



R. K. Sinha
Chairman

Message

The month of January is my last working month. My 35 years of journey in the water sector has been full of proud moments for the country as well as challenges and changes. Last month, two remarkable achievements were made in water sector of the country which will have far reaching outcomes.

Firstly, the Rajya Sabha passed the landmark Dam Safety Bill (2019), paving the way for enactment of the Dam Safety Act in the country. After China and the United States, India is the world's third- largest dam-owner. Although India's dam safety

record is comparable to that of developed countries, a robust framework was needed to avoid dam failures and ensuring adequate maintenance. The Dam Safety Bill ensures that all required dams in the country are properly monitored, inspected, operated, and maintained in order to avoid dam failure-related calamities. The Bill establishes an institutional system at both the central and state levels to handle structural and non-structural measures required to ensure the security these assets. The bill also focuses on dam owners completing mandated dam safety steps within a set timeframe. CWC has been in the centre-stage for evolving Dam safety mechanism for last several decades. The enactment of this Bill ushers in a new era in India in terms of dam safety and water resource management.

The second major milestone achieved was approval of the funding and implementation of the Ken-Betwa inter-river project by

Union Cabinet. The overall cost of the Ken-Betwa link project has been estimated at Rs.44,605 crore. The Union Cabinet has authorised central support for the project in the amount of Rs.39,317 crore, which includes a grant of Rs.36,290 crore and a loan of Rs.3,027 crore. Project includes water transfer from the Ken to the Betwa River via the Daudhan Dam and a canal connecting the two rivers, as well as the Lower Orr Project, Kotha Barrage, and Bina Complex Multipurpose Project. The project will pave the way for additional interconnection of river projects in India, as well as demonstrating our innovation and vision to the rest of the globe.

I convey my best wishes to CWC for its future endeavours towards water secured and prosperous India. I thank everyone for their cooperation and wish everyone a happy, prosperous and healthy New Year 2022.







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

WATER HEROES

Share Your Stories Contest

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Dam Safety Act, 2021

The Dam Safety Act, 2021 has been enacted by the Parliament and has come into force with effect from 30.12.2021. The Act provides for surveillance, inspection, operation and maintenance of the specified dams 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 Dam Safety Act, inter alia, provides for—

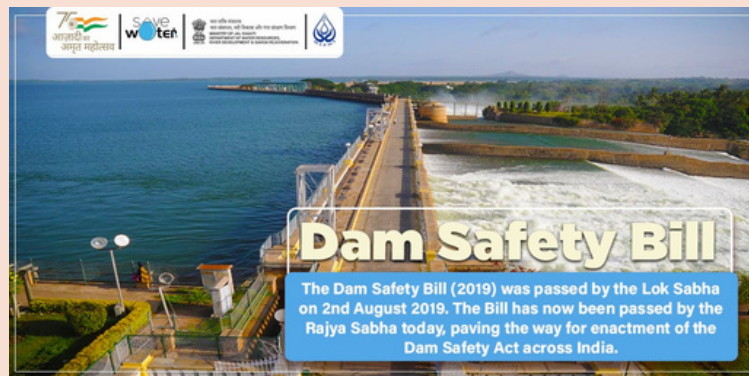
- constitution of the National Committee on Dam Safety to discharge functions to prevent dam failure related disasters and to maintain standards of dam safety and it shall evolve dam safety policies and recommend necessary regulations as may be required for that purpose;
- establishment of the National Dam Safety Authority as a regulatory body to implement the policy, guidelines and standards for proper surveillance, inspection and maintenance of specified dams and address unresolved points of issues between the State Dam Safety Organisations of two States, or between the State Dam Safety Organisation of a State and the owner of a dam in that State, and in certain cases, such as dams extending in two or more States or dams of one State falling under the territories of another State. It shall also perform the
- role of State Dam Safety Organisation thereby eliminating potential causes for inter-State conflicts;
- constitution of the State Committee on Dam Safety by the State Governments to ensure proper surveillance, inspection, operation and maintenance

Meeting taken by Hon'ble Minister for Jal Shakti on Implementation of Dam Safety Act, 2021

A meeting was held under the Chairmanship of Shri Gajendra Singh Shekhawat, Hon'ble Union Minister for Jal Shakti to deliberate upon the implementation of the various provisions in the Dam Safety Act 2021 recently notified on 14.12.2021. The meeting was co-chaired by Shri Bishweswar Tudu, Hon'ble Minister of State for Jal Shakti. Senior officers from DoWR, CWC and Professors from certain Engineering Institutes also attended the meeting. The Hon'ble Union Minister for Jal Shakti stated that as the Dam Safety Act 2021 has been notified by GOI, we need to look forward to its effective implementation in the entire country. The task being gigantic, we need to seek the participation of all the

Preparation of Rule Level Curves for Srisailem and Nagarjuna Sagar Reservoirs

The Rule Levels for the Srisailem and Nagarjuna Sagar Reservoirs were prepared based upon the KWDT-I (Krishna Water Disputes Tribunal-I) award and other inter-State agreements. The simulation for 37 years



of all specified dams in that State and ensure their safe functioning;

- establishment of the State Dam Safety Organisation in States having specified dams which will be manned by officers with sufficient experience in the field of safety of dams;
- penalty for those who, without reasonable cause, obstructs concerned inspecting officials from performing their dam safety-related duties or refuses to comply with any direction given by or on behalf of the Central Government or the State Government or the National Committee or the Authority or the State Committee or the State Dam Safety Organisation under this Act. The punishment shall range from imprisonment for a term which may extend to one year or with fine, or with both, and if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, shall be punishable with imprisonment for a term which may extend to two years. In corruption, related cases may be treated under relevant clauses of IPC.

professionals working in the field of dam safety. The academic institutions can play a very effective role in achieving the goals as envisaged in the aforesaid Act by educating the dam professionals at the central and state level with the latest techniques and research work carried out in the dam engineering and dam safety areas. The Joint Secretary then welcomed the guest professors from IIT Madras, MNIT Jaipur & Scientist, BIS and introduced them to all the officers present in the meeting. He requested the professors to share their views and how the academic institutes of repute can contribute to the implementation of the Dam Safety Act and the provisions contained therein.

