

Contents

- 16th meeting of the Investment Clearance Committee
- Joint Meeting with THDC regarding establishment of Real Time Flood Forecasting System in Alaknanda Basin in Uttarakhand
- 35th Annual General Meeting of the NWDA Society and 19th Meeting of the Special Committee for interlinking of Rivers
- BRICS water forum and BRICS Water Ministers meet
- Review of appraisal status of DPR of Ken Betwa Link Project
- Discussion on Saraswati Heritage Project
- WMO Workshop on Hydrological status & outlook system in GBM Basin
- Meeting to discuss the issues related to technical appraisal of DPR of Dagmara Hydroelectric Project (130.1 MW), Bihar
- Meeting regarding preparation of concept paper on sub-themes under the theme "Water Security" for Conference with States
- International Water Security & Climate Change Conference
- IMCT Visit of Andhra Pradesh
- 92nd Yamuna Standing Committee Meeting
- DRIP
- Pending issue related to lining of RMC in Bihar portion North Koel Reservoir Project
- Flood Situation in the Country
- Meeting regarding issue of average energy rate for sale of power to be adopted for cost apportionment in r/o Kishau MPP
- DPR for Erosion Protection Works at Chitrakoot Dham, District Satna(MP)
- Mass Awareness Programs Conducted by NWA, CWC, Pune
- History- Giant Project for Gujarat - UKAI DAM



R. K. Sinha
Chairman

Message

Under India's BRICS Chairmanship 2021, the BRICS Water Forum was organized by the Ministry of Jal Shakti in coordination with the Ministry of External Affairs in the hybrid mode at New Delhi during 16-17th November 2021. The BRICS Water Forum provided a wonderful platform to the presenters and other participants from the 5 countries to show case their progress and prowess in-line with the sub-themes of the event and also in the light of the Sustainable Development Goals. After detailed deliberations with BRICS member countries, the draft joint declaration was finalized on 17.11.2021. The BRICS Water Forum was followed by the first BRICS Water Ministers' Meet on 18.11.2021. The Joint Declaration was adopted during the meet showing utmost mutual trust and future cooperation intent while committing to future co-operation to address the water woes of all nations involved. Hon'ble Minister for Jal Shakti, Shri Gajendra Singh Shekhawat, in his address, affirmed that India looks forward to working with the member countries under the BRICS Water Forum and international community by sharing knowledge and information about a multitude of successful case studies and

best practices in the water sector. He also felt that everyone can profit from this noble initiative which champions mutual learning.

Representatives of BRICS member countries congratulated and commended India's initiative in organizing two day BRICS Water Forum and finalizing the Joint Declaration preceding the First Water Ministers' Meet. They all stressed that cooperation amongst the BRICS countries is the need of the hour for solving the common problem being faced in the water sector. CWC provided full support in making it a successful event.

The 16th meeting of Investment Clearance Committee for Major & Medium Irrigation, Flood Control and Multipurpose Projects was held on 02.11.2021 under the Chairmanship of Secretary, DoWR, RD & GR, MoJS. Total two projects were recommended by this committee including the Revised Cost Estimate (RCE) of Lakhwar Multipurpose Project in Uttarakhand. This project is one of the 16 declared National Projects envisaging irrigation benefit of around 33780 ha and 300 MW power generation.

Senior officers of CWC reviewed the various ongoing and proposed projects such as Saraswati Heritage Project, Ken-Betwa Link Project (KBLP), Dagmara Hydroelectric Project, Kishau Multipurpose Project, North Koel Project, Erosion Protection Works at Chitrakoot Dham (MP) etc.

On 26.11.2021, the constitution day was celebrated at CWC HQ along with Regional offices of CWC. The officials took pledge along with Hon'ble President of India in virtual mode.



