shakti has been allotted Sam Sand Dunes, Jaisalmer, Rajasthan and Hon'ble Minister of State (Jal Shakti & Tribal Affairs) at Khichakeswari Temple, Mayurbhanj, Odisha.

Hon'ble Union Minister of Jal Shakti during 8th International Yoga Day on 21.06.2022 at Sam Sand Dunes, Jaisalmer, Rajasthan

10.4 COVID VACCINATION DRIVE

The Department has organised the COVID Vaccination - Amrit Mahotsava Camp on 17th August, 2022.The camp was organised in coordination with Dr. Suhas Dhandore, MoHFW and Vaccination team from Dr. RML Hospital, New Delhi. 117 persons were vaccinated in the camp.

10.5 HAR GHAR TIRANGA PROGRAMME

The Department has celebrated Har Ghar Tiranga Programme during Azadi Ka Amrit Mahotsav. Shri Gajendra Singh Shekhawat, Hon'ble Minister (Jal Shakti) distributed flags in the Ministry on 8th August 2022. 758 flags were distributed in the department for hoisting the same at homes from 13th to 15th August, 2022. All employees/staff of the Department actively celebrated the Har Ghar Tiranga Programme and hoisted the flags at their homes from 13th to 15th August, 2022.

10.6 SPECIAL CAMPAIGN 2.0 FOR DISPOSAL OF PENDING MATTERS (02.10.2022 TO 31.10.2022)

As per the guidelines issued by Department of Administrative Reforms and Public Grievances (DAR&PG), a special campaign for disposal of pending matters was undertaken by this Department and all Organizations functioning under this Department from 2nd October to 31st October, 2022. DAR&PG was designated as Nodal Department to monitor the campaign.

The Special Campaign 2.0 was conducted in two phases i.e. Preparatory Phase from 14th – 30th September, 2022 and Main Phase from 2nd – 31st October, 2022. Preparatory Phase was to sensitize the officers, mobilize the ground functionaries for the campaign, appoint Nodal Officers, identify pendency in identified categories / parameters, finalize the campaign sites, identify scrap and redundant materials and complete laid down procedures for their disposal.

During main phase of the Special Campaign 2.0, data was collected on all parameters of the Campaign from within the Department and all Organizations under the Department and uploaded on the SCDPM Portal on daily basis. The consolidated information on parameters of Special Campaign 2.0 in respect of Department (HQ) and organizations functioning under it is as under: -

Sl. No.	Parameters	Targets	Achievements	Achievement (%age)
1	MP References	49	40	82%
2	Parliament Assurances	19	16	84%
3	IMC References	5	5	100%
4	Public Grievances	139	139	100%
5	PMO References	4	4	100%
6	Files to be reviewed	60,513	60,513	100%
7	Weeding of files	21,626	21,626	100%
8	Cleanliness of Sites	321	321	100%
9	Revenue to be generated (in Rs.)	68,17,887/-	68,17,887/-	100%
10	Space freed	65,844 Sq ft	65,844 Sq ft	100%
11	Rules for Simplification	76	76	100%
12	Before & After Photographs	8	8	100%

10.7 SPECIAL CAMPAIGN 2.0 FOR CLEANLINESS

On the directions of Hon'ble Prime Minister a Special Campaign 2.0 (1st Oct to 31st Oct 2022) has been launched in the same manner as it was launched last year. The main focus of the Special Campaign 2.0 is to minimize pendency and ensure cleanliness in the Govt. offices. 12 campaigns were targeted during the preparatory phase of the Special Campaign 2.0 covering all the buildings where the offices of Department Secretariat are located.

10.8 CELEBRATION OF CONSTITUTION DAY- 2022

On the directions of Ministry of Parliamentary Affairs & Ministry of Social Justice and Empowerment celebrated "Constitution Day" on 26th November, 2022 to read the Preamble of the Constitution. Secretary, DoWR, RD & GR administered the Preamble reading in the conference room of the Department along with senior officers.

10.9 SWACHHATA PAKHWADA - 2022

The Department has observed Swachhata Pakhwada - 2022 from 16th March 2022 to 31st March 2022 on the directions of Department of Driniking Water and Sanitation. Several activities were conducted during the Swachhata Pakhwada - 2022 some of them are listed below:

The inaugural event of the Swachhata Pakhwada 2022 was observed by this Department on 16th March 2022. Swachhata Pledge administered by the Secretary, DoWR RD & GR followed by *shramdaan* at Shram Shakti Bhawan. Senior officers along with the officials of the Department participated in the event enthusiastically.

In view of the World Water Day i.e 22nd March 2022 falling in between the Swachhata Pakhwada Period, cleaning of Chhath Ghat at ITO, Delhi through Shramdaan was organized in coordination with WAPCOS Limited. World Water Day pledge duly administered by Secretary, WR RD & GR was taken on the Chhath Ghat. CMD, WAPCOS Ltd., DG, NMCG, ADG (MI) Stat. and other senior officers participated in the noble cause to clean the Chhath Ghat. Essay competitions on the theme of "Swachhata" were organized on 24th & 25th March 2022 which was open to all the officials of the Department.

SPECIAL CAMPAIGN 2.0 FOR CLEANLINESS

before **after**

Shram Shakti Bhawan


NRCD


Brahmaputra Board, Guwahati (Assam)


Shri Pankaj Kumar, Secretary, DoWR, RD & GR along with senior lady officers / staff on the occasion of International Women's Day on 08.03.2022 at Shram Shakti Bhawan

11 GENDER EMPOWERMENT / WOMEN WELFARE ACTIVITIES

Smt. Debashree Mukherjee, Special Secretary, DoWR, RD & GR lightening lamps on the occasion International Women's Day on 08.03.2022 at Shram Shakti Bhawan

11. GENDER EMPOWERMENT / WOMEN WELFARE ACTIVITIES

Women play a vital role in water resource management. The right approach and steps taken towards water conservation, water use in domestic as well as field (agricultural/ industrial) by women make considerable overall impact. The National Water Policy while emphasizing on participatory approach in water resources management, specifically provides for necessary legal and institutional changes to be made at various levels for the purpose of ensuring appropriate role for women.

Participatory Irrigation Management (PIM), which envisages involvement of end-users/farmers in all aspects and at all levels of irrigation management, functions through farmers groups generally known as WUAs. DoWR, RD & GR, while issuing guidelines, specifically emphasized that the States consider representation of women in the Water Users' Associations (WUAs) at all levels. As a result, many States have amended their irrigation Acts or came out with specific Acts on participatory irrigation management. In addition to smooth implementation of micro irrigation system and agriculture related activities, this may lead to additional income generation and sustainability of women wing of WUAs.

International Women's Day-2022 was organized by DoWR, RD & GR on 08.03.2022 inviting all women employees of the Department. The theme of the event was 'Preserving Water' with motto 'Jewels can't save life but water can'.

A Gender & Child Budgeting Cell has been established in the Department to promote gender sensitization and awareness. The Department is emphasizing participation of women in various training programmes being conducted in the Department and its field offices. A separate cell for women staff employees has also provided in the Staff Canteen of the Department.

Under Atal Bhujal Yojana, participation of women and vulnerable groups is being ensured through membership in committees and attendance in meetings, which will also be checked during physical verification. A gender based evaluation study has also been initiated in order to gauge the impact of IEC activities on gender mainstream. This ongoing study will also provide some insights and suggestions on the ways and means to improve the strategy in future.

Celebration of International Women's Day on 08.03.2022 at Shram Shakti Bhawan

Shri R. K. Agrawal, CMD, WAPCOS & NPCC addressed and motivated Women Employees on the occasion of International Women's Day on 08.03.2022

Shri Prahlad Singh Patel, Hon'ble Minister of State for Jal Shakti presided over the Hindi Salahakar Samiti's 1st Meeting held on 15.06.2022 at New Delhi

12 PROGRESSIVE USE OF HINDI

The Second Sub-Committee of Parliamentary Committee on Official Language inspected Chandigarh office of WAPCOS on 05.01.2023 at Vigyan Bhawan, New Delhi

12. PROGRESSIVE USE OF HINDI

Effective measures have been taken for progressive use of Hindi for official purposes in various sections and attached and subordinate offices of the Department during the year. Efforts were also made to ensure the compliance of various orders/ instructions issued by the Department of Official Language. The Second Sub-Committee of Parliamentary Committee on Official Language inspected seven offices of the DoWR, RD & GR viz. (1) CWC, Delhi (2) WAPCOS Ltd., Gurugram (3) NPCC Ltd., Gurugram (4) CGWB, Faridabad, (5) CSMRS, Delhi (6) WAPCOS Ltd., Bhubaneswar and (7) NWDA, Bhubaneswar. 18 Regional Offices of seven offices mentioned above were inspected by Parliamentary Committee on Official Language during the current year. Apart from this, official language inspections are also conducted from time to time by the officials of the Hindi Section of the Ministry of Jal Shakti.