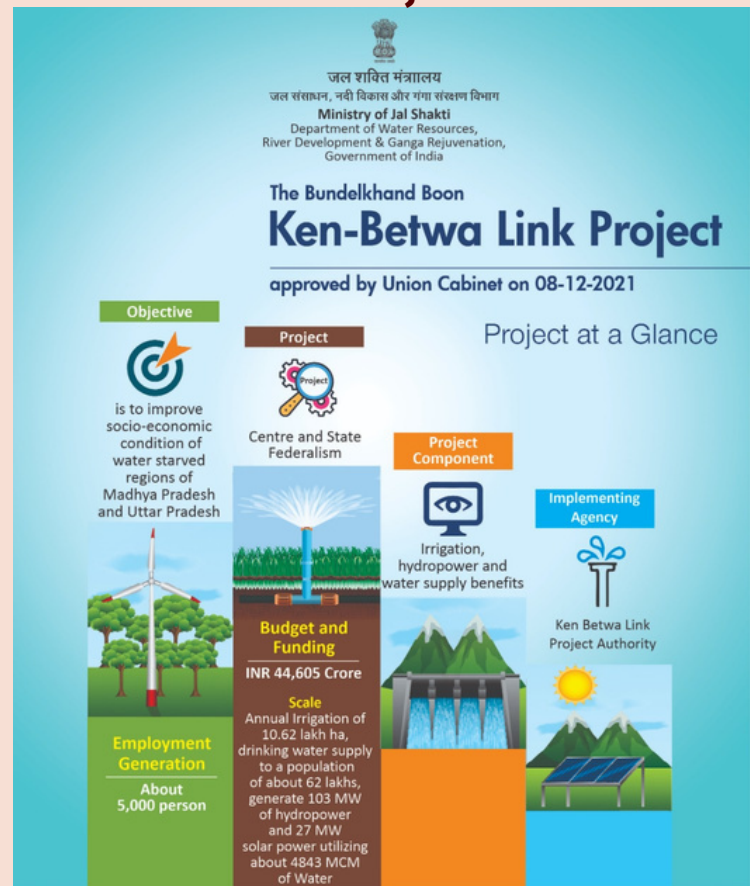
(1984-85 to 2020-21) showed a success rate of 81% towards meeting the demands of both projects. The Report of the Rule Levels has been forwarded to the Krishna River Management Board (KRMB).

Cabinet Approval for Implementation of the Ken-Betwa Link Project

On 08.12.2021, the Union Cabinet approved the implementation of the Ken-Betwa link project at a total cost of Rs. 44,605 crore with a funding pattern at 90:10 (Centre-State) and with Central support of Rs. 39,317 crore for the project, covering a grant of Rs. 36,290 crore and a loan of Rs. 3,027 crore. The Union Cabinet also approved the creation of a Special Purpose Vehicle viz., Ken-Betwa Link Project Authority (KBLPA) for the implementation and monitoring of the project.

Ken-Betwa Link project is the first major river-linking project of the country that will address the water requirement of drought-prone regions of Bundelkhand of Madhya Pradesh and Uttar Pradesh. A historic agreement was signed between the Union Minister of Jal Shakti and the Chief Ministers of Madhya Pradesh and Uttar Pradesh in the august presence of the Hon'ble Prime Minister on 22.03.2021 which paved way for the implementation of the Ken-Betwa Link.

Ken-Betwa Link project envisages the transfer of water from the Ken to the Betwa River through the construction of Daudhan Dam and a canal linking the two rivers, the Lower Orr Project, Kotha Barrage and Bina Complex Multipurpose Project. The project will provide annual irrigation of 10.62 lakh ha covering CCA of 9.08 lakh ha, drinking water supply to a population of about 62 lakhs and also generate 103 MW of hydropower and 27 MW solar power. The Project will be implemented with State of Art Technology in 8 years.



This project will provide enormous benefits to the drought-prone districts of Panna, Tikamgarh, Chhatarpur, Sagar, Damoh, Datia, Vidisha, Shivpuri and Raisen of Madhya Pradesh and Banda, Mahoba, Jhansi & Lalitpur of Uttar Pradesh in Bundelkhand region.

13th meeting of the High Powered Steering Committee for Implementation of National Projects

The 13th meeting of the High-Powered Steering Committee (HPSC) for implementation of National Projects was held on 06.12.2021 under the Chairmanship of Secretary, DoWR, RD & GR (MoJS), through video conferencing. The meeting was attended by Officers from Ministry, Central Water Commission,

Upper Yamuna River Board, National Water Development Authority, Polavaram Project Authority and State Governments etc. During the meeting, detailed discussions were held on the progress, issues/bottlenecks pertaining to the National Projects and inclusion of projects under the scheme of National Projects.

Workshop on Analysis of Water Quality Parameter E-Coli and Streptococcus

A workshop on "Analysis of Water Quality Parameters: Escherichia coli (E. coli) and Streptococcus" was conducted on 09.12.2021 through virtual mode by Upper & Middle Ganga Water Quality Laboratory, MGD-3, Varanasi. On behalf of the Chairman, CWC, the workshop was inaugurated by Director, TC Directorate. Initially, welcome address and introduction regarding the workshop were given by Superintending Engineer(C), LGBO, Patna followed by the addresses of Chief Engineer, LGBO and Chief Engineer, P&DO. Director, TC Directorate had appreciated the efforts of LGBO for organizing the workshop considering the importance of analysis of these 2 new parameters in CWC. The inaugural session of the workshop was followed by the

scientific session of the workshop.

The scientific officers of CWC from all 23 laboratories and HQ participated in the scientific session. Shri A. K. Trivedi, ARO and Mr. Abhishek Kumar, SRA gave the introduction regarding the analysis of E. Coli and Streptococci in river water. Further, Ms. Madhuri Saroj and Shri Ajay Kumar, SRAs in their presentation, explained the importance and method of analysis of E. coli and Streptococcus in river water samples. They demonstrated the practical sessions by recorded videos of analysis in the laboratory. Since the analysis of these parameters is being carried out for the first time in CWC, there were a lot of doubts regarding the analysis, which were discussed in detail.