#IndiaFightsCorona

Follow Covid
Appropriate Behaviour

**STAY UPDATED
WITH THE LATEST
INFORMATION**

Know More

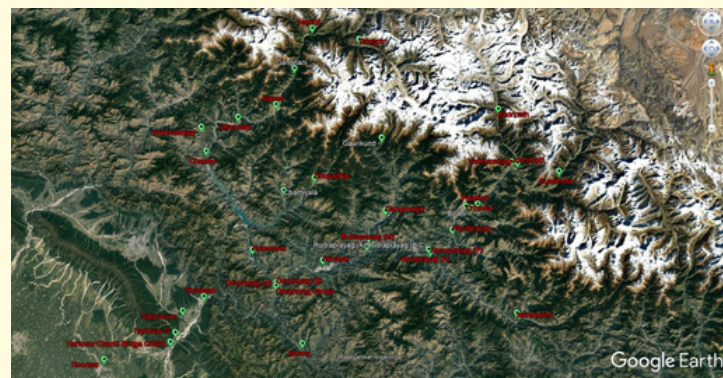
16th meeting of the Investment Clearance Committee

The 16th meeting of Investment Clearance Committee of DoWR, RD & GR, Ministry of Jal Shakti for Major & Medium Irrigation, Flood Control and Multipurpose Projects was held on 02.11.2021 through video conferencing under the Chairmanship of Secretary, DoWR, RD&GR, MoJS. The meeting was attended by the representatives from Govt. of Uttarakhand and Assam besides CWC and Upper Yamuna River Board (UYRB). Total two projects were considered by the Committee and recommended for Investment Clearance. The details of the projects are given in the table.

Sl. No.	Name of the Project	State	Category	Cost in Rs crore & Price Level	Benefits	Remarks
1	Revised Cost Estimate (RCE) of the Lakhwar Multipurpose Project, Uttarakhand (National Project)	Uttarakhand	Irrigation, Major	5747.17 (July,2018)	CCA: 33780 ha; Power- 300 MW	Accepted in 141 st meeting of TAC
2	Extension, Renovation and Modernization (ERM) of Sukla Irrigation Project, Bodoland Territorial Council, Assam	Assam	Irrigation, Major	259.73 (Oct,2020)	CCA-12150 ha	Accepted in 147 th meeting of TAC

Joint Meeting with THDC regarding establishment of Real Time Flood Forecasting System in Alaknanda Basin in Uttarakhand

A meeting of THDC and CWC officials was held on 16.11.2021 under Chairman, CWC to understand the HO and forecasting network of THDC in Bhagirathi sub-basin and of CWC in Bhagirathi and Alaknanda sub-basins in Uttarakhand. It was decided that THDC and CWC will mutually share their data in real time for better flood forecasting in the state of Uttarakhand. A MoU will be signed for this among THDC, CWC and NWIC.



35th Annual General Meeting of the NWDA Society and 19th Meeting of the Special Committee for interlinking of Rivers

The 35th meeting of the Annual General Body of National Water Development Agency (NWDA) and the 19th meeting of the Special Committee for Interlinking of Rivers was held on 12.11.2021 at Vigyan Bhawan, New Delhi under the Chairmanship of Shri Gajendra Singh Shekhawat, Hon'ble Minister for Jal Shakti. Some of the participants attended the meeting through the VC link also. The Annual Report and Audited Accounts for the year 2019-20 were approved by the Society. The budget estimate and actual expenditure during the year 2020-21 and 2021-22 up to October 2021 were detailed in the meeting. The present status of DPRs, FRs, and PFRs for Inter-State and Intra State link projects were informed to the members of the Society.



Director-General, NWDA briefed about the status of priority links viz; Ken – Betwa link, Damanganga-Pinjal link, Par-Tapi-Narmada link, Godavari- Cauvery link and other links like Kosi-Mechi Intra State link and Cauvery-Vaigai- Gundar link project, whose DPRs have been completed. He listed the activities to be undertaken for Ken – Betwa link project as post- DPR activities.

DG, NWDA gave a background for the constitution of National Interlinking of Rivers Authority (NIRA) and apprised the participants that based on deliberations during the last meeting of Task Force for Interlinking of

River (TFILR), a structure of NIRA is proposed and he explained in details about the structure, its broad mandates and functions and proposal of subsuming NWDA into NIRA and manpower requirement and composition of Committees in NIRA.

DG, NWDA informed that the 7th India Water Week has been postponed to November 2022 and its curtain-raiser function will be held shortly. He also briefed about the BRICS Water Ministers' Meeting and BRICS Water Forum, to be held during 16-18th, November 2021 at Sushma Swaraj Bhawan, New Delhi.