During the year 2022, Hindi Salahakar Samiti was constituted in the Ministry of Jal Shakti. Sh. Prahlad Singh Patel, Hon'ble Minister of State for Jal Shakti presided over the Hindi Salahakar Samiti's 1st Meeting held on 15.06.2022 at New Delhi.

The Department has conducted three meetings of Official Language Implementation Committee. In these meetings, the Committee reviewed the progress made in the use of Hindi in the Department as well as in its various offices and pinpointed the shortfalls in relation to targets prescribed by Department of Official Language. Measures were also suggested for the removal of shortfalls in the meeting.

Six officers of the DoWR, RD & GR participated in 2nd 'Akhil Bhartiya Rajbhasha Sammelan' held at Surat from 14-15 September, 2022 by Deptt. of Official Language, Ministry of Home Affairs.

In order to encourage the use of Hindi in the official work of the Department, messages of Hon'ble Union Minister of Jal Shakti and Hon'ble Minister of State for Jal Shakti and the appeal by Secretary, DoWR, RD & GR were issued. Hindi Fortnight was organized in the Department from 14.09.2022 to 29.09.2022. Before organizing the Hindi fortnight, all the offices and employees of DoWR, RD & GR were given a pledge to do their maximum work in the official language Hindi. During the fortnight, eight competitions viz., Hindi Essay, Questionnaire on Official Language Hindi (written), Translation Competition(written), Hindi Typing, Hindi Noting-Drafting, Hindi Debate, Hindi Essay competition (for MTS level candidates), Hindi poetry recitation were organized. Officers and employees of the Department enthusiastically participated in these

competitions. First, second and third prizes of Rs. 5,000/-, Rs. 3,500/- and Rs. 2,500/- respectively were given to winners of each of these competitions. There was also provision of four consolation prizes of Rs. 1,500/- for each of these competitions. The prizes were given to 56 meritorious participants.

Incentive schemes like 'Rajbhasha Vaijayanti Puraskar Yojana' and 'Incentive Scheme for doing work in Hindi' were implemented in the Department for promoting the implementation of official language policy. 'Rajbhasha Vaijayanti Purashkar Yojana' is for promoting Hindi work in attached and subordinate organizations of the Department. Besides this "Moulik Pustak Lekhan Yojana" is also being implemented in the Ministry. Under the head, an amount of Rs. one lakh has been earmarked as prize money.

During the inspection by the Second Sub-Committee of Parliamentary Committee on Official Language on 03.01.2023 at Ranchi, Jharkhand

Secretary, DoWR, RD & GR inspected sections of the Department in Shram Shakti Bhawan to review the progress of files & cleanliness activities under Special Campaign 2.0 on 06.10.2022

13

STAFF WELFARE

During International Yoga Day, 21st June, 2022

13. STAFF WELFARE

13.1 MONITORING OF RESERVATION FOR SC/ ST/ OBCS

The Scheduled Castes/Scheduled Tribes and Other Backward Classes (SCs/STs/OBCs) Cell also forms part of Administration Section. It renders secretarial assistance to Liaison Officer for SCs/STs and OBCs in discharging the functions on various matters relating to reservation for SCs/STs/OBCs in Government Services.

This Department is responsible for reservation of various categories in services only for Staff Car Drivers and MTS grade. Implementation of reservation in these posts to Scheduled Castes, Scheduled Tribes, OBCs, Ex-Servicemen and Divyangjan is followed as per Government rules. The post of MTS is filled through SSC. The vacancies in MTS grade are intimated to SSC.

Shri Binod Kumar, Director is Liaison Officer for OBC in respect of the Department (Secretariat). Shri Mukesh Kumar, Deputy Secretary is appointed as Liaison Officer for SC/ST in respect of the Department (Secretariat).

13.2 COMPLAINTS COMMITTEE ON SEXUAL HARASSMENT OF WOMEN EMPLOYEES

In compliance with the guidelines laid down by the Hon'ble Supreme Court of India on prevention of sexual harassment of women employees, a committee is functioning to look into the complaints of the women working in the Main Secretariat of the Department. The composition of the Committee is as below:

Sl. No.	Name & Designation (Shri/Smt./Ms)	Designated as
1	Soumya P. Kumar, Director (MI Stat)	Chairperson
2	Shalini Gupta, Under Secretary (GWE)	Member
3	S.N. Pal, Under Secretray (Coordination)	Member
4	Representative of Nari Raksha Samiti, NGO	Member

The Complaints Committee deemed to be the Inquiring Authority appointed by the Disciplinary Authority for the purpose of CCS (CCA) Rules, 1965 and its reports are treated as Inquiry Report. It examines the complaints made against sexual harassment by women employee(s) and, if necessary, conducts an enquiry. On completion of the same, the committee submits its findings to the Joint Secretary (Admn.), DoWR, RD & GR for further necessary action.

During the year ending 31st December, 2022, **no complaint** was received by the Committee.

13.3 REDRESSAL OF PUBLIC/ STAFF GRIEVANCES

A Grievances Redressal Cell was set up in the DoWR, RD & GR which entertains the grievances of employees/officers working in various organizations under the Department.

During the period from 1st January, 2022 to 31st December, 2022, 2,035 grievance petitions were received in this Department. Besides, 173 grievance petitions pending at the end of 31st December, 2021 were carried forward. Out of total 2,208 grievance petitions, 2,127 were settled during the above period. The list of Public/Staff Grievance Officers in the Department and its various organizations along with postal addresses is given at ***Annexure-XI.***

WAPCOS and NPCC organised a conference on "Preventive Vigilance" on 4th November, 2022 at New Delhi during Vigilance Awareness Week 2022. Shri R. K. Agrawal, CMD, WAPCOS & NPCC welcomed the Chief Guest, Shri Pankaj Kumar, Secretary, DoWR, RD & GR

14 TRANSPARENCY & VIGILANCE

Smt. Debashree Mukherjee, Special Secretary, DoWR, RD & GR administered Integrity Pledge during Vigilance Awareness Week (31st October, 2022 to 6th November, 2022).

14. TRANSPARENCY & VIGILANCE

14.1 TRANSPARENCY

THE RIGHT TO INFORMATION ACT, 2005

The Right to Information Act, 2005 came into effect from 12.10.2005. As provided under section 4(1) (b) of the Act, information on mandatory disclosure in respect of Department (Sectt.) and by all organizations of the department were uploaded on the Department's website mowr.nic.in. Information of Central Public Information Officers (CPIOs) in terms of section 5 (1) and (2) of the said Act was hosted on the website of the Department and concerned organizations.

The Coordination Section of DoWR, RD & GR, has been assigned the task of accepting applications and the fees under the RTI Act. During the period from 01.01.2022 to 31.12.2022, 1,365 RTI applications and 76 RTI appeals were received which were forwarded to concerned Central Public Information Officers/ First Appellate Authorities in the Department/ Other Public Authorities for necessary action under RTI Act, 2005. The details of Central Public Information Officers / Appellate Authorities in the various Wings/Sections of the Department are given at ***Annexure-XII.***

14.2 VIGILANCE

The Vigilance matters relating to this Department and its organizations are handled by the Vigilance Division, which functions under the guidance, supervision and control of a part time Chief Vigilance Officer of the level of Joint Secretary and above assisted by a Director and the Vigilance Section. Various aspects pertaining to vigilance cases of all the employees of the Ministry (proper) and all Group A and retired officers of the attached/subordinate offices as well as Group-A officers of other organizations under the Ministry, including Board level officers of PSUs are dealt with by the Division.