International Workshop on 'Systematic Asset Management Software' by IWMI

Shri Kushvinder Vohra, Member(WP&P), CWC addressed the participants on 01.12.2021 in an international workshop on "Systematic Asset Management Software (SAMS)" organized by International Water Management Institute (IWMI) jointly with Mahatma Phule Krishi Vidyapeeth (MPKV), Rahuri in association with the World Bank supported National Hydrology Project (NHP), Central Water Commission (CWC), Indian Council of Agricultural Research (ICAR), and Water Resources Department (WRD) of Maharashtra.

Member (WP&P), CWC mentioned that water being a State subject in India, each State has the authority to deal with issues around supply, distribution, storage and infrastructure on their own. Inefficiency in the use of water is seen at all the layers of water use and management. Therefore, Systematic Asset Management assumes great significance in this regard.

He emphasized the usage of the latest technology in water resource management and conservation and urged for exploration of uses of artificial intelligence in irrigation, agriculture, horticulture, forestry etc. It was pointed out that Real-time Integrated Water Management System/Decision Support System (DSS) at the national, state, district, block and village/town level

Visit/Tours of Chairman, CWC

Patna

Shri Ranjan Kumar Sinha, Chairman, Central Water Commission visited LGBO, CWC, Patna accompanied by Chief Engineer, LGBO, CWC from 22.12.2021 to 25.12.2021.

Chairman, CWC attended a meeting with district authorities regarding the allotment of land for Kosi Sub-Division, CWC, Begusarai. Further, the Chairman directed Chief Engineer, LGBO, Patna to pursue the matter. He also reviewed the progress of the CWC building at Patna

Nepal

Shri R. K. Sinha, Chairman & Member(RM), CWC, New Delhi and Shri Ram Jeet Verma, Superintending Engineer, Planning Circle, CWC, Faridabad & Project Manager(I), JPO-SKSKI visited Nepal during 27th -31st December 2021 for reviewing & suggesting necessary steps to speed up the delayed investigation works of Sapta Kosi High Dam Multipurpose Project (SKHDMP) and Sunkosi Storage cum Diversion Scheme (SSDS), in Nepal.

During the above visit, Chairman & Member(RM), CWC discussed the issues related to the above investigation works with Mrs. Namgya C. Khampa, Deputy Chief of Mission, Indian Embassy, Kathmandu; Shri Sandip Kumar Dev, DG, Dept. of Electricity Development and Team Leader, JTE(N) and other Nepal Government officials from Department of Electricity Development, Department of Water Resources & Irrigation, Nepal Electricity Authority. The above-said delegation also met



can help prepare area-wise water budgets, issue advisories on which crops to sow (area-wise), watershed development and water conservation activities to be undertaken.

He further elaborated that Systematic Asset Management can help in the sustainable operation and maintenance of irrigation infrastructure, which would be beneficial in achieving the last mile connectivity viz. making the water available for tail-end users, proper & timely maintenance of irrigation infrastructure, improved water use efficiency, equitable & reliable service delivery, improved crop productivity, overall socio-economic development.

Member(WP&P) commended the efforts of IWMI for making SAMS and appreciated IWMI for organizing this workshop for providing hands-on training to Engineers in operational aspects of the software.

and directed to complete it in FY 2021-22. He also directed that the process for NABL accreditation of Level-II Water Quality Laboratory at Patna may be expedited. Chairman inspected Sub-division and sites under LGBO, Patna with observation and suggestion for compliance like installation of gauge post, observation of all six parameters of water qualities at L1 lab, timely submission of H.O. data to concerned office, timely checking of MTBM and many other essential works.



with Mrs. Pampha Bhusal, Hon'ble Minister of Energy, Water Resources & Irrigation, Govt. of Nepal and Secretaries of the Energy, Water Resources & Irrigation, Govt. of Nepal.

The above discussions were fruitful and ended with a positive note for resolving the hurdles in the investigation works of SKHDMP & SSDS. Chairman & Member(RM), CWC along with other officials of JPO-SKSKI also visited the proposed SKHDMP dam site and Chatra & Sisauli barrage sites.

The 51st meeting of Classified Data Release Committee (CDRC)

Date of Meeting	14.12.2021
Total cases Considered	09
Commercial cases	08
Non-Commercial cases	01
No. of Cases Recommended by the -Committee	07
No. of Cases Rejected	02

146वीं राजभाषा कार्यान्वयन समिति की बैठक

संसदीय राजभाषा समिति की दूसरी उप-समिति द्वारा दिनांक 30.12.2021 को केंद्रीय जल आयोग (मुख्यालय) के पुणे स्थित राष्ट्रीय जल अकादमी कार्यालय का राजभाषा निरीक्षण किया गया। माननीय समिति द्वारा राजभाषा कार्यान्वयन की प्रगति पर संतोष व्यक्त किया गया तथा प्रशंसनीय उपलब्धियों के लिए अकादमी की सराहना भी की गई।

Preparation of Concept Paper on the Sub-Themes of Theme "Water Security"

The Government of India is planning to hold discussion with State on various aspects. "Water Security" is one of the 06 themes identified by Cabinet Secretariat for organizing Conferences with the States in order to have detailed discussions with them. Ministry of Jal Shakti is entrusted to prepare a concept paper on this theme.