BRICS water forum and BRICS Water Ministers meet

Under India's BRICS Chairmanship 2021, the BRICS Water Forum was organized by the Ministry of Jal Shakti in coordination with the Ministry of External Affairs in the hybrid mode at Sushma Swaraj Bhawan, New Delhi during 16-17th November 2021. During the BRICS Water Forum, the representatives from the 5 BRICS nations submitted and presented Country Papers on the sub-themes. Session for sub-theme "Addressing the Water, Food and Energy security" was chaired by Chairman, CWC and Co-chaired by Member (WP&P), CWC. A Country Paper on this sub-theme was presented by Director (BP-I), CWC from Indian side.

The meeting of BRICS Negotiation Committee for finalizing the draft Joint Declaration was held under the chairmanship of Shri Kushvinder Vohra, Member (WP&P), CWC. After detailed deliberations with BRICS member countries, the draft joint declaration was finalized on 17.11.2021.

The BRICS Water Forum was followed by the first BRICS Water Ministers' Meet on 18.11.2021. The Joint Declaration was adopted during the meet showing utmost mutual trust and future cooperation intent while committing to future co-operation to address the water woes of all nations involved.



Shri Gajendra Singh Shekhawat, Hon'ble Minister for Jal Shakti, in his address, affirmed that India looks forward to working with the member countries under the BRICS Water Forum and international community by sharing knowledge and information about a multitude of successful case studies and best practices in the water sector. He also felt that everyone can profit from this noble initiative which champions mutual learning. Ministers of other participating countries congratulated and commended India's initiative in organizing two day BRICS Water Forum and finalizing the Joint Declaration preceding the First Water Ministers' Meet. They all stressed that cooperation amongst the BRICS countries is the need of the hour for solving the common problem being faced in the water sector.

Review of appraisal status of DPR of Ken Betwa Link Project

In continuation to earlier meetings, a series of meetings to assess the status of appraisal of Projects of Ken-Betwa Link Project (KBLP), Phase-II were held on 02.11.2021, 11.11.2021 and 24.11.2021 under the chairmanship of Shri Kushvinder Vohra, Member (Water Planning and Projects), CWC. KBLP (Phase-II) consist of three projects, namely Kotha Barrage Project, Bina Complex Project and Lower Orr Project. Officials from National Water Development Agency (NWDA), Officials from Water Resource Department of Madhya Pradesh and Central Water Commission attended the meeting.

In the meeting, it was informed that most of the aspects of KBLP, Phase-II have been cleared except Irrigation Planning and Cost in respect of Lower Orr Dam Project. The Cost in respect of Kotha Barrage and Bina Complex was firmed up by CWC but after the request of Project



Authority for consideration of essential structures, same has been considered for revision. The aspects pending for above clearances including fixation of B. C. Ratio of all three Projects of Ken Betwa Link, Phase-II were deliberated. Member (WP&P), CWC directed that all the issues related to clearances, B.C. ratio etc. pending with aforesaid three projects of KBLP (Phase-II) must be settled and finalized as soon as possible.

Review of National Projects

A meeting to review National Projects (NP) and rationalization of the list of NP was held on 11.11.2021 under the Chairmanship of Secretary, DoWR, RD & GR, MoJS. Officials from DoWR, RD & GR, MoJS and CWC attended the meeting. During the meeting, detailed discussions were held on the progress and issues/bottlenecks pertaining to the National Projects.

Further, a meeting to review National Projects (NP) by Hon'ble Minister of Jal Shakti was held on 16.11.2021. Officials from DoWR, RD & GR, MoJS and Central Water Commission attended the meeting. During the meeting, a PowerPoint Presentation was delivered by Director (NP), CWC regarding progress and issues/bottlenecks pertaining to National Projects.

Presentation on draft National Framework for Sediment Management

A PowerPoint presentation was made before the Hon'ble Minister of Jal Shakti on 10.11.2021 on draft "National Framework for Sediment Management". After detailed discussion, it was decided that the aforesaid draft

document may be circulated to all the State Governments/Union Territories and the concerned Central Government Organizations for inputs/comments.

