



Shri Kushvinder Vohra
Chairman, CWC

Message

During the month of February 2023, many important developments took place in water resources sector, out of which I am highlighting the following:

- i) MoA with IIT Roorkee for development of ICED
- ii) Workshop on flood aspects among Member State of Shanghai Cooperation Organisation
- iii) Meeting of International Technical Advisory Committee (ITAC) for organizing 25th International Congress and 74th IEC meeting of ICID at Visakhapatnam.

Central Water Commission entered into a Memorandum of Agreement with IIT, Roorkee for Development of International Centre of Excellence for Dams (ICED) on under externally funded Dam Rehabilitation and Improvement Project Phase II and Phase III. This MoA will remain valid for ten years or till the duration of the DRIP Phase-II and Phase-III Scheme, whichever is earlier, from the

date of signing. ICED will act as a technological arm of the Central Water Commission (CWC), DoWR, RD &GR, MoJS to provide specialized technical support in investigations, modelling, research and innovations, and technical support services to the Indian and overseas dam owners. The Centre, in the initial years, will focus on the two key areas: (a) Reservoir Sedimentation and (b) Seismic Hazard Mapping and Analysis. A structured workshop on Flood among Member States of Shanghai Cooperation Organisation (SCO), a permanent intergovernmental international organization comprising China, India, Russia, Pakistan, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan, partner nations was organized at National Disaster Management Authority (NDMA) Centre. Myself and Shri Kunal Satyarthi, JS, NDMA led the Indian delegation. The main goals of the SCO are to strengthen mutual confidence and good-neighborly relations among the member countries; promoting effective cooperation in politics, trade and economy, science and technology, culture as well as education, energy, transportation, tourism, environmental protection and other fields. India is holding the chairmanship of the Shanghai Cooperation Organisation (SCO) for 2022-23. We exchanged our best practices in this regard. This session unfolded various learnings.

The Indian National Committee on

Irrigation and Drainage (INCID) headed by Chairman, CWC is organizing the 25th International Congress and 74th IEC meeting of ICID at Visakhapatnam (Vizag), Andhra Pradesh during 01-8 November 2023 on the theme "Tackling Water Scarcity in Agriculture" in partnership with the State Govt. of Andhra Pradesh, CWC and ICID. ICID has constituted an International Technical Advisory Committee (ITAC) for the 25th ICID Congress to oversee the thematic, technical and organizational aspects of the Congress. The first meeting of the ITAC was held in virtual mode on 07.02.2023. In the capacity of Chairman, INCID and Vice President, ICID, myself supported participants of young professionals to participate in the event and informed that INCID can consider supporting few Young Professionals. CWC is actively involved in organizing this International conference. I believe that the conference shall provide great opportunity for CWC to showcase its capabilities before International forum and at the same time learn many things which shall help in building its capacity further. Many new initiatives are being taken by CWC, the result of which I shall be sharing with you in subsequent editions of Jalansh.

Shri Kushvinder Vohra

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Meeting Regarding Issue of Less Availability of Water from Nohar Feeder and Baruwali Distributaries to Rajasthan

Shri Kushvinder Vohra, Chairman, CWC & Ex-officio Secretary, Govt. of India held a meeting on 02.02.2023 through video conference/virtual mode with the Water Resources/Irrigation Department authorities of the States of Rajasthan & Haryana and BBMB regarding the issue of less availability of water from Nohar Feeder and Baruwali Distributaries to Rajasthan.

The meeting was attended by the officers from CWC, Govt. of Haryana, Govt. of Rajasthan and BBMB.

Based on the deliberations held during the meeting, following decisions were taken:

- At present both Nohar Feeder and Baruwali Distributaries are in dilapidated state hence they cannot carry discharge to their design capacity. Therefore, necessary repair work is needed for these canals.
- 5 kms stretch of Fatehabad Tail End canal where design section is not available, require modification/repair. Govt. of both States gives its consent for the same.



- Both Haryana and Rajasthan Govt. agreed to carry out the general repair and de-silting exercise of Fatehabad Tail End canal during the month of March, 2023.
- Capacity of Nohar canal is to be increased by taking structural measures. CWC will work out all possible options for the same.

Chairman, CWC requested to the State Govt. of Haryana & Rajasthan and the BBMB to supply the necessary field data to CWC for taking up further study.

Progress and Issues in Respect of Implementation of WARIMS portal

Shri Kushvinder Vohra, Chairman, CWC held a meeting with all the Chief Engineers of CWC (Headquarter) on 03.02.2023 to discuss the "progress and issues in respect of implementation of WARIMS portal". During the meeting, Chairman, CWC conveyed the vision behind the development of WARIMS portal and highlighted the role of CWC officers in implementing the same. He further discussed about various bottlenecks and coordination related issues between CWC and NWIC. Chairman directed all Chief Engineers of



CWC(HQ) to provide guidance in the process.