After initial deliberation held in the Ministry, the theme has been further divided in three sub-themes, namely:

- Water Use Efficiency & Governance
- River Conservation and Rejuvenation
- Water Conservation

Three Expert Groups have been formed to further deliberate on sub-themes and finalise the Concept Note. In this regard, a common meeting of identified experts of all the three sub-themes was held in hybrid mode on 03.12.2021 at NMCG, New Delhi. During the meeting, views of the participants which included officials from Ministry of Jal Shakti, M/o Rural Development, M/o Agriculture & Farmers Welfare, M/o Housing & Urban Affairs, Confederation of Indian Industries (CII), National

Ken Betwa River Link on Sansad TV

A programme on River Interlinking on Sansad TV was held on 15.12.2021 wherein Shri Kushvinder Vohra, Member(WP&P), CWC and Shri Bhopal Singh, DG, NWDA participated. Union Cabinet has recently approved the funding and implementation of the Ken-Betwa Link project. This project which involves the transfer of water from the Ken to the Betwa River will be of immense benefit to the water-starved Bundelkhand region, spread across the states of MP and UP. The interlinking of rivers (ILR) programme is a major endeavour to create additional storage facilities and transfer water from water-surplus regions to water-deficit areas. The link of

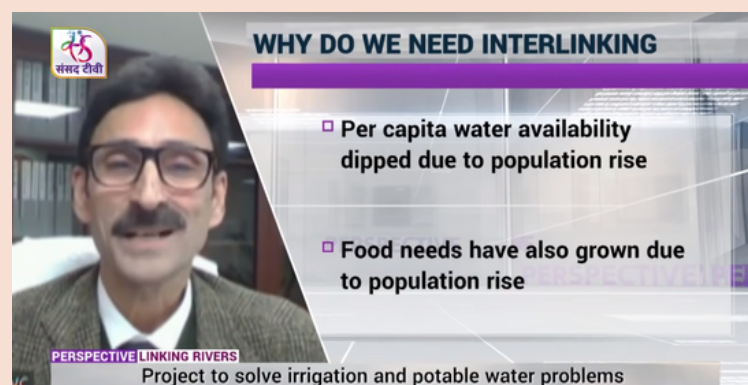
Assessment of benefits of Polavaram

A meeting held on 2nd and 14th December, 2021 under the Chairmanship of Member(WP&P), CWC for the assessment of cost and benefits of Polavaram Irrigation Project (PIP) at MDDL (+41.15 m). Meeting was attended by Officers from Central Water Commission and detailed discussions were held to assess the cost and benefits of PIP at MDDL (+41.15m).



Institute of Urban Affairs (NIUA), educational institutions such as IIT Kanpur, IIT Roorkee, and other experts were noted.

Further, a Brainstorming session on the theme "Water Security" was held under the Chairmanship of Secretary (WR, RD&GR) on 09.12.2021 (in hybrid mode) with the officials from Ministry of Jal Shakti, other Central Ministries, Central Water Commission and officials from various State Governments. Chairman, CWC participated in the session along with Chief Engineer (POMIO) and other officers from CWC. During the session, the States were informed about the proposed activities under the programme along with a brief introduction on each of the three sub-themes and State's readiness was sought for participating in any or all of the three sub-themes. Representative of State governments were then given the opportunity to provide their suggestions and topic of their interest/sub-themes in which they wanted to get involved. Various suggestions were provided during the meetings for incorporation in the background note on sub-themes.



this program is as under:

<https://youtu.be/V3iZy6oqBHU>

117th Meeting of Technical Advisory Committee of Farakka Barrage Project(TAC-FBP)

The 117th meeting of the Technical Advisory Committee of Farakka Barrage Project (TAC-FBP) was held during 21st - 23rd December 2021 under the Chairmanship of Dr. R. K. Gupta, Member(D&R), CWC / Chairman TAC-FBP. Site Visit to Barrage and appurtenant structures, erosion affected areas in upstream & downstream of the barrage, and feeder canal under the jurisdiction of FBP were made on 21st -22nd December 2021 before the meeting on 23.12.2021.

TAC-FBP advises the Farakka Barrage Project Authorities on various technical matters related to Barrage and its Appurtenance Structures, mainly Hydro-mechanical Components, Anti Erosion and Bank Protection works, Scour problems in Feeder Canal, etc. Following Officers from CWC HQs attended the TAC.

(i) Shri Vijai Saran, Chief Engineer, Design E&NE Unit,



Meeting at the erosion Effected area, Birnagar (U/S of Farakka Barrage)

(ii) Shri Shiv Kumar Sharma, Director, (iii) Shri Sarbjit Kumar Singh, Deputy Director, (iv) Shri Harkesh Kumar, Director, and (v) Shri Aditya Mishra, Deputy Director.

Visit to KCC Tailings Dam (Khetri Copper Complex, Hindustan Copper Ltd (HCL)

A CWC team, headed by Chief Engineer, Design(N&W) made an inspection visit to KCC Tailings Dam (Khetri Copper Complex, Hindustan Copper Ltd (HCL), Khetri Nagar, Distt. Jhunjhunu, Rajasthan) on 10.12.2021. Director and Deputy Director, Embankment (N&W) were also part of the team. Embankment (N&W) Directorate has been providing Design consultancy to HCL for raising the height of Khetri Tailings Dam. The visit was made in connection with further raising the height of the Tailings Dam.



Training Activity

A. Cadre Training Program (On Campus Program)

Name of the Program	Dates	No. of Participants	Conducted at
Mandatory Cadre Training Program (MCTP): Level 1 for Junior Time Scale Officers of Central Water Engineering (Group A)	13 th -31 st December 2021	25	NWA, Pune; IIT-Roorkee; and IIM-Ahmedabad

B. Technical Programs (online through e-learning platform of NWA)

Name of the Program	Dates	No of Participants
i. Introduction to Python Programming and its Application in Water Resources Sector	13-24th December 2021	404

C. Mass Awareness Program (CISCO-Webex Platform of NWA)

Modalities for conducting 10 trainings programmes covering the 10 Agroclimatic Zones of Odisha targeting public representatives of Zilla Parishad, Block Level and Panchayat Official as well as Office Bearers of Pani Panchayats and Progressive Farmers were firmed up.

Content, coverage and faculty for programs were identified in consultation with WALMI, Odisha. The programs are being conducted in the online mode targeting Zilla Parishad Block Level and Panachayat Officials etc., for a duration of two days. As a part of this on-going series of Training-cum-Webinar on Water Conservation and Management in association with WALMI, Odisha, three programs were completed in the month of November 2021, and three were completed in December 2021. The details for the month of December-2021 are as under.

Sl. No	Name of the Program	Dates	No of Participants
1.	Training -cum-Webinar on "Water Conservation and Management" in association with WALMI, Odisha - Program 4 (Covering districts of East and South Eastern Coastal Plain Agro-climatic Zone)	02 nd -03 rd December 21	308
2.	Training -cum-Webinar on "Water Conservation and Management" in association with WALMI, Odisha - Program 5 (Covering districts of North Eastern Ghat Agro-climatic Zone)	09-10 th December 21	263
3.	Training -cum-Webinar on "Water Conservation and Management" in association with WALMI, Odisha - Program 6 (Covering districts of Eastern Ghat High Land Agro-climatic Zone)	16-17 th December 21	256

Remaining four programs are scheduled during January 2022.