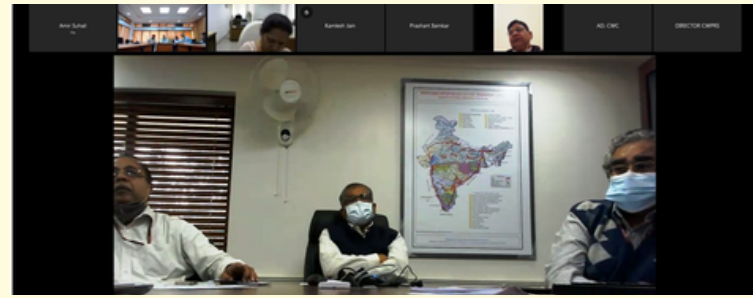
Discussion on Saraswati Heritage Project

A meeting (in virtual mode) was held on 15.11.2021 under the Chairmanship of Chairman, CWC to discuss the status and progress of the various issues related to Data/investigation/MoU/NoC necessary for the tender drawings of the Adi Badri Dam, Adi Badri Barrage and Saraswati Reservoir. The meeting was attended by Principal Secretary, Irrigation & Water Resources Department, Govt. of Haryana, Member (D&R)-CWC, Chairman-Haryana Saraswati Heritage Development Board, Commissioner-SPR, DoWR, RD&GR, Director-CSMRS & CWPRS and senior officers from CWC.

A meeting (in virtual mode) was held on 15.11.2021 under the Chairmanship of Chairman, Central Water Commission (CWC) to discuss the status and progress of

Meeting to review the progress of scheme "Comprehensive Plan for Flood Management Works on River Jhelum-Phase-I".

Chairman, CWC directed Chief Engineer, I&FC Kashmir to speed up the balance work of the project considering the limited working season available before the snowfall in Valley. He also asked that the current/completion status



the various issues related to Data/investigation/MoU/NoC necessary for the tender drawings of the AdiBadri Dam, Adi Badri Barrage and Saraswati Reservoir. Meeting was attended by Principal Secretary, Irrigation & Water Resources Department, Govt. of Haryana, Member (D&R)-CWC, Chairman-Haryana Saraswati Heritage Development

Meeting on Mathematical Modelling of River Brahmaputra with Emphasis on Climate Change

Member(RM), CWC chaired the meeting on Mathematical Model of Brahmaputra River, the R&D Project of Brahmaputra Board under development by IIT-Guwahati. Officers from CWC, CWPRS, IIT-Roorkee, NEHARI etc were present during the online meeting held

of 11 nos. of schemes for which complete central assistance has already been released may be provided and to submit the CA proposals with all necessary documents for the ongoing schemes at the earliest.

on 18.11.2021. IIT Guwahati (IIT-G) presented a PowerPoint presentation on the project – "Mathematical Model study of River Brahmaputra with emphasis on climate change" which is a collaborative project between the Brahmaputra Board and IIT Guwahati (IIT-G).

WMO Workshop on Hydrological status & outlook system in GBM Basin

Chairman CWC, along with Director, FFM and two other CWC officials participated in the two day workshop on WMO project named Hydro SOS (Hydrological Status and Outlook System) for Ganga- Brahmaputra-Meghna Basin. The workshop was organized by IMD. Other participants included representatives of WMO, Nepal, Bhutan, and Bangladesh. Director, FFM, CWC presented CWC flood forecasting setup with the participating co-basin countries.



Meeting to discuss the issues related to technical appraisal of DPR of DagmaraHydro electric Project (130.1 MW), Bihar

The Chairman, CWC chaired a meeting (in virtual mode) on 25.11.2021 to discuss the issues related to technical appraisal of Detailed Project Report of Dagmara Hydroelectric Project (130.1 MW), Bihar. Issues related to Freeboard, Bearing capacity, Liquefaction, reduction in available head at tail race outfall were discussed during the meeting.

The virtual meeting was attended by Secretary (Energy), Government of Bihar, Member(D&R) - CWC, CMD - NHPC Ltd, MD - BHPC Ltd, Chief Engineer, Design (N&W), CWC, Engineer-in-Chief (HQ), WRD, Government of Bihar and senior officers from CEA, CWC, NHPC and WRD, Government of Bihar.

Meeting regarding preparation of concept paper on sub-themes under the theme “Water Security” for Conference with States

A meeting was held under the chairmanship of Secretary, DoWR, RD&GR to discuss matter related to Agreed Action Points finalised by Cabinet Secretariat on preparation for the proposed "Conference with States". During the meeting, presentations were made on the sub-theme “Water Use Efficiency”, “River Conservation and Rejuvenation” and “Water Conservation” by the Conveners of each sub-theme separately.

After detailed discussion following decisions were taken:

1. List of States to be consulted will be finalised by Additional Secretary (DoWR, RD&GR) and shared with

the sub-groups.