Meetings to review various projects/issues related to State of Rajasthan

A number of meetings were held in month of February to review various projects/ issues related to State of Rajasthan. The meetings were chaired by Shri Sriram Vedire, Advisor to Minister for Jal Shakti, Secretary (DoWR, RD&GR) and Hon'ble Minister of Jal Shakti on 3rd, 8th and 9th February 2023 respectively. The meetings were attended by officials from DoWR, RD&GR, CWC, NWDA and WAPCOS.

During the meeting, Eastern Rajasthan Canal Project, Nohar Feeder Canal/Harike project, Jawai Dam project, Gang Canal Modernization project and issues related to inter-linking of rivers projects in Rajasthan along with Inter-State water agreement on sharing of Mahi River Water, were discussed. As per directions of Ministry, brief status note on above projects/issues were submitted by CWC.

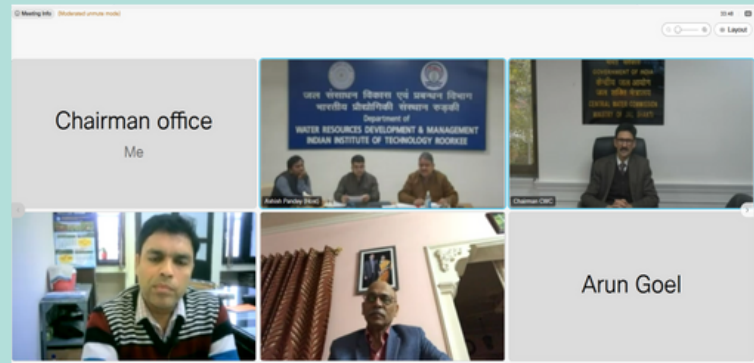
Meeting with Asian Development Bank (ADB) officials

Member (RM) chaired a meeting with Asian Development Bank (ADB) officials on 03.02.2023 wherein it was informed that ADB will be providing technical assistance for stabilization studies of River Ganga Basin. In this connection Ganga Flood Control Commission (GFCC) has prepared a brief technical

document indicating area of interest, likely deliverables, key stakeholders and possible area of collaboration for this exercise, this technical document sent to ADB for their views vide e-mail dated 14.02.2023 and formulating approach paper for the discussed subject.

Executive Committee (EC) Meeting of the Indian Water Resources Society (IWRS)

An Executive Committee (EC) Meeting of the Indian Water Resources Society (IWRS) was held on 06.02.2023, in the online mode under chairmanship of Shri Kushvinder Vohra, President, IWRS, and Chairman, Central Water Commission. President, IWRS Shri Kushvinder Vohra gave a welcome address and outlined the vision of IWRS. It was followed by a formal address by Prof. Ashish Pandey, Executive Vice-President (HQ), IWRS, and Professor & Head, Department of WRD&M, IIT Roorkee. During the meeting, a comprehensive discussion related to the working of the society, possible changes in the organizational structure of the committee, near-future plans for the organization of events/workshops, and amendments in the IWRS



journal were held and number of proposal were approved by President, IWRS for placing before AGM so that restructuring of IWRS may be implemented urgently.

Virtual meeting of International Technical Advisory Committee (ITAC) for 25th ICID Congress through VC

The Indian National Committee on Irrigation and Drainage (INCID) is India's representative National Committee in the International Commission on Irrigation and Drainage (ICID). INCID is headed by Chairman, CWC. INCID is organizing the 25th International Congress and 74th IEC meeting of ICID at Visakhapatnam (Vizag), Andhra Pradesh during 01st-8th November 2023 in partnership with the State Govt. of Andhra Pradesh, CWC and ICID. The ICID International Congress aims to discuss and evaluate the upcoming and dynamic changes within the water sector in the entire world while focusing on developing solutions for the concurrent challenges in this sector. Thematic areas or Questions are identified from the emerging global trends, on which papers are presented, a Special Session, Symposium, and History Seminar is organized and showcased on the global platform. The theme for the 25th ICID Congress is "Tackling Water Scarcity in Agriculture".

ICID has constituted an International Technical Advisory Committee (ITAC) for the 25th ICID Congress to oversee the thematic, technical and organizational aspects of the Congress. Five representatives from the host National Committee are included as members in the ITAC while the Secretary General (ICID) is the Member Secretary. The 5 INCID representatives in the ITAC include Chairman, CWC, Chief Engineer (EMO), Chief Engineer (POMIO), CWC among other. The first meeting of the ITAC was held in virtual mode on 07.02.2023.



During the meeting, the Committee noted that the Themes, Questions and Sub-questions for the Congress have already been finalized by INCID and ICID, along with the detailed scope. The Committee also noted that the first announcement of 25th Congress was distributed by INCID during the Adelaide meetings in October 2022. INCID was requested to publish the Second Announcement for 25th ICID Congress in the month of March, 2023. ITAC also noted that the 'Call for Papers' of 25th ICID Congress has been circulated among the various stakeholders, through ICID's Contributions Management Portal (CMP). During the meeting, ICID requested the international organizations and INCID to consider sponsoring few young professionals to the training programme that will be of great help to support the YPs to join the YP training programme. Shri Kushvinder Vohra, Chairman CWC/ INCID and Vice President ICID supported encouraging young professionals to participate in the event and informed that INCID can consider supporting few YPs.