Flood Situation in the Country

Regular Flood Forecasting Activity by CWC commenced on 01.05.2021 in Brahmaputra and Barak and Jhelum basins. During the period from 1st May to 31st December 2021, 10617 flood forecasts (6670 Level and 3947 Inflow) were issued, out of which 9976 (6456 Level and 3520 Inflow) forecasts were within the limit of accuracy with a percentage accuracy of 93.96%. Thirty (30) nos. of Orange Bulletin (for Severe Flood Situation) and No Red Bulletin for Extreme Flood Situation were issued in November from Central Flood Control Room.

Summary of Flood Situation during 01.05.2021 to 31.12.2021

Extreme Flood Situation

Eight No. FF station observed Extreme Flood Situation.

Sl. No.	State	District	River	Station	Period	
					From	To
1.	Bihar	Patna	Ganga	Hatidah	13/08/2021	19/08/2021
2.		Bhagalpur	Ganga	Bhagalpur	16/08/2021	19/08/2021
3.	Uttar Pradesh	Auraiya	Yamuna	Auraiya	06/08/2021	07/08/2021
4.		Buduan	Ganga	Kachlabridge	23/10/2021	23/10/2021
5.		Siddarthnagar	Rapti	Bansi	02/09/2021	04/09/2021
6.	Odisha	Balasore	Subarnarekha	Mathani Bridge	22/09/2021	22/09/2021
7.	West Bengal	Coochbehar	Teesta	Mekhliganj(R/B)	20/10/2021	20/10/2021
8.	Andhra Pradesh	Nellore	Pennar	Nellore Anicut	20/11/2021	20/11/2021

50 Flood Monitoring Stations observed Extreme Flood Situation.

Severe Flood Situation for FF Stations

87 FF Stations observed Severe Flood Situation in the States of Arunachal Pradesh, Assam, Odisha, Bihar, Uttar Pradesh, Uttarakhand, West Bengal, Maharashtra,

DRIP

World Bank Review Mission for DRIP Phase II

World Bank Review Mission for DRIP Phase II was held in hybrid mode with eleven (11) Implementing Agencies during 30th November – 21st December 2021, followed by a wrap-up meeting on 22.12.2021 at New Delhi under the Chairmanship of Smt. Debashree Mukherjee, Additional Secretary, DOWR, RD&GR. During these meetings, States were sensitized about Project Implementation requirements and other important aspects related to procurement, finance, social and environment. The discussion was held with each agency regarding implementation of the project including physical & financial progress, dam safety inspections, design flood review, procurement status and issues and timeline for remaining activities. In respect of Implementing Agencies from the State of Meghalaya, Manipur, Gujarat, Odisha, Uttarakhand, Rajasthan, Kerala, the mission was held physically in Delhi. However, for the State of Chhattisgarh, Karnataka,

Rajasthan, NCT Delhi, Andhra Pradesh, Kerala, Telangana and Jharkhand.

Above Normal Flood Situation

42 FF Stations in Assam, Bihar, Jharkhand, Uttar Pradesh, West Bengal, Andhra Pradesh, Telangana, Maharashtra, Tamilnadu and Odisha observed Above Normal Flood Situation.

Reservoirs having Inflow above threshold limit

79 reservoirs received inflows above their threshold limit in Karnataka, Jharkhand, Odisha, West Bengal, Bihar, Maharashtra, Tamilnadu, Uttarakhand, Uttar Pradesh, Telangana, Rajasthan, Gujarat, Andhra Pradesh, Kerala and Madhya Pradesh.



Maharashtra and West Bengal, the review mission was held in their respective States. The Review Meetings were attended by officials of the World Bank, CWC and Implementing Agencies.

Visit of Expert Project Review Committee to Sirhind Feeder and Rajasthan Feeder project

The second visit cum review meeting of the Expert Project Review Committee led by Member(WP&P), CWC was done on 10.12.2021 to review the progress of works in respect of Relining of Rajasthan Feeder (RF) from RD 179000 ft to 496000 ft and Sirhind Feeder (SF) from RD 119700 ft to 447927 ft.

RF having 18500 cusec capacity and SF having 5439 cusec capacity at the head, run parallel with common bank. These two canals were taken up for construction in the late 50's and were completed in mid 60's. SF has C.C.A. of 621000 Ha and after relining, 256 cusecs of water would be saved which could be utilized for irrigation of 44177 Ha in Punjab and 10371 Ha in Rajasthan. RF has C.C.A. of 1963000 Ha and after relining, 560 cusecs of water would be saved which could be utilized for irrigation of 51131 Ha in Rabi and 47608 Ha in Khariff in Rajasthan.

During the visit/ review meeting, Chief Engineer, Punjab gave a brief presentation on the progress made in the work as well as issues being faced in the



execution. Then the site visit commenced starting approximately from RD 257000 ft of SF (SF) and concluded at RD 451000 ft. The committee inspected the various aspects of the under-construction portion as well as the portion already constructed during previous closures for both Sirhind & RF. Committee made various observations/recommendations pertaining to the quality of construction, adherence to approved design/design changes etc.

Preparation of DPR of Proposed Ayodhya Barrage Project

The MoU for preparation of DPR of the Ayodhya Barrage Project was signed between the Central Water Commission (CWC) and the Government of Uttar Pradesh (IWRD UP) on 26.03.2021. The Draft DPR of the project has been completed and submitted to IWRD, Govt. of UP on 18.12.2021. Some observations were made by IWRD on Draft DPR. The same will be submitted to Government of UP by January 2022.