The Vigilance Division functions as a link between the Ministry and the Central Vigilance Commission (CVC) and other Authorities in the matters pertaining to vigilance. The Division tenders advice, wherever required, on vigilance matters, to the Attached and Subordinate Offices, PSUs, Statutory Bodies etc. under the administrative control of the Ministry, in consultation with CVC and other agencies/ departments.

The Division monitors the disciplinary cases and related matters of the organizations under the Ministry through periodical returns prescribed by CVC, DoP&T, etc. The Division prepares the

"List of officers of Doubtful Integrity" and the "Agreed List" in consultation with CBI.

This year, Vigilance Awareness Week was observed by the Vigilance Division from 31st October, 2022 to 6th November, 2022. An essay competition was held which received wide participation from the employees.

Seven preventive vigilance inspections of organizations under the purview of the Department are to be carried out; so far four PVI during the year 2022-23 have been completed with a view to check various irregularities and identify corruption prone areas.

The Vigilance Division is also responsible for calling for the Annual Immovable Property Returns of all Group 'A', 'B' and 'C' Staff and monitoring them. Two CVOs (including one full time CVO, appointed by DoP&T) with consultation of CVC and Three VOs were appointed in the organizations.

Har Ghar Tiranga Programme, 13-15 August, 2022 at CWC office, Nagpur

15 APPOINTMENT OF PERSONS WITH SPECIAL NEEDS

Cleanliness actitivities under Special Campaign 2.0 at CWC office, Guwahati on 17.10.2022

15. APPOINTMENT OF PERSONS WITH SPECIAL NEEDS

Monitoring of the recruitment of persons with special needs is being done to ensure fulfilment of prescribed percentage of reservation for the category by the Department as well as various organizations under it. Periodic reports on the progress made are sent regularly to the Ministry of Social Justice & Empowerment. The persons with special needs are given facilities, concessions and relaxations at the time of test/interview as per the rules on the subject matter.

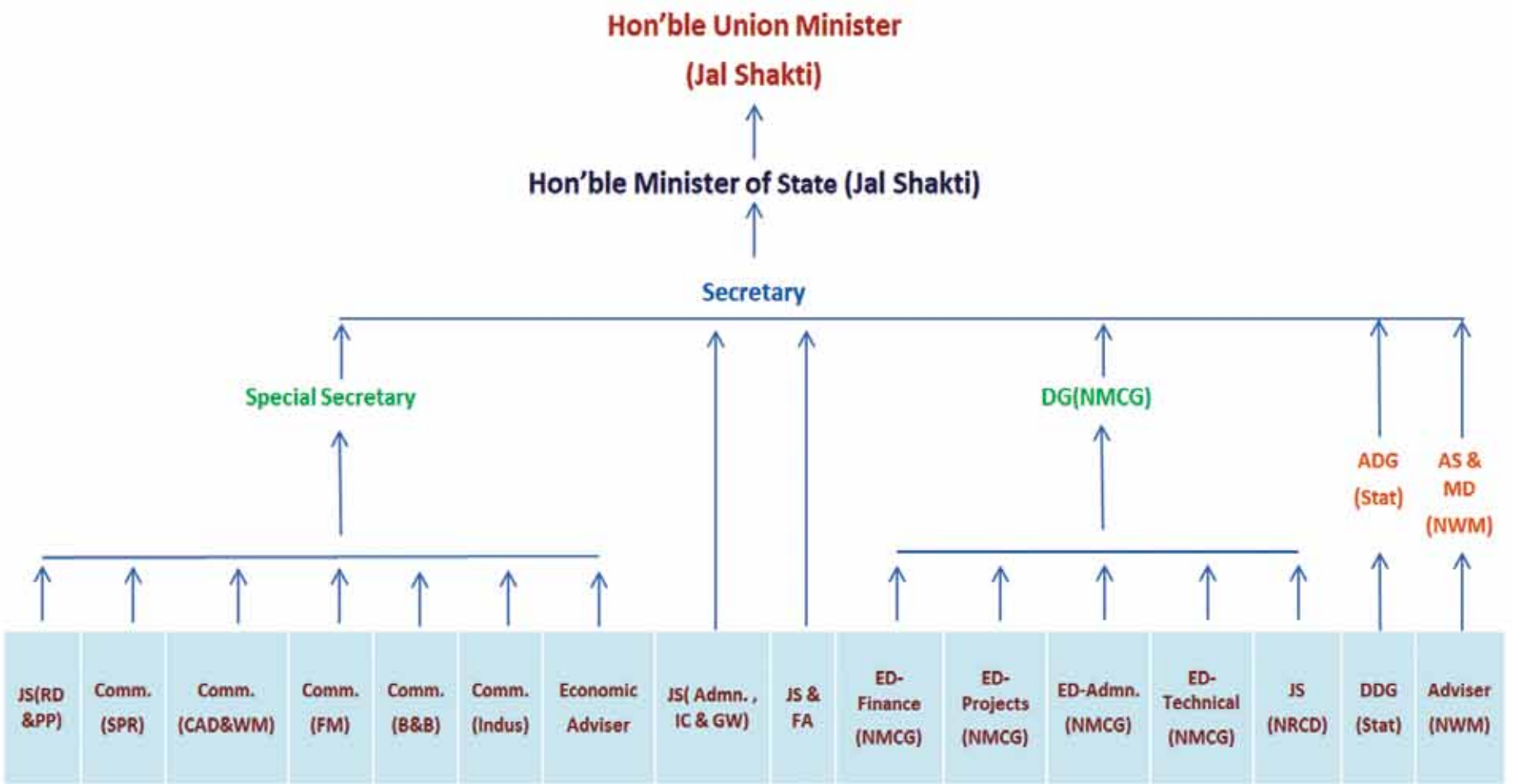
Administration wing is dealing with reservation of persons with disabilities (Divyangjan) in MTS posts. The vacancies in MTS grade are filled through SSC. As on 31.12.2022 the total strength in MTS grade was 77 out of which three persons are differently abled.

The relevant reservation rosters as prescribed are also maintained for planning the reservation of persons with special needs. Shri Mukesh Kumar, DS is Liaison Officer for persons with disabilities (Divyangjan) in respect of the Department.

Annexures

ANNEXURE – I

ORGANIZATION CHART OF DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION



ANNEXURE –II

STAFF IN POSITION IN THE DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

AS ON 31.12.2022

Group	Total Employees in position	Representation of SC/ST/OBC				PH
		SC	ST	OBC	Other	
A	103	11	07	05	80	--
B	166	27	07	45	87	1
C	130	37	09	28	56	2
Total	**399**	**75**	**23**	**78**	**223**	**3**

ANNEXURE – III

LIST OF NAMES AND ADDRESSES OF SENIOR OFFICERS & HEADS OF ORGANISATIONS UNDER THE DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

S. No.	Name of the Organisation	Head of the Organisation/ Senior Officer
1.	Department of Water Resources, RD & GR, Room No. 412, 4th Floor, Shram Shakti Bhavan, Rafi Marg, New Delhi.	Shri Pankaj Kumar Secretary, Tel. No. 011-23710305 / 23715919, Fax. 011-23731553.
2.	Department of Water Resources, RD & GR, Room No.404, 4th Floor, Shram Shakti Bhavan, Rafi Marg, New Delhi.	Smt. Debashree Mukherjee, Special Secretary, Tel. No. 011-23714609, Fax.011-23716894.
3.	Department of Water Resources, RD & GR, Room No.6, 2nd Floor, Bwing, Lok Nayak Bhawan, Khan Market, New Delhi.	Shri Sukh Ram Meena, Additional Director General (Stat.) Tel. No. 011-24691080 Fax. 011- 24691080
4.	Department of Water Resources, RD & GR, Room No.403, 4th Floor, Shram Shakti Bhavan, Rafi Marg, New Delhi.	Shri Subodh Yadav, Joint Secretary (Admn., IC & GW), Tel. No. 011-23710343 Fax. 011-23730719
5.	Department of Water Resources, RD & GR, Room No. 406, 4th Floor, Shram Shakti Bhavan, Rafi Marg, New Delhi -110001	Shri Anand Mohan, Joint Secretary (RD&PP), Tel. No. 011-23725477 Fax. 011-24369170
6.	Department of Water Resources, RD & GR, Room No. 401, 4th Floor, Shram Shakti Bhavan, Rafi Marg, New Delhi -110001	Smt. Rich Misra, Joint Secretary & Financial Adviser, Tel. No. 011-23710297 Fax. 011-23710297
7.	Department of Water Resources, RD & GR, Room No.411, 4th Floor, Shram Shakti Bhavan, Rafi Marg, New Delhi -110001	Shri A.S.Goel, Commissioner (SPR), Tel. No. 011-23710107
8.	Department of Water Resources, RD & GR, Room No.236, 2nd Floor, 'B'wing, Krishi Bhavan, Rafi Marg, New Delhi-110001	Shri Anuj Kanwal, Commissioner (CADWM) Telefax No. 011-23382256