2. All sub-groups may revise their concept notes considering the observations made during the meeting.

3. A common meeting of all experts and representatives of Central Ministries identified by the three sub-groups may be held for deliberation on the concept notes prepared by the sub-groups and to identify Way Forward.

4. Meeting with State Representatives would be held for deliberation and finalisation of the concept note.

International Water Security & Climate Change Conference

Shri Kushvinder Vohra, Member (WP&P), CWC was invited as keynote speaker during the International Water Security & Climate Change Conference organized by Global Counter Terrorism Council (GCTC) in association with the Ministry of Jal Shakti during 15th-17th November 2021. The conference saw several national and international speakers talking on various water-related aspects such as Water Security & Climate Change, Water-Food-Energy-Climate Nexus, Inter-State River conflicts, River Rejuvenation, Sustainable Water Management, Water Governance, Impact of Climate Change, etc. Shri K. Vohra made a presentation titled “Water Demand and Management: Strategies, Policies & Initiatives” during the conference on 16th November.

The presentation highlighted the issues related to water availability in India, increasing demands of water with the increasing population, low efficiency of water use in agriculture, low levels of land and water productivity, etc. It focussed on the need for supply and demand-side



management of water resources to meet the future water demands and presented various initiatives already undertaken by Govt. of India and some of the States such as the use of Piped Distribution Network, Canal Automation, Micro Irrigation, Mission Kakatiya (Telangana), Jalyukt Shivar Abhiyan (Maharashtra), Management Approach (Madhya Pradesh), etc. The presentation also shared success stories on Participatory Irrigation Management from Ralegan Siddhi and Hiware Bazaar (Maharashtra).

IMCT Visit of Andhra Pradesh

Various Inter-Ministerial Central Teams (IMCTs) are constituted by the Ministry of Home Affairs (MHA) for on-the-spot assessment of the situation in the wake of the floods/landslides damages in irrigation, drinking water, embankment and flood control structures due to monsoon season. CWC Officers are nominated to represent DoWR, RD&GR, Ministry of Jal Shakti in these IMCTs.

During November, 2021, IMCT visited flood affected state of Andhra Pradesh. They had meetings with District Officials and visited the affected districts for assessing the damage. Shri Srinivasu Bairy, Superintending Engineer, Krishna & Coordination Circle, CWC, Hyderabad was part of the Team and visited



Chittoor, YSR Kadapa, SPSR Nellore and Vijayawada District.

92nd Yamuna Standing Committee Meeting

The 92nd meeting of Yamuna Standing Committee (YSC) was held on 18.11.2021 under the Chairmanship of Member (RM), CWC to discuss the No Objection Certificate for "Nav Bharat Udyan – a part of Amrut Bio-Diversity Park " Project at village Indraprasth near Pragati maidan, New Delhi.

In the meeting, the following points emerged:

- Project authority shall share the Model study report to Hydrology(N) Dte., CWC, New Delhi and I&FC Department, Delhi.
- Outcome of earlier done CWPRS, Pune model study needs to be attached with the project and a comparison table should be prepared considering the outcome of both studies.
- Further, all data viz. Gauge, discharge, sediment available with CWC site i.e. Old Railway bridge should be appropriately utilized in the model study.
- As suggested by DrNayan Sharma, NIH Physical Modelling Consultant, the crest level may be raised by a further 0.5 m to tackle uncertainties. Thus, the crest level needs to be raised by 0.6 m in total considering 1.8 m freeboard and may be fixed at 208.9 m instead of the existing level of 208.3 m.
- design and cost estimate of the second sluice gate at the exit point of project abutting to the existing culvert

shall be included in the DPR and shall be constructed by CPWD as per the vetted design approved by the Competent Authority