Financial Progress of Schemes

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

Sl. No.	Scheme/Component Name	BE 2021-22	Expenditure	Expenditure (in %)
1.	Development of Water Resources information System (DWRIS)	175.00	110.467	63.12
2.	Investigation of Water Resources Development Schemes (IWRD)	12.00	5.062	42.18
3.	Flood Management & Border Areas Programme (FMBAP)	27.32	6.629	24.26
4.	Infrastructure Development (ID) Schemes	4.50	2.857	63.49
5.	National Hydrology Project	23.905	6.816	28.50
6.	Dam Rehabilitation and Improvement Project (DRIP) Phase-II	25.00	13.00	52.00

Water Sector News

- ✈ Mullaperiyar water let out without warning (The Hindu, 01.12.2021)
- ✈ RS passed Dam Safety Bill amid Oppn protest (Hindustan Times, 03.12.2021)
- ✈ Floating solar panels to be deployed in 10 reservoirs (The Hindu, 05.12.2021)
- ✈ Cabinet OKs funds for Rs. 44,600 cr Ken-Betwa river-linking project (The Times of India, 09.12.2021)
- ✈ Dam Safety Bill : Calculated risk or a gamble for TN ? (The Times of India, 10.12.2021)

- ✈ PM launches Saryu Canal Project in UP, bats for natural farming (Millennium Post, 12.12.2021)
- ✈ Centre allocates Rs.93,000 cr for top irrigation plan & 2 hydro projects (Times of India, 16.12.2021)
- ✈ A new round of Centre-state acrimony over the dam safety bill (Deccan Chronicle, 23.12.2021)
- ✈ Tamil Nadu lauded for regulating industry's groundwater extraction (The Hindu, 29.12.2021)
- ✈ We haven't finished our mission, but large patches of Ganga are clean (The Hindu, 26.12.2021)

Data Corner

Details of Central Assistance and CCA covered under CADWM component of Pradhan Mantri Krishi Sinchayee Yojana – Har Khet Ko Pani

Sr. No	Name of the State/ UT	Central Assistance target (Rs. in crore)	Central Assistance released (Rs. in crore)	Culturable Command Area target thousand hectare)	Culturable Command Area achieved (thousand hectare)
1	Andhra Pradesh	349.38	69.18	178.62	0.00
2	Assam	96.63	7.55	49.69	23.40
3	Bihar	50.66	35.82	30.51	17.25
4	Chhattisgarh	79.57	21.71	42.63	0.00
5	Goa	18.77	3.84	11.78	1.05
6	Gujarat	2510.88	1719.15	1363.86	938.61
7	Jammu & Kashmir	5.24	3.57	2.46	1.69
8	Jharkhand	133.32	0.00	66.65	0.00
9	Karnataka	175.60	75.28	84.02	34.84
10	Kerala	48.72	2.69	18.48	0.60
11	Madhya Pradesh	1259.02	294.76	595.52	248.43
12	Maharashtra	967.09	120.02	500.60	108.87
13	Manipur	44.36	0.00	13.06	8.67
14	Orissa	420.40	131.96	236.40	71.59
15	Punjab	228.87	18.08	142.66	0.00
16	Rajasthan	230.05	51.39	117.98	30.73
17	Telangana	702.21	36.34	529.03	10.68
18	Uttar Pradesh	914.93	156.00	524.38	0.00
	TOTAL :	8235.70	2747.35	4508.30	1496.42

(Source: Parliamentary Question- Dec 2021)

Reservoir Monitoring

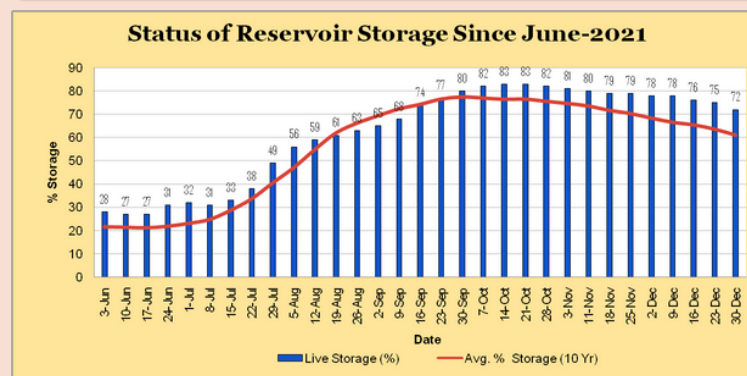
CWC is monitoring live storage status of 133 reservoirs of the country on weekly basis and is issuing weekly bulletin on every Thursday. Out of these reservoirs, 44 reservoirs have hydropower benefit with installed capacity of more than 60 MW. The total live storage capacity of these 133 reservoirs is 172.463 BCM which is about 66.89% 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 30.12.2021, the total live storage available in these reservoirs is 124.95 BCM which is 72% of total live storage capacity of these reservoirs. However, last year the total live storage available in these reservoirs for the corresponding period was 126.169 BCM and the average of last 10 years live storage was 105.111 BCM. Thus, the live storage available in 133 reservoirs as per the bulletin dated 13.12.2021 is 99% of the live storage of corresponding period of last year and 119% of storage of average of last ten years.

After publication of weekly bulletin, four additional

reservoirs were included under CWC's Reservoir Storage Monitoring System on 31st December, 2021. The combined live storage capacities at FRL of these four reservoirs is 2.904 BCM.

Dam/Reservoir	State(s)	Live Capacity at FRL (BCM)
Dimbhe	Maharashtra	0.354
Veer	Maharashtra	0.266
Rajghat	UP/MP	1.945
Barvi	Maharashtra	0.339
Total		2.904



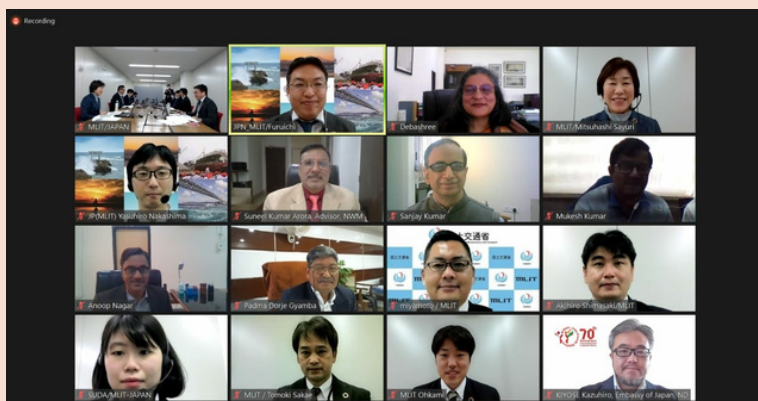
Gallery



केंद्रीय जल आयोग, गंगटोक को संघ की राजभाषा नीति के श्रेष्ठ निष्पादन के लिए वर्ष 2019-20 के लिए प्रथम पुरस्कार दिया गया.