Meetings

Meeting to evaluate the application for CBIP Awards-2022

Shri Kushvinder Vohra, Chairman, CWC held discussions with the officials from Central Board of Irrigation & Power (CBIP) on 09.02.2023 as Head of the Jury to evaluate the applications received under various categories for CBIP Awards-2022 in Water Resources sector. Shri A.K. Bajaj, former Chairman (CWC), also a Jury Member was also present during the discussions. CBIP since past has been presenting a number of awards to recognize outstanding contributions of Organizations/ Institutions and individuals for the development of Water Resources, Power & Renewable Energy Sectors in the Country. CBIP Awards for the year 2022 are scheduled to be conferred on the



upcoming CBIP Day viz. 03.03.2023. Shri Kushvinder Vohra, Chairman, CWC is also Vice President in CBIP.

The 77th Meeting of Executive Committee of Bansagar Control Board

Bansagar Control Board was set up in 1976 in consultation with the Government of M.P., Bihar and U.P. with the view to ensure efficient, economical and early execution of Bansagar Dam including all connected works in Madhya Pradesh, but excluding the canal systems. The Control Board is in overall charge of project including its technical and financial aspects. Chairman, CWC is Chairperson of Executive Committee of Bansagar Control Board (BCB).

Shri Kushvinder Vohra, Chairman, CWC and Ex Officio Secretary to the Government of India and Chairman Executive Committee of Bansagar Control Board (BCB) presided over the 77th meeting of Executive Committee of BCB on 13.02.2023. Member (WP&P), CWC, Chief Engineer (POMIO), Director (CB&P&M) and Officials of beneficiary states i.e. M.P., Bihar and U.P. attended the meeting.



During the meeting, agenda items related to Guidelines for Regulation of filling and use of Bansagar Reservoir, filling up of posts in BCB, Watershed Management plan for treatment of catchment area of Bansagar Project, status of contribution of funds by beneficiary states and release of share of water were discussed.

Signing of MoA with IIT Roorkee for Development of International Centre of Excellence for Dams (ICED)

The Central Water Commission (CWC), entered into a Memorandum of Agreement (MoA) on 14.02.2023 for Development of International Centre of Excellence for Dams (ICED) under externally funded Dam Rehabilitation and Improvement Project (DRIP) Phase II and Phase III. This MoA will remain valid for ten years or till the duration of the DRIP Phase-II and Phase-III Scheme, whichever is earlier, from the date of signing. The establishment of ICED was one of the major goals of DoWR, RD & GR for financial year 2022-23.

ICED will act as a technological arm of the Central Water Commission (CWC), DoWR, RD & GR, MoJS to provide specialized technical support in investigations, modelling, research and innovations, and technical support services to the Indian and overseas dam



owners. The Centre will work for agreed dam safety areas to support and provide solutions to various emerging challenges faced in dam safety through scientific research and latest technological innovations. It will also carry out applied research, education, and technology transfer in dam safety management at local, regional, national, and international levels. The Centre will presently start with the focus on the two

key areas: (a) Reservoir Sedimentation and (b) Seismic Hazard Mapping and Analysis in the initial years. The new areas shall be added as per the need arises from implementation of the Dam Safety Act in the near future. In the long run, the Centre shall aim to deal with the complete life cycle of the dams.

The ICED is being set up at a cost of Rs. 109 Crore, being borne by the Department of Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti, Government of India as non-recurring grant in six tranches towards procurement of goods, machineries for establishment of new laboratories as well as strengthening of existing laboratories, initiation

of research activities, construction/ modernization of infrastructure for setting up of ICED by IIT Roorkee.

IITR will endeavour to reach a level of self-sufficiency within ten (10) years by generating income streams through the knowledge and capabilities developed on dam safety & rehabilitation in general, and in the core areas of reservoir sedimentation and seismic hazard mapping and analysis in particular. In addition, ICED Roorkee will have Centre Development Fund, accrual to which will come from sources like, a part of the consultancy charges, short term training programmes and any other revenue earning activity will be contributed to this fund.

Meeting for Stakeholders Consultation Regarding Policy for the Lease Charges for the Installation of Floating Solar Power Project in the Water Bodies

Shri Kushvinder Vohra, Chairman CWC took a meeting for stakeholders consultation regarding policy for the lease charges for the installation of Floating Solar Power Project in the water bodies on 14.02.2023 through VC mode. Officers from various state governments and various dam owning CPSUs attended the meeting. The meeting was also attended by Member (Hydro), CEA along with other senior officers from CEA, Ministry of Power, Ministry of New & Renewable Energy, State Water Resources & Energy Departments of 22 States and 9 CPSUs.