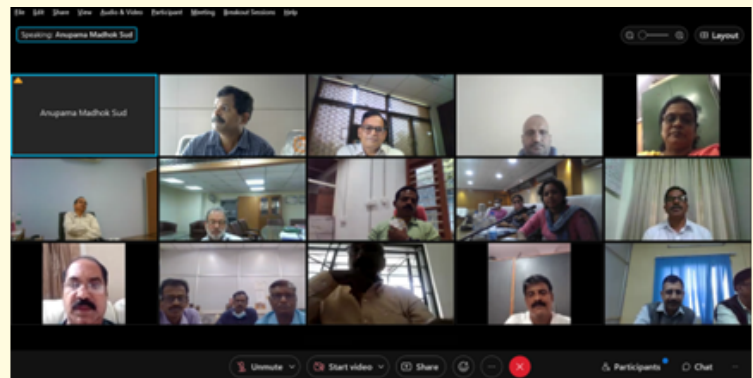
- It is stated that riverside embankment protection has already been done by I&FCD, Govt. of NCT Delhi. It may be ensured that protection works in form of pitching and launching apron are provided as per design discharge, velocity and provision of relevant BIS code 14262:1995.
- Copy of the Supreme Court order in Civil Appeal Nos. 4866-67/2009 dated July'2009, DDA Vs. Rajinder Singh & others relating to CWG Village, may be attached in the report.
- Project authority may approach again Principle Committee of NGT along with model study report, 1 in 25-year flood plain zone demarcation, existing Court orders and directions etc. for its views/observation on the project.
- No representative was present in the meeting from U.P. Irrigation, Okhla, Govt. of U.P., GFCC, Patna, Director General (Road wing), Ministry of Shipping. It is advised that all members of the Committee should attend all the upcoming meetings of YSC.

After compliance with the above-stated views/observations, CPWD may approach YSC again for a discussion on the project.

DRIP

Training cum Workshop on "Financial Management" under externally aided Scheme DRIP Phase II

Training Cum Workshop on Financial Management was organised by Central Project Management Unit (CPMU) for DRIP Phase II Implementing Agencies on 01.11.2021. CPMU deliberated upon various topics of "Financial Management" inter alia Booking of Expenditure, Preparation of IUFR, Maintenance of Physical and Financial Status, Inspection of existing Cash Book and methods of reporting etc. The workshop saw an active participation of almost 200 participants from various states.



Training on Operation and Maintenance aspects regarding Hydro-Mechanical and Control System Issues in Dams

Training on "Operation and Maintenance aspects regarding Hydro-Mechanical and Control System Issues in Dams" was organized by CPMU in collaboration with Hydro Exploitation SA, Switzerland during 22nd – 26th November 2021 at New Delhi. The training comprised of lectures, hands on trainings, case studies, field visit to Narora barrage of Uttar Pradesh and interactive sessions. The training was attended by officials from CWC, World Bank, State of Rajasthan, Karnataka, Manipur and Meghalaya.



Inspection of Hydraulic Model of Maneri dam at IRI, Roorkee

CPMU officials carried out an inspection visit on 18.11.2021 at Irrigation Research Institute (IRI), Roorkee to inspect the hydraulic model of Maneri dam, UJVNL developed by IRI and to discuss its model study report along with the officials from Uttarakhand Jal Vidyut Nigam Ltd.(UJVNL). During the inspection, certain modifications were suggested to carry out the model study.



Pending issue related to lining of RMC in Bihar portion North Koel Reservoir Project

A meeting was held on 22.11.2021 under the chairmanship of Shri Kushvinder Vohra, Member (WP&P), CWC to review pending issues related to 'Lining of RMC in Bihar portion under North Koel Project (Bihar & Jharkhand)' through video conferencing.

The meeting was attended by officials from Water Resource Dept. of Govt. of Bihar, CWC, D/o WR, RD & GR and WAPCOS.

In the meeting, deliberations were held on the outcome of the simulation study undertaken by WAPCOS for

different scenarios of the partial lining of RMC in the Bihar portion, highlighting up to which point water will be available in Bihar and the extent of irrigation benefits that can be achieved along the various reaches of the RMC in Bihar portion. The officials of the Water Resource Dept. of Govt. of Bihar were requested to take up the matter with their higher officials, bringing out the resulting loss of annual irrigation that will occur under the scenario of partial lining vis-a-vis the complete lining and convey the decision of Govt. of Bihar thereon at the earliest.

Flood Situation in the Country

Regular Flood Forecasting Activity by CWC commenced on 01.05.2021 in Brahmaputra & Barak and Jhelum basins. During the period from 1st May to 30th November 2021, 10479 flood forecasts (6662 Level and 3817 Inflow) were issued, out of which 9866 (6448 Level and 3418 Inflow) forecasts were within the limit of accuracy with a percentage accuracy of 94.15%. 113 nos. of Orange Bulletin (for Severe Flood Situation) and 101 number of Red Bulletin for Extreme Flood Situation were issued in November from Central Flood Control Room.