अंतर-मंत्रालयी पुरुष हॉकी स्पर्धा के फ़ाइनल में जल शक्ति मंत्रालय की टीम जिसमें के.ज.आ. के कई अधिकारी/कर्मचारी भी प्रतिभागी थे, एक कड़े मुकाबले में दूसरे स्थान पर रही।



A Memorandum of Cooperation (MoC) in the field of Water Resources was signed between India and Japan on 11th Dec'2019. The 1st meeting of JWG has been held on 21st Dec'2021 in virtual mode.



जल शक्ति मंत्रालय भारत सरकार के अंतर्गत केंद्रीय जल आयोग वाराणसी के सौजन्य से दिनांक 20/12/2021 को गंगा उत्सव -2021 को आज़ादी का अमृत महोत्सव के रूप में मनाया गया.



Awareness programme on impact of Yoga on Health was held as a part of Azadi Ka Amrit Mahotsav in MERO campus, #Bhubaneswar on 27/12/2021

INICID presentation during IEC

The 72nd Meeting of the International Executive Council (IEC) of the International Commission on Irrigation & Drainage (ICID) was held online on 15.12.2021. However, the same could not be completed, so the meeting continued on 16.12.2021 as well. Shri K. Yella Reddy, Hon'ble Vice President of ICID on behalf of Indian National Committee on Irrigation & Drainage (INICID) gave a presentation on the arrangements proposed to be done in the 25th Congress and 75th IEC scheduled to be held at Vizag, AP in November 2023.



SRISAILAM PROJECT

History- The Lower Ganga Canal

In our land the Ganga is wrapped in divinity, because with it are linked our cultural heritage, our spiritual development and our after-world metamorphosis. Even on the material plane, Ganga has laid a great part of the foundation of our economic and social structure and has been the theme of many a legend of our civilized past.

Its benefits have been extended not only to those who come to it but to the numberless millions through hundreds of canals, distributaries and minors in their villages and on their field boundaries. Today the Ganga commands over millions of acres of culturable area in the fertile doab between the Ganga and the Yamuna and helps grow more food and fodder through the year than ever before.

The Upper Ganga Canal, which takes off at Haridwar, was commissioned in year 1854-55. It is intended to give here a first-hand impression of its great complementary system, commonly called the Lower Ganga Canal, which came into operation about two decades later, in 1877, and has ever since helped irrigation of vast tracts in the lower half of the doab, extending the field of service of the Ganga canals up to its most southern and eastern districts, namely, Farrukhabad, Etawah, Kanpur, Fatehpur and Kaushambi.

Necessity for the Lower Canal

Soon after the construction of the Upper Ganga Canal, the idea of constructing a weir across the Ganga at some point below its confluence with the Solani river, and taking out a channel from the river to supplement the existing canal, was contemplated by the Irrigation

Engineers. They were keen to put to use, almost the entire flow-down of the river for irrigation of the areas in the lower half of the Ganga-Yamuna Doab. From Garhmukteshwar downwards, two sites along the Ganga river appeared suitable for the construction of a dam, that is, Pooth in Meerut district and Rajghat Narora in Bulandshahar district.

The best site having been previously appropriated by the Oudh and Rohilkhand Railway for their bridge across the river, and since the objection to combining the two works in one seemed to far outweigh any advantage the proposal might offer, a site four miles down the river, near the village of Narora was selected for locating the Head-works of the Lower Ganga Canal.