Views of all representatives of state government and other dam owning entities in this regard were discussed in detail. It was noted that most of the CPSUs have proposed nominal fixed lease charge while state governments proposed it as a percentage of the



Capital cost of the project or annual lease charge based on the power generation. Concluding the discussions Chairman, CWC requested all stakeholders to communicate their views through email within a week duly indicating rationales behind their proposals. Thereafter, a view could be taken in this regard for policy formation.

First meeting of the Committee on the issue of reallocation of shares of erstwhile UP in Yamuna water up to Okhla

First meeting of the "Committee on the issue of reallocation of shares of erstwhile UP in Yamuna water up to Okhla as per MoU of 1994 between Uttar Pradesh and Uttarakhand" was held under the chairmanship of Shri Kushvinder Vohra, Chairman CWC on 15.02.2023 at Sewa Bhawan, New Delhi. Member (WP&P), CWC, Commissioner (FM), DoWR, Chief Engineer (IMO) and (HSO), CWC and officers from Uttarakhand and UP participated in the meeting. It was impressed upon both the States that the officers as per orders of constitution need to be nominated by respective States. The name and designation for the Members of the Committee should be sent by both the states to Member Secretary (MS) UYRB within five days. Both the States were directed to submit the utilization data from their respective hydraulic



structures on monthly basis and population figures of census 2011 of the districts falling in Yamuna Basin in these two States to the MS, UYRB within next 15 days. Next meeting of the committee is proposed to be held after the data in complete shape are submitted by both the States.

Meetings

Discuss the progress of PFR 2nd Ravi Beas Link Project

A meeting under the Chairmanship of Shri Kushvinder Vohra, Chairman, CWC and Ex-Officio Secretary to Govt. of India was held on 20.02.2023 to discuss the progress of Pre-Feasibility Report (PFR) of Second Ravi Beas Link Project (National Project) on various options discussed during the last visit of Member (WP&P), CWC in December, 2022.

The meeting was attended by officers of WRD, Govt. of Punjab (GoP), Central Water Commission and other concerned organizations. During the meeting, discussions were held on the Report submitted by WRD, GoP having various options along with the issue of Road Bridge being constructed by PWD Department.



During the meeting, Chairman, CWC directed Officials from WRD, GoP to modify the draft report submitted by GoP and accordingly prepare a draft PFR with 5 different options as discussed in detail in meeting. Further, CE (IBO), CWC was directed to monitor the progress.

25th Meeting to review the Design aspects of Polavaram Irrigation Project

On 22.02.2023, Shri S.K. Sibal, Member (D&R), CWC chaired a meeting on design issues of Irrigation Project, Andhra Pradesh. The meeting was attended by officers from Design (NW&S) Unit, Central Water Commission, Polavaram Project Authority (PPA) and officers from NHPC Ltd.

PPA provided a brief on the progress of works at site. Further, to expedite the completion of the project deliberations were held on issues of methodology of sand filling in scoured foundation, geophysical studies for health assessment of the Gap-II Diaphragm wall, seepage from U/s Cofferdam and dewatering arrangements and layout of the approach channel.

21st meeting of WRD-09



21st meeting of WRD-09 was held on 23.02.2023 under the chairmanship of Chief Engineer, Designs (E&NE). Officers from CMDD (E&NE), CMDD (N&W), CMDD (NW&S), Embankment (E&NE) also participated in the meeting. Agenda item related to Aeration demand for spillways and outlet structures, Design and Construction of Concrete Faced Rock fill dam etc. were discussed.

56th meeting of CDRC

Date of Meeting	09.02.2023
Total cases Considered	20
Commercial cases	04
Non-Commercial cases	16
No. of Cases Recommended by the - Committee	12
No. of Cases Deferred	07
Note: 1 case was referred to MEA seeking concurrence on the matter.	

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“The earth, the air, the land, and the water are not an inheritance from our forefathers but on loan from our children. So, we have to handover to them at least as it was handed over to us.”

– Mahatma Gandhi

DRIP-2 Implementation Strategy Workshop by World Bank

A two (2) day workshop was conducted by World Bank during 8-9th February 2023, wherein strategy for flexi fund re-allocation within IAs (based on agreed criteria) as and when new agencies join the project was deliberated. The progress of PSTs, Tenders and expenditure were also reviewed during the workshop. The officials from CPMU and DRIP Implementing Agencies attended the workshop.



Structured Workshop on knowledge sharing on Floods for SCO Member States

The National Disaster Management Authority (NDMA) organized a Structured Workshops on Flood on 24.02.2023 to share best practices and learning among Shanghai Cooperation Organisation (SCO) partner nations through international cooperation. At the workshop on Flood, India presented its best practices in the area of flood management, with special focus on legal and Institutional arrangements, assessment, monitoring, capacity building and effective forecasting mechanism for flood management. Shri Rajendra Singh, Member, NDMA inaugurated the workshop, Shri Kushvinder Vohra, Chairman, Centre Water Commission and Shri Kunal Satyarthi, JS, NDMA lead the Indian delegation.