Summary of Flood Situation during 01.05.2021 to 31.11.2021

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.		Siddharthnagar	Rapti	Bansi	02/09/2021	04/09/2021
6.	Odisha	Balasore	Subarnarekha	Mathani Road 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, Rajasthan, NCT Delhi, Andhra Pradesh, Kerala, Telangana and Jharkhand.

Above Normal Flood Situation

41 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.



Meeting regarding issue of average energy rate for sale of power to be adopted for cost apportionment in r/o Kishau MPP

A virtual meeting was held on 09.11.2021 under the Chairmanship of Chairman, Upper Yamuna River Board & Member (WP&P), CWC with Managing Director of Kishau Corporation Limited (KCL) and concerned Chief Engineers of CWC & CEA. During the meeting, various issues were discussed for finalization of Draft Agreement on Kishau

Multi-Purpose Project for signing among the co-basin States. Himachal Pradesh and Uttarakhand raised the issue of freezing the average energy rate of Rs 2.30/kWh to be considered for apportionment of cost of the project. The same was discussed in detail during the meeting.

Financial Progress of Schemes

(Amount in Crore ₹ and rounded off)

Sl. No.	Scheme/Component Name	BE 2021-22	Expenditure	Expenditure (in %)
1.	Development of Water Resources information System (DWRIS)	175.00	85.425	48.81
2.	Investigation of Water Resources Development Schemes (IWRD)	12.00	4.299	35.82
3.	Flood Management & Border Areas Programme (FMBAP)	27.32	5.420	19.84
4.	Infrastructure Development (ID) Schemes	4.50	2.853	63.39
5.	National Hydrology Project	23.905	5.326	22.28
6.	Dam Rehabilitation and Improvement Project	25.00	9.00	36.00

DPR for Erosion Protection Works at Chitrakoot Dham, District Satna(MP)

A meeting on DPR for Erosion Protection Works at Chitrakoot Dham, District Satna (MP) was taken by Chief Engineer (FMO), CWC through video conferencing on 23.11.2021. The summary of the discussion is as under.

- State Govt. will modify the design as per views expressed by Member (D&R), CWC within a week.
- State Govt. will attach all required statutory clearances, clear index map, duly vetted damages as stated by Director, FM-I, CWC in the modified DPR within one week.
- Thereafter, modified DPR should be submitted by 30.11.2021 so that the cost aspect may be finalized in CWC

Meeting regarding Krishna Water Dispute and Upper Krishna-Phase I (Almatti Dam)

A meeting was taken by the Secretary, DoWR, RD& GR on 28.11.2021 through video conferencing regarding Krishna Water Disputes Tribunal and Upper Krishna

Project (Almatti Dam). The meeting was attended by the Additional Secretary, DoWR, RD & GR; Advisor, DoWR, RD&GR; Joint Secretary (RD & PP), DoWR, RD&GR; Member (WP&P), CWC and Director, ISM-1 Dte., CWC.

Technical Session of 5th World Congress on Disaster Management on the Topic: Living with Floods: Case studies in flood risk management at IIT Delhi Campus

Chairman, CWC co-chaired the Technical Session of 5th World Congress on Disaster Management on the Topic:

Living with Floods: Case studies in flood risk management at IIT Delhi Campus.



https://pledge.mygov.in/catch-the-rain/?fbclid=IwAR2ZP63tkALe3eu-p9woMUyVMTh5TRW9WDAQgrp51GcqH4aE_OZgPihBdZg

Mass Awareness Programs Conducted by NWA, CWC, Pune

As per the directions of the Hon'ble Union Minister, Ministry of Jal Shakti, it was emphasized that awareness on overall water Resources scenario as well as its conservation and management should reach to the grass root level. Hon'ble Minister suggested that, NWA should conduct Mass Awareness Program on "Water Conservation and Management" for the Zilla Parishad, Block Level and Panchayat Officials etc. and such Programs could be conducted in vernacular also. NWA, Pune in association with WALMI, Odisha is conducting Training-cum-Webinar on "Water Conservation and Management" covering the 10 Agroclimatic Zones of

Odisha through 10 programmes planned to be conducted for each agroclimatic zone.

The content, coverage and faculty for programs were identified in consultation with WALMI, Odisha. The programs are being conducted in the on-line mode using CISCO WEBEX Platform. As a part of this on-going series of Training-cum-Webinar on Water Conservation and Management in association with WALMI, Odisha, the following three programs were completed during the month of November 2021 and remaining seven are planned in subsequent months.