S. No.	Name of the Organisation	Head of the Organisation/ Senior Officer
9.	Department of Water Resources, RD & GR, Room No. 827, 8th Floor, C.G.O. Complex, Lodhi Road, New Delhi-110003	Shri Atul Jain, Commissioner (FM) Tel. No. 011-24368238 Fax. 011-24362780
10.	Department of Water Resources, RD & GR, Room No. 204, 2nd Floor, C.G.O. Complex, Lodhi Road, New Delhi-110003	Shri S.K. Sinha, Commissioner (B&B) Tel. No. 011-24364724.
11.	Department of Water Resources, RD & GR, Room No. 814, 8th Floor, C.G.O. Complex, Lodhi Road, New Delhi-110003	Shri A.K. Pal, Commissioner (Indus) Tel. No.011-24361540 Fax. 011-24361540
12.	Department of Water Resources, RD & GR, Room No. 815, 8th Floor, Block-11,C.G.O. Complex, Lodhi Road, New Delhi-110003	Dr. R. Sathish, Economic Adviser Tel. No. 011-24368941
13.	Department of Water Resources, RD & GR, 2nd Floor, B wing, Lok Nayak Bhawan, Khan Market, New Delhi-110003	Smt. Priyanka Kulshreshtha, Deputy Director General Tel. No. 011-24699496
14.	Department of Water Resources, RD & GR, National River Conservation Directorate, Antyodaya Bhawan, C.G.O. Complex, Lodhi Road,New Delhi- 110003	Shri Anand Mohan, Joint Secretary (NRCD) Tel. No.011-24365020 Fax. 011-24369382
Attached Offices		
15.	Central Water Commission, Room No. 326, Sewa Bhawan, R. K. Puram, New Delhi-110022	Shri Kushvinder Vohra, *(Shri J. Chandrashekhar Iyer retired on 31.12.2022)* Chairman, Tel. No.011-26715351, Fax: 011-26108614.
16.	Central Soil and Materials Research Station, Room No. 111, Hauz Khas, New Delhi-110016	Dr. R Chitra, Director, Tel. No. 011-26961894/ 26967985 Fax. 011-26967985
Subordinate Offices		
17.	Farakka Barrage Project, P.O. Farakka Barrage, Distt. Murshidabad-742212, West Bengal	Shri R. D. Deshpande, General Manager, Tel. No. 03485-253644, Fax. 03485-253608.

S. No.	Name of the Organisation	Head of the Organisation/ Senior Officer
18.	Ganga Flood Control Commission, Sinchai Bhawan, 3rd floor, Patna-800015	Shri M. K. Srinivas, Chairman, Tel. No. 0612-2217294 Fax. 0612-2217960
19.	Central Water and Power Research Station, P.O. Khadakwasla, Pune-411024	Shri. R. S. Kankara, Director, Tel. No.020-24380552, Fax. 020-24381004.
20.	Central Ground Water Board, Bhujal Bhawan, Faridabad-121001.	Shri Sunil Kumar, Chairman, Tel. No. 0129-2477101, Fax. 0129-2477200.
21.	Bansagar Control Board, Bansagar Colony, Rewa, Madhya Pradesh, 486001.	Shri M. W. Paunikar, Secretary, Tel. No.07662-226318 Fax. 07662-242433
22.	Upper Yamuna River Board, 201, 'S' ,Sewa Bhawan,R.K.Puram, New Delhi-110016	Shri Kushvinder Vohra, Chairman, Tel. No.011-26195415 Fax. 011-26195289
Public Sector Undertakings		
23.	Water and Power Consultancy Services (India) Limited, 5th Floor, 'Kailash', 26, Kasturba Gandhi Marg, New Delhi.	Shri R. K. Agrawal, Chairman & MD, Tel. No. 011-23313881 Fax. 011-23314924
24.	National Projects Construction Corporation Limited, Plot No.148, Sector-44, Gurugram, Haryana-122003.	Shri R. K. Agrawal, Chairman & MD, Tel. No.0124-2385219, Fax. 0124-2385219.
Registered Societies/ Autonomous Bodies / Statutory Bodies etc.		
25.	National Mission for Clean Ganga, Department of Water Resources, RD & GR, 1st Floor, MDCNS Building, India Gate, New Delhi-110002	Shri G. Asok Kumar, Director General (NMCG) Tel. No. 011-23049528
26.	National Water Mission, 2nd Floor, Block-3, C.G.O.Complex, Lodhi Road, New Delhi-110003	Smt. Archana Varma, Additional Secretary & Mission Director, Tel. No. 011-24365200

S. No.	Name of the Organisation	Head of the Organisation/ Senior Officer
27.	National Institute of Hydrology, Jal Vigyan Bhawan, Roorkee, Uttarakhand-247667.	Dr. Sudhir Kumar, Director, Tel. No. 01332-272106 Fax. 01332-272123/273976
28.	National Water Development Agency, 18-20, Community Centre, Saket, New Delhi -110017	Shri Bhopal Singh, Director General, Tel. No. 26519164 Fax. 26513846
29.	North Eastern Regional Institute of Water and Land Management, Dolabari, Tezpur, Sonitpur, Assam-784027	Dr. Pradip Kumar Bora, Director, Tel. No. 03712-291069, Fax. 03712-268007
30.	Narmada Control Authority, Narmada Sadan, Sec-B, Scheme No.74-C, Vijay Nagar, Indore-452010	Shri Ashok Kumar Thakur, Executive Member & HoD, Tel. No. 0731-2557276, Fax. 0731-2559888.
31.	Brahmaputra Board, Basistha, Guwahati, Assam-781029	Shri Rajiv Yadav, Chairman, Tel. No.0361-2301099 Fax. 0361-2301099
32.	Betwa River Board, Nandanpura, Shivpuri Highway, Jhansi-284003	Shri B. S. Mohaniya, Secretary, Telefax. No. 0510-2480183
33.	Tungabhadra Board, Tungabhadra Dam, Taluk: Hospet, Distt: Bellary, Karntaka -583225	Shri D.M. Raipure, Chairman, Tel. No. 040-29808740 Fax. 040-29808742
34.	Krishna River Management Board, Jalasoudha, Errum Manzil, Hyderabad, 500082.	Shri M. P. Singh, Chairman, Tel. No. 040-23301659.
35.	Godavari River Management Board, 5th Floor, Jalasoudha, Errum Manzil, Hyderabad-500082.	Dr. Mukesh Kumar Sinha, Chairman, Tel. No. 040-23313163 Fax. 040-23313162

LIST OF PRIORITY PROJECTS (AIBP WORKS) REPORTED COMPLETED/ALMOST COMPLETED

S. No.	State	Name of the Project	Ultimate Irrigation Potential (inTh.Ha.)
1	Andhra Pradesh	Maddigedda	1.42
2	Assam	Champamati	25.00
3	Chhattisgarh	Maniyari Tank	14.52
4		Kharung	10.30
5	Jammu & Kashmir	Rajpora Lift	2.43
6		Restoration & Mod. of Main Ravi Canal	50.75
7		Tral Lift	6.00
8	Karnataka	Sri Rameswar Irrigation	13.80
9		Bhima LIS	24.29
10		Karanja	29.23
11	Madhya Pradesh	Singhpur Project	10.20
12		Mahuar Project	13.78
13		Sagad Project	17.06
14		Sindh Project Phase-II	162.10
15		Indira Sagar Project Canal Phase-I &II (km. 0 to km. 142)	62.20
16		Omkareshwar roject Canal Phase-IV *(OSPlift)*	54.63
17		Indira Sagar Project Canal Phase-V *(Khargone Lift)*	33.14
18		Bansagar Unit 2	154.54
19		Barriyarpur LBC	43.85
20		Sanjay sagar (Bah) Project	17.81
21		Bargi diversion Project Ph-I	21.19