The SCO is a permanent inter-governmental international organization comprising eight members- China, India, Russia, Pakistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan strengthening regional security including emergency management. SCO member countries house about 40% of world's population and contribute 30% of World's GDP. India is holding the chairmanship of the Shanghai Cooperation Organisation (SCO) for 2022-23. The SCO was established in 2001 and India began its association with it as an observer state in 2005 before becoming a member state in 2017. The main goals of the SCO are strengthening mutual confidence and good- neighborly relations among the member countries; promoting effective cooperation in politics, trade and economy, science and technology, culture as well as education, energy, transportation, tourism, environmental protection and other fields.



Hydro-climatic threats to this region manifest through floods, droughts, mudslides, groundwater depletion, glacial outbursts, and permafrost thaw, which are intensifying due to climate change. Erratic heavy rainfall has increased during the summer months and snowfall has decreased in winters. It is estimated that by 2050, 2.5 million people in Central Asia will migrate due to water scarcity. This calls for collaboration between countries facing similar climatological conditions to solve regional challenges.

The workshop focused on following three themes:-

- Legal and Institutional arrangement for management of flood,
- Capacity building and stakeholder participation in flood management,
- Role of forecasting for flood management.

The workshop facilitated SCO Member States to get a better understanding of the strengths and challenges of the member states in mitigating flood disasters, as well as the application of technologies to avoid, mitigate, and adapt for floods in the region. Better and early, accurate forecasting and scientific land use planning turned out to be one of the potential solutions towards flood management.

Training on Dam Health and Rehabilitation Monitoring Application (DHARMA)

As part of capacity building under DRIP-2, CPMU is organizing regular training program on DHARMA in virtual mode. The third training on DHARMA portal was

conducted on 28.02.2023 for DRIP-II implementing agencies. The officials from SDSO and dam managers from various States participated in the training.

Inauguration of the use of SANDES app/portal

Shri Kushvinder Vohra, Chairman, CWC inaugurated the use of SANDES app/portal on 20th February 2023 in CWC. The Officers of Central Water Commission participated in the event physically/virtually. He mentioned that all CWC employees may gradually shift from other app to Sandes app as it is an Open source driven, Secure, Cloud enabled and Indigenous platform for instant messaging within Government departments and people associated with the Government. He also



informed that this App may be used for official group immediately.

Visit/Inspection of Projects/Sites by CWC Officials

Model study of Maneri Bhali Project at IRI, Bahadradab, Uttarakhand

A visit to witness hydraulic model studies of Energy Dissipation Arrangement of Maneri Dam being carried out at UP Irrigation research Institute, Bahadradab, Roorkee was undertaken by a team led by Shri Vijay Saran, Chief Engineer, DSO & Project Director, DRIP-II & III, CWC with Shri S.S. Bakshi, Director, CWC and Shri Samir Kumar Shukla, Director, CWC on 25.02.2023.

From UJVNL, Shri Suresh Chandra Baluni, Director Project, Shri Sunil Kumar Joshi, General Manager, Shri S.K. Singh, Dy. General Manager along with other officials and from IRI, Bhadrabad Shri R.C. Gupta, Superintending Engineer, Shri R.P. Kuriyal, Executive Engineer, etc were present. The objective of the visit



was to witness the model behavior and flow conditions for various discharges and assess the feasible options for Construction of Energy dissipation arrangements & appurtenant work at downstream of Maneri dam.

Punatsangchhu-I and Punatsangchhu-II HEP

CWC Officers from Designs (E&NE) Visited Punatsangchhu-I and Punatsangchhu-II HEP from 08.02.2023 to 11.02.2023. Multiple issues related to Dam & Powerhouse of Punatsangchhu-II & Powerhouse of Punatsangchhu-I was addressed. Officers also attended Technical Group Meeting of Punatsangchhu-II held at PHPA-II office on 09.02.2023.



Monitoring visit of Tarali, a Major Irrigation Project

Tarali, a Major Irrigation Project was included in year 2007-08 in Accelerated Irrigation Benefits Programme (now, subsumed under PMKSY) to provide Central Assistance to supplement State resources in order to facilitate early complete the project. It is aimed to provide irrigation in Karad, Patan, Satara, Khatav & Man Taluka of Satara district of Maharashtra State.

The Project was included in AIBP in 2007-08 for works cost of Rs. 363.27 Cr and 19498 ha (14276 ha ICA) of ultimate irrigation potential (UIP). CWC accorded "Fast Track Proforma Clearance" to Revised Cost Estimate of



Rs. 943.26 Cr for AIBP. The Project was included in

Command Area Development & water Management (CADWM) under Pradhanmantri Krishi Sinchai Yojana (PMKSY) in 2017-18 for Rs. 53.63 Cr.