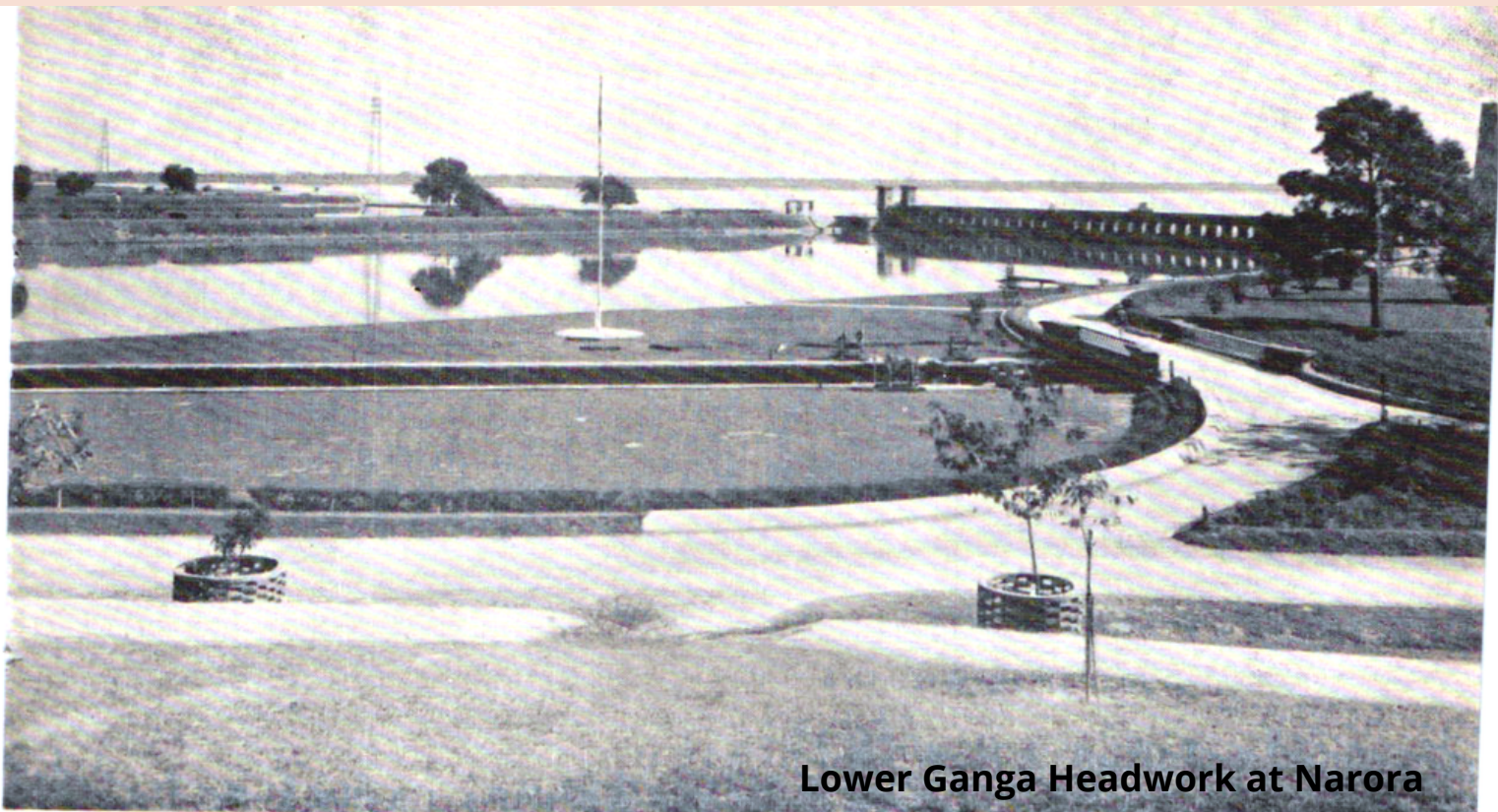
The Narora Site

Narora known in the olden days as Narwar, had been the seat of a Siddh peeth (seat of enlightenment). The Canal colony is located on a high cliff and commands a very magnificent view of the river and the canal.

It is connected to the nearest railhead at Rajghat-Narora Station on the Northern Railway, with a pucca feeder road, as well as a Railway trolley system, and is within three hours motor-drive from Delhi, being about 80 miles via Bulandshahar.

Site of the Weir

It is a magnificent view to look at a great river like the Ganga, dammed across its entire width, creating a vast lake needed to feed a big and perennial canal system. The selection of a site for building such a weir across its entire width needed many considerations. The river must run at the spot in a single well-defined channel,



Lower Ganga Headwork at Narora

which should be sufficiently narrow. The stream must be confined between banks of almost permanent character, never liable to be overtopped even in the highest floods. The weir should be in a straight reach of the river and far removed from bends, so that the approach to and departure from the weir may be effected, as little as possible, by counter currents. There should be very little uneven flow of the river on one side or the other so that the floods may get uniformly discharged over the entire length of the masonry bar. Though it is difficult to apportion to each of these factors their relative value or significance, the Narora site answered favourably to all the requirements for the location of the weir.

The Headworks

The weir length is 3,800 feet. It is a solid wall of brick masonry with its sill built-in cut stone and founded on 10 ft. square wells. Over the weir can be seen 587 wooden shutters, each 3-ft high, when erect. These are hinged at one end and can be raised during low supplies, whenever it is intended to create a pondage upstream of the weir. When, however, floods are on, they are let down and lie flat over the weir top.

Undersluices

At the right end of the weir are the undersluices. They comprise 42 bays, each of 7 ft 3 inches. The object of undersluices is to produce scour in the river during the floods by which the channel is prevented from silting up, particularly opposite the canal, clear of silt.

The Canal

The Canal head is located on the right bank almost adjacent to the undersluices. The channel has a bed width of 200 ft and is designed for a full supply depth of 10 ft. The regulating gates are worked with the help of travelling cranes. A little upstream of the canal head, is the Head Lock Channel. It is located at a safe distance up to which boats can approach the weir, during floods. The width of the lock channel is 20 ft. and it measures 150 ft between the gates. Except during floods or under other special circumstances, the lock gates remain open and the channel leading there from contributes its supply to the volume passing down the canal.

The alignment of the Lower Ganga Canal runs parallel to the river for about 16½ miles. The area to its left is almost khaddar, broken only by two headlands of Ramghat and Sankra, which jut out into the khaddar.

There are many deep scour holes in the canal bed, which are haunted by crocodiles, and draw many shikaris from far and near. In its head reaches, the canal does no irrigation. On the other hand, seepage drains have to be maintained practically throughout this reach, and the seepage water is lead across to the river through siphon culverts laid under the canal.

Nadrai Aqueduct

Lower down about 3 miles west of Kasganj town, the canal crosses Kali Nadi and catches up the watershed between Kali Nadi and Eastern rivers. At this site stands a magnificent cross-drainage work, called Nadrai Aqueduct, which has a history of its own.

The aqueduct is not only bigger than the famous Solani Aqueduct on the Upper Ganga Canal at Roorkee, but is one of the largest aqueducts in the world. It was indeed a bold design magnificently executed. Its elaborate cross-galleries and seepage exits, with many an inspection minaret, have been laid out artistically, which add to the beauty and grandeur of the massive structure. Though built in brick and lime only, it can stand eminent comparison with many a modern work.

Ram Ganga Dam

Below Nadrai, the canal enters its irrigational zone, which comprises the greater part of the lower districts of the doab. This triangular strip of country is about 300 miles in length. It is of varying width and is bounded on two sides by the Ganga and Yamuna rivers and measures over 10,000 square miles in area. For its irrigational service, the Lower Ganga Canal bifurcates into many branches and smaller distributaries and systems which aggregate to a chainage of over 4,200 miles. The culturable area commanded is well over 50 lakhs of acres.

CONCLUSION

The Lower Ganga Canal, as it stands today, is an asset of inestimable value. With it are linked the fortunes of millions of inhabitants of Uttar Pradesh. Narora, where it off-takes from the Ganga is, therefore, not only a beautiful place, but a place of pilgrimage in the right sense of the word. Here had, indeed, lived and labored many an unknown Karma-Yogi who, through concerted action and devoted service, brought about a phenomenal change in the economy of these regions and paved the way to unquestionable prosperity and progress.

(Source: Bhagirath July, 1956)



Central Water Commission

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