S. No.	State	Name of the Project	Ultimate Irrigation Potential (inTh.Ha.)
22		Mahi Project	33.75
23		Mahan Project	19.74
24		Omkareshwar Project Canal Phase-II	19.578
25		Omkareshwar Project Canal Phase-III	48.592
26		Indira Sagar Project Canal Phase - III	20.7
27		Indira Sagar Project Canal Phase - IV	19.6
28	Maharashtra	Bawanthadi (IS)	27.71
29		Lower Panzara	6.79
30		Dongargaon	2.77
31		Warna	54.75
32		Nandur Madhmeshwar Ph-II	20.50
33		Upper Kundalika	2.80
34		Lower Dudhna	44.48
35		Khadakpurna	23.86
36		Dhom Balakwadi	18.10
37	Manipur	Dolaithabi	7.54
38	Odisha	Upper Indravati (KBK)	85.95
39		Rukura-Tribal	7.65
40		Ret	8.50
41		Telengiri	13.83
42		Lower Indra	35.87
43	Punjab	Kandi Canal Extension (Ph.II)	23.33
44		Rehabilitation of Ist Patiala Feeder and Kotla Branch Project	68.62
45	Rajasthan	Narmada Canal	245.88
46		Mod. of Gang Canal	69.69
47	Telangana	Gollavagu Project	3.85
48		Rallivagu project	2.43
49		Mathadivagu Project	3.44
50	UttarPradesh	Bansagar Canal	150.13

ANNEXURE -V

CENTRAL ASSISTANCE & STATE SHARE RELEASED FOR AIBP WORKS OF 99 PRIORITY PROJECTS UNDER PMKSY (AS ON 31.12.2022)

(Rs. in crore)

Sl. No.	State	Releases under PMKSY-AIBP					
		2016-17 to 2021-22		2022-23 (upto 31.12.2022)		Total 2016-17 to 2022-23 (upto 31.12.2022)	
		CA Released	State Share release through NABARD	CA Released	State Share release through NABARD	CA Released	State Share release through NABARD
1	Andhra Pradesh	22.63	489.34	0.00	0.00	22.63	489.34
2	Assam	0.00	108.10	0.00	0.00	0.00	108.10
3	Bihar	110.24	0.00	0.00	0.00	110.24	0.00
4	Chhattisgarh	44.20	0.00	0.00	0.00	44.20	0.00
5	Goa	0.00	48.89	0.00	0.00	0.00	48.89
6	Gujarat	4,440.24	3,611.03	0.00	0.00	4,440.24	3,611.03
7	Jharkhand	756.73	518.10	0.00	0.00	756.73	518.10
8	Karnataka	1,186.62	0.00	0.00	0.00	1,186.62	0.00
9	Kerala	0.00	0.00	0.00	0.00	0.00	0.00
10	Madhya Pradesh	668.29	1,083.10	61.93	0.00	730.22	1,083.10
11	Maharashtra	2,143.02	12,279.58	0.00	684.50	2,143.02	12,964.08
12	Manipur	240.11	335.12	0.00	0.00	240.10	335.12
13	Odisha	1,208.86	3,259.49	0.00	0.00	1,208.86	3,259.49
14	Punjab	52.42	0.00	0.00	0.00	52.42	0.00
15	Rajasthan	458.56	259.01	0.00	0.00	458.56	259.01
16	Telangana	981.49	0.00	0.00	0.00	981.49	0.00
17	Uttar Pradesh	1,397.91	6,431.18	0.00	0.00	1,397.91	6,431.18
18	UT of J&K	39.71	0.00	0.00	0.00	39.71	0.00
19	UT of Ladakh	2.98	0.00	0.00	0.00	2.98	0.00
	Total	**13,753.99**	**28,422.94**	**61.93**	**684.50**	**13,815.92**	**29,107.44**

CENTRAL ASSISTANCE RELEASED FOR AIBP WORKS OF NEWLY INCLUDED PROJECTS UNDER PMKSY (AS ON 31.12.2022)

S. No.	State	Project Name	CA released during 2021-22 (Rs. in crore)	CA released during 2022-23 (Rs. in crore) (as on 31.12.2022)
1	Maharashtra	Jihe Kathapur Project	6.48	0
2	Himachal Pradesh	Nadaun Project	2.25	0
3		Renukaji dam Project*	1,048.54	0
4	Rajasthan	Parwan multipurpose project (National Project)	41.43	0
5	Tamil Nadu	Kannadian channel	9.04	0
6	Assam	ERM of Sukla irrigation project	0	41.98
7	Manipur	ERM of Loktak LIS (Ph-I)	0	0
8	Uttarakhand	Lakhwar multipurpose project (National Project)	0	38.58

**Rs. 446.96 crore were released to Renukaji dam Project during 2016-17 in pursuant to Supreme Court order for enhanced land compensation.*

ANNEXURE-VI

CENTRAL ASSISTANCE & STATE SHARE RELEASED FOR CADWM WORKS OF PRIORITY PROJECTS UNDER PMKSY (AS ON 31.12.2022)

(Rs. in crore)

Sl. No.	State	2016-17 to 2021-22		2022-23 (upto 31.12.2022)		Total 2016-17 to 2022-23 (upto 31.12.2022)	
		CA released	State Share release through NABARD	CA released	State Share release through NABARD	CA released	State Share release through NABARD
1	Andhra Pradesh	69.18	0.00	0.00	0.00	69.18	0.00
2	Assam	7.55	0.00	0.00	0.00	7.55	0.00
3	Bihar	35.82	0.00	0.00	0.00	35.82	0.00
4	Chhattisgarh	21.71	0.00	0.00	0.00	21.71	0.00
5	Goa	3.84	0.00	0.00	0.00	3.84	0.00
6	Gujarat	1,719.15	0.00	0.00	0.00	1,719.15	0.00
7	Jammu & Kashmir	3.57	0.00	0.00	0.00	3.57	0.00
8	Jharkhand	0.00	0.00	0.00	0.00	0.00	0.00
9	Karnataka	75.28	0.00	0.00	0.00	75.28	0.00
10	Kerala	2.69	0.00	0.00	0.00	2.69	0.00
11	Madhya Pradesh	310.52	234.260	0.00	0.00	310.52	234.26
12	Maharashtra	149.20	112.070	0.00	0.00	149.20	112.070
13	Manipur	2.09	34.900	0.00	0.00	2.09	34.900
14	Odisha	131.964	250.99	0.00	0.00	131.964	250.99
15	Punjab	18.08	0.00	4.50	0.00	22.58	0.00
16	Rajasthan	112.65	120.92	20.78	18.00	133.43	138.92
17	Telangana	36.34	0.00	0.00	0.00	36.34	0.00
18	Uttar Pradesh	156.00	0.00	0.00	0.00	156.00	0.00
	Total	**2,855.63**	**753.14**	**25.28**	**18.00**	**2,880.91**	**771.14**

ANNEXURE-VII

STATE/UT - WISE DETAILS OF CENTRAL ASSISTANCE RELEASED UNDER FMP/FM COMPONENT OF FMBAP

(Rs. in crore)

Sl. No.	State	Funds released under FMP						Total funds released
		During 11th and 12th Plan	2017-18	2018-19	2019-20	2020-21	2021-22	
1	Arunachal Pradesh	169.60	21.18	--	--	--		190.78
2	Assam	813.75	245.49	142.12	85.03	--	14.08	1,300.47
3	Bihar	907.82	--	16.58	--	--		924.41
4	Chhattisgarh	19.32	--	--	--	--		19.32
5	Goa	11.98	--	--	--	--		11.98
6	Gujarat	2.00	--	--	--	--		2.00
7	Haryana	46.91	--	--	--	--		46.91
8	Himachal Pradesh	387.85	87.50	162.60	176.41	11.87	6.35	832.57
9	Jammu & Kashmir	422.52	110.40	52.20	92.74	10.14	116.79	804.79
10	Jharkhand	22.71	--	--	--	--		22.71
11	Karnataka	23.80	--	--	--	--		23.80
12	Kerala	118.90	19.05	--	--	--		137.95
13	Manipur	90.70	--	--	--	--	52.38	143.08
14	Meghalaya	3.81	--	--	--	--		3.81
15	Mizoram	16.41	0.48	--	--	--		16.89
16	Nagaland	83.12	--	10.84	--	--		93.96
17	Odisha	101.12	--	--	--	15.79	2.51	119.41
18	Puducherry	7.50	--	--	--	--		7.50
19	Punjab	40.43	--	--	--	--		40.43
20	Sikkim	91.84	--	--	--	--		91.84
21	Tamil Nadu	59.82	--	--	--	--		59.82
22	Tripura	23.62	--	--	--	--		23.62
23	Uttar Pradesh	401.91	13.55	15.58	39.15	--		470.18
24	Uttarakhand	203.61	--	4.63	35.58	--	2.77	246.60
25	West Bengal	802.01	65.03	23.65	117.12	--	44.15	1051.96
	Total	**4,873.07**	**562.67**	**428.20**	**546.01**	**37.79**	**239.03**	**6,686.79**