The project has, so far, created Irrigation Potential of 17165 ha UIP & 6988 ha ICA and incurring expenditure of Rs. 890.83 Cr & Rs. 34.26 Cr. under PMKSY-AIBP & CADWM respectively. The project has also received

central assistance of Rs. 321.20 Cr & Rs. 4.25 Cr. under AIBP & CADWM respectively.

The project is being monitored by Monitoring & Appraisal Directorate, Pune under the Regional Office of CWC, Nagpur. Shri Asheesh Kumar Singhal, Deputy Director visited the project on 01.02.2023 to review the physical and financial progress of the project.

OTHER ACTIVITIES

Financial Progress of Schemes as on 28.02.2023

(Amount rounded-off in ₹ Crore & Specific to CWC's component)

Sl. No.	Scheme/Component Name	RE (2022-23)	Expenditure	Expenditure (in %)
1	Development of Water Resources information System (DWRIS)	140.130	135.6291	96.40%
2	Investigation of Water Resources Development Schemes (IWRD)	11.640	11.0448	94.89%
3	Flood Management & Border Areas Programme (FMBAP)	11.3625	8.4330	74.22%
4	Direction & Administration (D&A)-Major Works and OE (SAP)	8.56	7.867	91.90%
5	National Hydrology Project (NHP)	31.7086	12.6829	39.825%
6	Dam Rehabilitation and Improvement Project (DRIP) Phase-II	25.00	23	92.00%

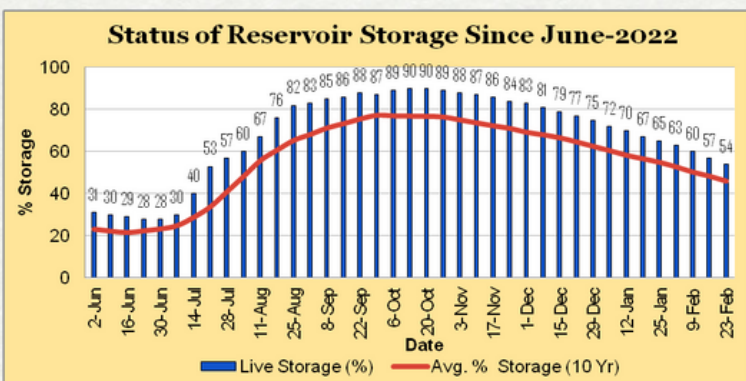
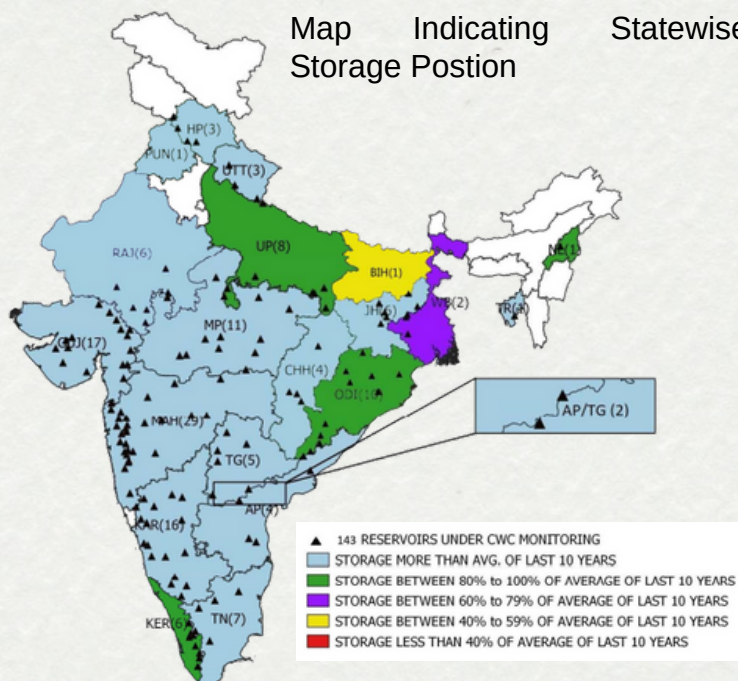
Reservoir Monitoring

CWC is monitoring live storage status of 143 reservoirs of the country on weekly basis and is issuing weekly bulletin on every Thursday. Out of these reservoirs, 18 reservoirs are of hydro-electric projects having total live storage capacity of 34.960 BCM. The total live storage capacity of these 143 reservoirs is 177.464 BCM which is about 68.83% of the live storage capacity of 257.812 BCM which is estimated to have been created in the country.