ANNEXURE-VIII

STATE-WISE AREA PROTECTED AND POPULATION BENEFTTED UNDER FLOOD MANAGEMENT PROGRAMME DURING 11TH & 12TH PLAN

Sl. No	State	Projects (in number)	Area protected (hectares)	Population benefitted (number)
1	Arunachal Pradesh	21	47,616.53	2,01,209
2	Assam	105	6,70,314.46	1,60,63,422
3	Bihar	42	28,67,117	2,23,45,566
4	Chhattisgarh	3	100.05	35,596
5	Goa	2	300	27,000
6	Gujarat	2	319.97	46,400
7	Haryana	1	1,41,279	10,53,441
8	Himachal Pradesh	6	14,461.81	2,75,694
9	Jammu &Kashmir	19	2,31,987.654	15,31,505
10	Jharkhand	3	17,700	1,96,500
11	Karnataka	2	18	80,000
12	Kerala	2	3,841	10,756
13	Manipur	22	39,315	2,01,640
14	Mizoram	1	135.68	312
15	Nagaland	14	2,463.42	1,63,000
16	Odisha	66	1,93,749	11,54,300
17	Punjab	4	11,383	55,500
18	Sikkim	28	48,727.87	2,06,534
19	Tamil Nadu	5	3,19,516.9	20,17,103
20	Tripura	11	1,964	88,480
21	Uttar Pradesh	24	2,64,862	39,64,469
22	Uttarakhand	16	23,529.3	1,31,122
23	West Bengal	16	93,736.7	23,57,250
	Total	**415**	**49,94,438.4**	**5,22,06,799**

'SURVEY & INVESTIGATION' AND PREPARATION OF DETAILED PROJECT REPORTS OF MULTIPURPOSE PROJECTS BY BRAHMAPUTRA BOARD

Sl. No.	Name of Project	Basin	Installed Capacity (MW)	Status
A. Completed DPR				
1.	Dihang (Siang) Dam Project	Brahmaputra	20,000	Single-stage project DPR was completed in 1983 by the Board. Handed over to NHPC under 3 stage development in 2000
2.	Subansiri Project	Brahmaputra	4,800	Single stage project DPR was completed in 1983 by the Board. Handed over to NHPC under 3 stage development in 2000
3.	Tipaimukh Project	Barak	1,500	DPR completed in 1995. Handed over to NEEPCO in 1999
4.	Bairabi Dam Project	Barak	75	Handed over to Govt. of Mizoram in 2000
5.	Pagladiya Project	Brahmaputra	3	Implementation by Brahmaputra Board halted due to inability to provide land for construction by Government of Assam.
B. DPR Partially completed				
1.	Dibang Dam Project	Brahmaputra	4,900	S & I Executed by the Board and DPR partially completed. Handed over to NHPC in 2006 and under execution by NHPC.
2.	Lohit Dam Project	Brahmaputra	3,000	S & I completed. Project entrusted to private developer by Govt. of Arunachal Pradesh in 2009.
3.	Kynshi Stage-I Dam Project	Others	450	S & I was under final stage of completion.
4.	Kynshi Stage-II Dam Project	Others	450	Govt of Meghalaya assigned the project to private developers in 2011.

Status of Projects currently under S & I and DPR preparation is as under:

Sl. No.	Name of Project	State	Basin	Installed Capacity (MW)	Status
1.	Kulsi Multi-Purpose Project (Identified as National Project)	Assam & Meghalaya	Brahmaputra	55	DPR completed. Government of Assam vide letter No. PEL.227/2021/5 dt. 14.03.2022 requested to formally hand over the project DPR for implementation funded by Government of Assam. Government of Meghalaya vide letter No. POL 146/2021/104 dt. 23.02.2022 requested to keep in abeyance the execution till issue of boundary dispute is settled with Govt. of Assam.
2.	Noa-Dehing Dam Project (Identified as National Project)	Arunachal Pradesh	Brahmaputra	72	DPR completed. Govt. Of Arunachal Pradesh has taken over the project.
3.	Simsang Dam Project	Meghalaya	Others	65	Work for preparation of DPRs is entrusted to WAPCOS and is in progress.
4.	Jiadhal Dam Project	Arunachal Pradesh	Brahmaputra	70	
5.	Killing Dam Project	Assam & Meghalaya	Brahmaputra	85	Survey & investigation halted
6.	Preparation of DPR for flash floods of rivers in Bodo territorial Council Area	BTC, Assam	Brahmaputra	--	Inception report completed. Geological investigation completed.

ANNEXURE-X

BUDGET AT A GLANCE

(Rs. in crore)

Scheme/ Office/ Component	Actuals 2021-22	BE 2022-23	Exp. upto 31.12.2022 (tentative)
Central Sector Schemes			
Farakka Barrage Project	87.97	110.98	35.09
DRIP	22.99	100.00	3.60
National Ganga Plan	1,900.00	2,800.00	1,600.00
River Basin Management	171.00	97.00	40.53
Development of Water Resources Information System	155.16	185.00	117.06
Ground Water Management & Regulation	179.11	375.00	124.84
National Hydrology Project	388.75	800.00	295.69
R&D and NWM	30.80	52.88	16.54
HRD/CB	2.61	00.00	00.00
Infrastructure Development	5.06	00.00	00.00
Atal Bhujal Yojana	327.48	700.00	504.57
Sub Total	**3,270.93**	**5,220.87**	**2,737.92**
Centrally Sponsored Schemes			
PMKSY-Har Khet Ko Paani	4,911.54	5,369.97	2,869.83
AIBP and CADWM	2,286.94	4,281.69	167.77
FMBAP	261.72	450.00	394.40
Irrigation Census	28.25	52.78	11.49
Servicing of loans from NABARD under PMKSY	3,736.00	4,585.00	2,794.06
Special Package for Marathwada, Vidarbha and other drought prone areas of Maharashtra	725.00	800	10.77

Scheme/ Office/ Component	Actuals 2021-22	BE 2022-23	Exp. upto 31.12.2022 (tentative)
National River Conversation Plan- Other Basins	203.16	250.68	229.02
Interlinking of river	4,642.03	1,400.00	399.77
Sub Total	**13,058.64**	**12,605.12**	**4,083.05**
Establishment			
Secretariat - Economic Services	212.56	146.00	89.86
Attached, Subordinate & Other offices			
Central Water Commission	367.72	410.80	317.61
Central Soil & Material Research Station	22.11	31.10	20.64
Central Water & Power Research Station	80.20	80.00	68.56
NDSA	0	0	0
Bansagar Control Board	0.33	0.50	0.12
Upper Yamuna River Board	4.78	2.00	2.21
Central Ground Water Board	260.92	282.00	228.14
National Institute of Hydrology	41.70	45.00	33.15
National Water Information Centre	2.50	3.50	2.17
National River Conservation Directorate	6.29	7.50	5.79
NERIWALM	5.09	11.00	8.85
Brahmaputra Board	0	50.00	31.11
NWDA	0	59.00	41.82
NWA	6.22	10.00	6.23
RGI	0	3.50	2.25
Sub Total	**1,010.42**	**1,141.90**	**850.24**
Total	**17,258.21**	**18,967.88**	**7,671.21**

ANNEXURE-XI

LIST OF PUBLIC/STAFF GRIEVANCE OFFICERS IN THE DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT& GANGA REJUVENATION AND ITS VARIOUS ORGANISATIONS ALONG WITH POSTAL ADDRESSES