As per reservoir storage bulletin dated 23.02.2023, the total live storage available in these reservoirs is 96.592 BCM which is 54% of total live storage capacity of these reservoirs. However, last year the total live storage available in these reservoirs for the corresponding

period was 102.517 BCM and the average of last 10 years live storage was 81.642 BCM. Thus, the live storage available in 143 reservoirs as per the bulletin dated 23.02.2023 is 94% of the live storage of corresponding period of last year and 118% of storage of average of last ten years.

Map Indicating Statewise Storage Postion



Gallery/Azadi Ka Amrut Mahotsav



"Alluring Rajasthan" Exhibition in Udaipur, Rajasthan presently in progress from 23.02.2023 to 25.02.2023. CWC won award for best Stall in Water Resource and Conservation category presented by Shri Arjun Lal Meena, Member of Parliament, Udaipur.



Nadi Utsav, organized in Mayurbhanj, Odisha by M&ERO, CWC during 14.02.2023 to 09.04.2023 at different rivers.



Monitoring visit of Saryu Nagar Pariyojana Ph -III for FY 2022-23 was held on 02 & 03.02.2023 was done by Shri Nikhil Jeph DD, CWC New Delhi, Shri Ramendra Vikram Singh, AD, CWC along with the officers of I&WRD, U.P.



A meeting was held under the Chairmanship of Sh Virendra Sharma, Chief Engineer, Monitoring (South), CWC, Bengaluru with officials of Karnataka State Water Resources Department/Command Area Development for the projects under Monitoring of PMKSY-CADWM to review the progress.



Delivered lecture on 'Water Quality and Sediment Analysis' to the trainees of Royal Government of Bhutan' at NERIWALM, Tejpur, Assam during 6-7, February, 2023 by Shri Ajay Kumar, ARO, Bhagirathi Damodar Water Quality Laboratory, Beldanga under T&BDBO, CWC, Kolkata



A team was constituted with officers from CWC, CSRO & Puduchery-PWD for "Preparation of DPR for Sustainable Water Management in UT of Puduchery" as per matter raised by Hon'ble M.P. Puduchery, Mr. Ve Vaithilingam in Lok Sabha.

Water Sector-News

- Assessing the case for amending India-Pak Indus Water Treaty (The Indian Express, 01.02.2023)
- 7.81 cr. Rural houses given tap water in last 3 years under JJM (Millennium Post, 03.02.2023)
- Centre: Namami Gange's main aim to make river's water fit for outdoor bathing, not drinking (Millennium Post, 07.02.2023)
- '3 million people in India at risk of flooding by glacial lakes, total 15 million worldwide' (Millennium Post, 09.02.2023)
- SC declines Goa's plea for stay on move to divert Mahadayi Water (Hindustan Times, 14.02.2023)
- Sea level rose by 4.5 mm per yr during 2013-22 period: WMO (Millennium Post, 15.02.2023)
- Water quality improves, 4 Bengal rivers go out of central board's pollution list (The Times of India, 20.02.2023)
- Jal Jeevan Mission: UP provides tap water connections to over 81 L rural households (The Statesman, 22.02.2023)
- Centre's nod for setting up Mahadayi authority (Deccan Herald, 23.02.2023)
- PM to lay foundation stone for Rs. 2,500 cr K'taka water projects (The Times of India, 27.02.2023)

History- SHOLAYAR HYDRO-ELECTRIC PROJECT

The Sholayar river is one of the tributaries of the Chalakudi river which flows through Trichur district of Kerala. The possibilities of power development in the Chalakudy basin were first investigated about 1920s. A number of eminent engineers including Mr. S.G. Forbes of erstwhile Mysore State and Sir Henry Howard were consulted on the proposals. As a result of this investigation the Poringalkuthu Left Bank Scheme utilizing a drop of about 183 m was finally evolved. The present Poringalkuthu Power Station was on the left bank, more or less in the centre of the basin. The scheme has been completed in two stages and has an installed capacity of 32,000 kW, although the firm output in 1962 was only 8,000 kW.

The development of power from the Sholayar river was engaging the attention of Kerala engineers for some time and even from the very start the most feasible and economic method of diverting the Sholayar waters into the Anakayam valley and finally utilizing the water discharge for the Poringalkuthu Left Bank Scheme was decided upon. When the Sholayar Project was completed, it was augmented the supply to the Poringalkuthu Left Bank Reservoir by 10.7 cum per sec to generate an extra power of 15,200 kW at 100 percent load factor at Poringalkuthu, thus increasing the firm output of the Left Bank Station to 23,200 kW.

The tail waters of the Sholayar and Poringalkuthu Stations help regulate the irrigation supply at the Chalakudy weir of the Chalakudy Irrigation Scheme in the lower reaches.

The river

The Sholayar river is one of the main tributaries of the Chalakudy river. Rising in the Anamalai range of the Western Ghats, the Sholayar river flows through Tamilnadu and Kerala to join the Parambikulam Aar, another major tributary of the Chalakudy river.

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The whole catchment is sparsely populated. The catchment above the Sholayar dam site is 186 sq. km. (72 sq mile) of which 122 sq km (47 sq mile) lie within Tamilnadu State.