Sl. No.	Name of the Organization	Address	Name & Designation of P.G./ S.G. Officer
1.	Department of Water Resources, River Development and Ganga Rejuvenation	Room No. 01, 'B' Wing, Shastri Bhavan, New Delhi-110001 (Tel No. 011-23074005)	Shri G.S. Panwar Deputy Secretary (Coord.)
2.	Narmada Control Authority	Narmada Sadan, Sector-B, Scheme No. 74, Vijay Nagar, Indore – 452010, Madhya Pradesh, (Tel No. 0731-2554477)	Shri D. Illanchezian, Secretary and Grievance Redressal Officer
3.	Bansagar Control Board	Bansagar Control Board, Samab Colony, Rewa, Madhya Pradesh, (Tel No. 07662-226318),	Shri M.W. Paunikar Secretary and Public Grievance Officer
4.	Betwa River Board	Betwa River Board, Nandanpura, Jhansi, Uttar Pradesh- 284003 (Tel No. 0510¬-2480279)	Shri Kautuk Jain Pay & Accounts Officer
5.	Central Ground Water Board	CGWB, CHQ, Faridabad, (Tel No. 0129-2477125 & (Fax No. 0129-2412524)	Dr. Ratikanta Nayak, Scientist E & Director (Admn) & Public Grievances officer
6.	Central Soil and Materials Research Station	CSMRS, Olof Palme Marg, Hauz Khas, New Delhi- 110 016 (Tel No. 26581370) FAX No.-26853108	Shri Hari Dev Scientist 'E' & Director (Grievances),
7.	Central Water Commission	Room No. 308, Sewa Bhawan, R.K. Puram, New Delhi-110066, (Tel No. 011 26187232) (Fax No. 26195516)	Praveen Kumar, Secretary (Staff Grievances Officer)
8.	Central Water &Power Research Station	Central Water &Power Research Station, P.O. Khadakwasla, Research Station, Pune - 411024 (Tel No. 020-24103402)	Dr. Jiweshwar Sinha, Scientist 'E', and Grievance Redressal Officer

Sl. No.	Name of the Organization	Address	Name & Designation of P.G./ S.G. Officer
9.	Farakka Barrage Project	P.O. Farakka Barrage, Distt. Murshidabad, West Bengal- 742212 (Tel No. 03485-253335)	Shri Sandeep Kumar, Superintending Engineer (Coord.) & Director (Staff Grievances)
10.	Ganga Flood Control Commission	Ganga Flood Control Commission, Sinchai Bhawan, IIIrd Floor, Patna-800015 (Tel No. 0612- 2215222) (Fax No. 0612- 2222294)	Shri Sanjeev Kumar Director Coord. & Director (Staff Grievances & Public Grievances)
11.	National Institute of Hydrology	Jal Vigyan Bhawan, Roorkee, Uttarakhand - 247667 (Tel No. 01332249216)	Shri Omkar Singh, Scientist- G, Public Grievance Officer
12.	National Projects Construction Corporation Limited	NPCC Ltd., Plot No. 148, Sector -44, Gurugram, Haryana-122003	Shri Arindam Guha, Senior Manager (Law) Grievances Redressal Officer
13.	National Water Development Agency	18-20, Community Centre, Saket, New Delhi-110017 (Tel No. 26852735)	Shri Baleshwar Thakur, Chief Engineer (HQ) & Grievance Officer
14.	Water & Power Consultancy Services (India) Ltd.	76, C, Sector-18, Gurugram, Haryana-122015, Tel No:- 0124-2344425	Dr. Aman Sharma, Director (Staff/Public Grievance)
15.	Brahmaputra Board	Brahmaputra Board Basistha, Guwahati - 781029 (Tel No. 0361-2300128)	Smt. Jalee Bezbaruah, Executive Engineer (HQ) - Brahmaputra Board - Public Grievances Officer
16.	Upper Yamuna River Board	Upper Yamuna River Board, Wing No. 4, Ground Floor, West Block No. 1, R.K. Puram, New Delhi-110066 (Tel 011-26174147)	Dr. Jakir Hussain, Specialist Environment
17.	Tungabhadra Board	Tungabhadra Board, Tungabhadra Dam, Taluk: Hospet, Distt: Bellary, Karnataka State, PIN: 583225 Tel. 08394-259113	Shri G Naga Mohan, Secretary & Director of Grievances
18.	National Mission for Clean Ganga	1st Floor, Major Dhyanchand National Stadium, New Delhi-110002.	Shri B.L Meena, Under Secretary, NMCG

Sl. No.	Name of the Organization	Address	Name & Designation of P.G./ S.G. Officer
19.	National Water Informatics Centre (NWIC)	4th Floor, Sewa Bhawan, New Delhi-110066	Shri Adhir Kumar Mallik, Under Secretary (Admn.)
20.	North Eastern Regional Institute of Water and Land Management	Tezpui Dolabari, P.O. Kalaibhomora Tezpur, Assam-784027,	Dr.Pradip Kumar Bora, Director, NERIWALM Public-Grievance OfficeT, NERIWALM
21.	Godavari River Management Board (GRMB)	Godavari River Management Board, 5th Floor, Jalasoundha, Errum Manzil, Hyderbad-500082	Shri R. Azhagesan, Member Secretary, GRMB

LIST OF CENTRAL PUBLIC INFORMATION OFFICERS / APPELLATE AUTHORITIES IN THE VARIOUS WINGS / SECTIONS OF THE DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

S. No.	Name & Designation of CPIO Appointed (S/Shri/ Smt/Kum)	Name of the Section/ Desk/work	Name & Designation of the Appellate Authority appointed (S/Shri/Smt/Kum)
1	Ashish Kumar Sao, Under Secretary (Admn/Gen. Admin/ Cash) Tel No.011-23714350 Email: usadmn-mowr@nic.in	Administration Section/General Admin Section/Cash Section & SC/ST/OBC Cell	S.B. Pandey, Deputy Secretary(Admn/Gen. Admin/ Cash) TelNo.011-23714734 Email: dsadmn-mowr@nic.in
2	Anil Kumar Sharma, US(E-I) Tel No.011-23716928 Email:use1-mowr@nic.in	E-I Section	Chandan Mukherjee, Deputy Secretary (E-I/E-III) Tel No.011-23711459 Email:chandan@nic.in
3		E-III Section	
4	B.H. Thangmawi Vaiphei, Under Secretary (IEC/ID& e-Gov) Tel No.011-23766944 Email:bht.vaiphei@nic.in	PSU/ IEC / e-Governance Cell & ID	Y.P. Yadav, Deputy Secretary (PUC/IEC, e-Gov & ID) Tel No.011-23711875 Email: yp.yadav48@gov.in
5	S. N. Pal, Under Secretary (Coord.) Tel No.011-23074033 Email:uscoord-mowr@nic.in	Coordination Section	G.S. Panwar, Deputy Secretary (Coord.), Tel No.011-23074005 Email:dircoord-mowr@nic.in
6	Avinash Chandra, Under Secretary (EA & IC & Parl.) Tel. No.011-23383078 Email:usea-mowr@nic.in	Parliament and EA&IC	Mukesh Kumar, Deputy Secretary (Parliament, EA & IC) Tel No.011-23382428 Email: dsea-mowr@nic.in

S. No.	Name & Designation of CPIO Appointed (S/Shri/ Smt/Kum)	Name of the Section/ Desk/work	Name & Designation of the Appellate Authority appointed (S/Shri/Smt/Kum)
7	Sanjeev Tiwari, SO (E-IV) TelNo.011-23718620 Email: soe4-mowr@gov.in	E-IV	Subrata K. Basu, Deputy Secretary, (E-IV & PSU) TelNo.011-23714374 Email :basu-sk@nic.in
8	Arvind Joseph Soreng, Under Secretary(PP) Tel:011-23714350 Email:uspp-mowr@nic.in	PP (Policy)	Om Prakash Gupta, Senior Joint Commissioner (PP),Tel:011-23719503 Email:sjcpp-mowr@nic.in
9	Shalini Gupta, Under Secretary(GWE) Tel.No.011-23766907 Email:usgw-mowr@nic.in	GWE	Ashok Kumar, Director (GWE), TelNo.011-23711988 Email:ashok.kum@nic.in
10	Jitendra Kumar, Under Secretary (Budget/ Fin-I) Tel No.011-23719627 Email:jitendra.kr80@nic.in	Budget	A.K. Sahoo, Deputy Secretary (Fin-I)Tel No.011-23711486 Email:ak.sahoo38@nic.in
11	Ratnakar Yadav, Under Secretary (IFD/Fin-II) TelNo.011-23719302 Email:yp.yadav48@gov.in	IFD	A.K. Sahoo, Deputy Secretary (Fin-I)Tel No.011-23711360 Email:dirfin-mowr@nic.in
12	Prashant Malik Under Secretary (E-II & Vig.) Tel No.011-23350131 Emai:use2-mowr@nic.in	E-II	Vijay Kumar Srivastava, Deputy Secretary (E-II) Tel No.011-23711988 Email: vijayk.srivastava25@nic.in
13		Vigilance	Ashish Kumar, Director(GW &Vigilance) TelNo.011-23716747 Email:ashish.kumar74@gov.in
14	Rajendra Kumar Sahoo, Under Secretary (GW) Tel No.011-23716928 Email:usgw2-mowr@nic.in	Ground Water	Ashish Kumar, Director (GW & Vigilance) Tel.No.011-23716747 Email:ashish.kumar74@gov.in
15	Anil Kumar, Assistant Director(OL) Tel No.011-23714374 Email:hindi-mowr@nic.in	Official Language Section	Vijay Singh Meena, Director(OL) Tel No.011-23714374 Email:vs.meena25@nic.in

S. No.	Name & Designation of CPIO Appointed (S/Shri/ Smt/Kum)	Name of the Section/ Desk/work	Name & Designation of the Appellate Authority appointed (S/Shri/Smt/Kum)
16	Kaushal Kumar, Deputy Commissioner (B&B) Tel No. 011-24367116 Email : kaushalkmr-cwc@nic.in	Matters of Brahmaputra & Barak Wing	Ajay Kumar Gupta, Senior Joint Commissioner (B&B)Tel No.011-24367128 Email: dcbb-mowr@gov.in
17	Shambhu Nath Gupta, Under Secretary (NHP) Tel.No.011-21420161 Email: snath.gupta@gov.in	National Hydrology Project	Rakesh Kashyap, Senior Joint Commissioner (NHP) Tel No.011-24367081 Email: sjc1nhp-mowr@nic.in
18	Rajesh Sharma, Under Secretary (FM) Tel No.011-24362517 Email: rajeshsharma-cwc@gov.in	Flood Management Wing	Rajeev Singhal, Sr. Joint Commissioner (FM) Tel No.011-24392095 Email: sjcfm4-mowr@nic.in
19	Bamane Mohan Jinnappa, Deputy Director(PP-Planning Unit) Tel No. 011-24366683 Email: bamane.m@gov.in	Planning Unit	Ch. David, Director (PP- Planning Unit) Tel No.011-24366683 Email: david.ch63@gov.in
20	B.B. Saikia, Sr. Joint Commissioner (CADWM)Tel.No.011-23383090 Email:cadwm-mowr@nic.in	CAD related matters	Anuj Kanwal, Commissioner (CAD) Tel.No.23382256 Email: commcadwm-mowr@nic.in
21	Kumar Vaibhav, Deputy Commissioner (Basin Management) Tel No.011-24368344 Email:dcbm-mowr@nic.in	River Basin Management, Administration of UP, Bihar, MP Reorganisation Act, Inter State Water Disputes Act, Inter State Water Disputes Tribunal, technical matters of NWDA and Inter-Linking of Rivers	Rakesh Kumar, Sr. Joint Commissioner (Basin Management) Tel No.011-24367109 Email:sjcbm-mowr@nic.in
22	Veeresh, Deputy Commissioner (SPR-I) Tel No.011-23385186 Email: veeresh-cwc@gov.in	SPR-I	Deepak Bhatt, Sr. Joint Commissioner (SPR-I), Tel No.011-23385186 Email: deepakbhatt-cwc@nic.in

S. No.	Name & Designation of CPIO Appointed (S/Shri/ Smt/Kum)	Name of the Section/ Desk/work	Name & Designation of the Appellate Authority appointed (S/Shri/Smt/Kum)
23	Abhiram Kumar, Under Secretary (Pen. River) Tel No.011-23383261 Email : sopenriv-mowr@nic.in	Peninsular River Wing	S. S. Bonal, Sr. Joint Commissioner (PR-I) Email: ssbonal-cwc@nic.in
24	Ashish Dubey, Assistant Commissioner (Minor Irrigation) Tel No.011-23387834 Email: ashishdubey-cwc@gov.in	Minor Irrigation	S.L. Meena, Sr. Joint Commissioner (MI) Tel.No.011-23387834 Email:sjcmi-mowr@nic.in
25	Shreyas Gune, Deputy Commissioner (SPR-II), Tel No.011-23711370 Email: dcspr-mowr@gov.in	SPR-II	Amit Kumar Jha, Senior Joint Commissioner (SPR-II) Tel No.011-23710131 Email:sjcpr-mowr@nic.in
26	Sumit Gupta, Deputy Commissioner (Indus) Tel No.011-24360332 Email:dcindus-mowr@nic.in	Indus Wing	Naveen Kumar, Sr. Joint Commissioner (Indus) Tel No.011-24362539 Email:sjcindus1-mowr@nic.in
27	Anshika Bhatnagar, SEO(MI Stat) Tel No.011-24656135 Email:bhatnagar.anshika@gov.in	Minor Irrigation Statistics	Smt. Soumya P Kumar Director (MI- Stats) Tel No.011-24564503 Email: soumya.kumar@gov.in
28	Vinod Kumar, Under Secretary (National Water Mission) Tel No.011-24368985 Email: usnwm-mowr@gov.in	National Water Mission	J.P. Singh, Director (National Water Mission) Tel No.011-24368984 Email: jp.singh22@nic.in
29	B.L. Meena, Under Secretary, NMCG Tel No.011-23049506 Email: bl.meena15@nic.in	Namami Gange	Binod Kumar, Director, National Mission for Clean Ganga Tel No.011-23049417 Email :binodkumar.ofb@nic.in
30	Pramod Kumar Patra, Under Secretary (National River Conservation Directorate) TelNo.24361057 Email:-pramod.patra1983@gov.in	National River Conservation Directorate (NRCD)	Arvind Prasad Singh, Deputy Secretary (NRCD) Tel No. 011-24369380 Email:arvindp.singh@nic.in

S. No.	Name & Designation of CPIO Appointed (S/Shri/ Smt/Kum)	Name of the Section/ Desk/work	Name & Designation of the Appellate Authority appointed (S/Shri/Smt/Kum)
31	Aman Bishnoi, Section Officer (Atal Jal), Tel No. 011-24320297 Email : atal-jal@gov.in	Atal Jal	Vivek Chaudhary, Deputy Secretary (Atal Jal) Tel No. 011- 23711875 Email : ds1-dowr@gov.in

Note: In case work of any CPIO/ Appellate Authority is changed due to transfer/ retirement/ any other reasons and a new official joins in place of the existing CPIO/ Appellate Authority, he/ she would automatically be the CPIO/ Appellate Authority of the allotted work. In case any CPIO/Appellate Authority proceeds on leave/training, the concerned Link Officer or the officer who is entrusted with the charge of the post of the concerned Division/Branch Head would automatically be the CPIO/Appellate Authority of the allotted work.

LIST OF OTHER IMPORTANT PUBLICATIONS OF DoWR, RD & GR AND ITS ORGANISATIONS DURING 2022-23

Sl. No.	Publication	Published by	Website
1.	Compilation of Status of Ongoing Major and Medium Project -2022	CWC	https://cwc.gov.in/
2.	Water Resources at a Glance - 2021	CWC	https://cwc.gov.in/
3.	Pricing of Water in Public System in India -2022	CWC	https://cwc.gov.in/
4.	Jal Charcha (Monthly)	DoWR, RD & GR	http://jalshakti-dowr.gov.in/
5.	Jalansh (Monthly)	CWC	https://cwc.gov.in/
6.	Bhujal Samwad (Quarterly)	CGWB	https://cgwb.gov.in/

सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES,
RIVER DEVELOPMENT AND GANGA REJUVENATION
NEW DELHI