Inter-State Agreement

The Sholayar Hydro-Electric Project in Kerala State was sanctioned for execution early in the Second Five Year Plan. Work on the Project, however, could not be started immediately, since erstwhile Madras had claims over the waters of part of the Sholayar catchment situated in her territory. Tamilnadu had also claims over the waters of the Parambikulam, and the State planned to build a dam across the Parambikulam Aar and divert the west-flowing waters eastwards for power generation and irrigation. Tamilnadu needed Kerala's cooperation for the construction of the Parambikulam Dam on Kerala territory, while Kerala was partly dependent on Madras for the success of her Sholayar Hydro-Electric Project. This being an inter-State issue, several meetings were held between the Ministers of Madras and Kerala Governments at Trivendrum, Madras, Ooty and Delhi with the Central Water & Power Commission (now Central Water Commission) as liaison.

After considerable discussion, further talks between the Governments of Kerala and erstwhile Madras were initiated by the Home Minister of the Government of India, and these were successfully concluded in July 1960, with the drafting of a new agreement to share the waters of the Parambikulam Aar and the Sholayar river.

SHOLAYAR PROJECT – KERALA Features at a Glance	
CATCHMENT AREA	186 sq km (72 sq mile)
AVERAGE RAINFALL	320 cm (126 in.)
ANNUAL YIELD	340 million cu m (12,000 million cu ft)
DAM	
Type	Masonry, Gravity
Length	396 m (1,300 ft)
Height above river bed	58 m (189 ft)
Volume of masonry	0.269 million cu m (9.5 million cu ft)
RESERVOIR	
Storage capacity	150 million cu m (3,500 million cu ft)
FLANKING DAM	
Height above bed level	18.3 m (60 ft)
Length at top	264 m (865 ft)
Quantity of masonry	0.035 million cu m (1.25 million cu ft)
Spillway length (Overall)	68.4 m (224 ft)
TUNNEL:	
Length	738 m (2,422 ft)
Area	7.9 sq m (85 sq ft)
POWER PLANT	Three units of 18,000 kW each
POWER GENERATION	44,300 kW at 60 percent load factor
COST	Rs. 432 lakhs

SHOLIAR PROJECT, MADRAS

The Sholiar Dam and Power House constructed across the Sholayar river just before it enters Kerala State form a part of the Parambikulam Aliyar Project conceived by the Government of Tamilnadu. The object was to hold up the Sholayar waters in Tamilnadu territory and diverting it ultimately through a 3.2-km (two-mile) long tunnel to the Parambikulam valley for power generation.

As per the inter-State agreement, after the storage reservoirs in Periyar were ready, waters of this river diverted to Tamilnadu entirely. In order to meet the requirements of Kerala and also to regulate the Nirar waters and surpluses available at Sholiar Dam, a gross reservoir capacity of 153 million cum was provided.

Features

The project essentially consists of an earth cum-masonry dam, 1,290 m long, rising to 88 m above the

deepest bed level. The dam holds about 153 million cum of water.

The Nirar water diverted into the Sholiyar Valley by a surplussing weir across the Nirar and a 3.5 km long tunnel. This 45 cum per sec capacity tunnel diverts most of the discharge into the Sholiar Reservoir, allowing 12.7 million cum to surplus over the weir.

The water from the Reservoir led through a two-mile tunnel having a peak capacity of 21 cum per sec and dropped into the Parambikulam Valley through two penstocks of 1,524 m length and about 2 m average diameter.

Power House

The Power House located in the Parambikulam Valley, where the head available for power development is 396 m. The firm power output at this power house is 32,500 kW continuous, and the maximum power developed at 60 percent load factor is about 69,700 kW, from an installed capacity of two units of 35,000 kW each. The power generated stepped up to 110 kV for transmission to the existing Tamilnadu Grid.

Conclusion

Madras and Kerala have both reasons to be happy at the outcome of the inter-State issue on the utilization of a common river resource. It is now possible for Kerala to go full steam ahead with the Sholiyar Hydro-Electric Project, as for Tamilnadu with their Project, both aimed at bringing large benefits in terms of power production and additional food production.

SHOLIAR PROJECT – Tamilnadu Features at a Glance	
CATCHMENT AREA	122 sq km (47 sq mile)
AVERAGE RAINFALL	347 cm (137 in.)
DAM	
Length - Masonry Earthen	655 m (2,150 ft) 635 m (2,082 ft)
Total	1,290 m (4,232 ft)
Height - Masonry Earthen	88 m (289 ft) 20 m (64 ft)
Quantity – Masonry Earth	0.52 million cu m 0.47 million cu m
POWER PLANT	
Installed Capacity	Two units of 35,000 kW each
OUTPUT	69,700 kW at 60 percent load factor

(Source: Bhagirath January 1962)



Central Water Commission

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E-mail: media-cwc@gov.in