Sl. No.	Topic	Duration	No. of Participants
1	Training -cum-Webinar on "Water Conservation and Management" in association with WALMI, Odisha - Program 1 (Covering districts of North Western Plateau Agro-climatic Zone)	11-12th Nov 2021	267
2	Training -cum-Webinar on "Water Conservation and Management" in association with WALMI, Odisha - Program 2 (Covering districts of North Central Plateau Agro-climatic Zone)	17-18th Nov 2021	267
3	Training -cum-Webinar on "Water Conservation and Management" in association with WALMI, Odisha - Program 3 (Covering districts of North Eastern Plateau Agro-climatic Zone)	25-26th Nov 2021	269

Data Corner

The Government has cleared eight hydro-electric projects in Indus basin, out of which seven projects are

in UT of Ladakh and one in UT of J&K as detailed below:

S No	Name	Location	Capacity (MW)	Estimated Cost (Rs, Crore)	Estimated Time of Completion (Months)
1.	DurbakShyok	Ladakh	19.00	272.03	30
2.	Sankoo	Ladakh	18.50	260.41	30
3.	Nimmu Chilling	Ladakh	24.00	522.53	54
4.	Rongdo	Ladakh	12.00	123.70	48
5.	MangdumSangra	Ladakh	19.00	254.16	30
6.	KargilHunderman	Ladakh	25.00	489.30	36
7.	Tamasha	Ladakh	12.00	147.89	48
8.	Ratan Nag	J&K	10.50	315.73	48

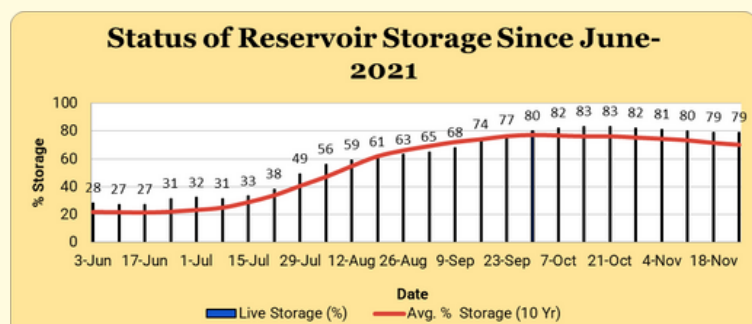
Note: The aforesaid seven projects in Ladakh (SI No 1 – 7) are hydroelectric projects with no irrigation benefits. Ratan Nag project (SI No 8) has provision of irrigation to benefit areas in Kishtwar District of UT of J&K.

(Source: PIB Release-29.11.2021)

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 25.11.2021, the total live storage available in these reservoirs is 136.744 BCM which is 79% of total live storage capacity of these reservoirs. However, last year the total live storage available in these reservoirs for the



corresponding period was 141.863 BCM and the average of last 10 years live storage was 121.078 BCM. Thus, the live storage available in 133 reservoirs as per the bulletin dated 25.11.2021 is 96% of the live storage of corresponding period of last year and 113% of storage of average of last ten years.

History- Giant Project for Gujarat – UKAI DAM

Before reaching this stage the project had to face a number of ups and downs. The dam at Ukai constitutes the terminal reservoir on the Tapi, about 116 km upstream of Surat. The river drains a total catchment of 62225 sqkm at the dam site. While an average annual flows of nearly 1.73 million ha m poured unused into the sea before the construction of the lower river basin.

The need for harnessing the Tapi waters was therefore keenly felt and the then Central Water, Power, Irrigation and Navigation Commission (CWINC) took up investigation in 1946-47 and framed proposals for projects on the river at the request of the erstwhile Bombay State and the Central Provinces and Bearar. Subsequently on ad-hoc committee of experts appointed by the Government of India in 1948 under the Chairmanship of Shri A.N. Khosla recommended that the lower Tapi basin should be developed first. Initially a large storage dam was planned at Kakrapar, about 80 km upstream of Surat. It was, however, dropped on grounds of economic and only a pick-up weir at Kakrapar with canal systems to irrigate 227430 ha of land was adopted and completed.

Investigations for a suitable storage site upstream were continued and ultimately the Central Water & Power Commission (CWPC which was created after merging of CWINC and other organizations) selected Ukai out of five alternative sites and formulated detailed proposals for a project in 1955. The proposals were under discussion

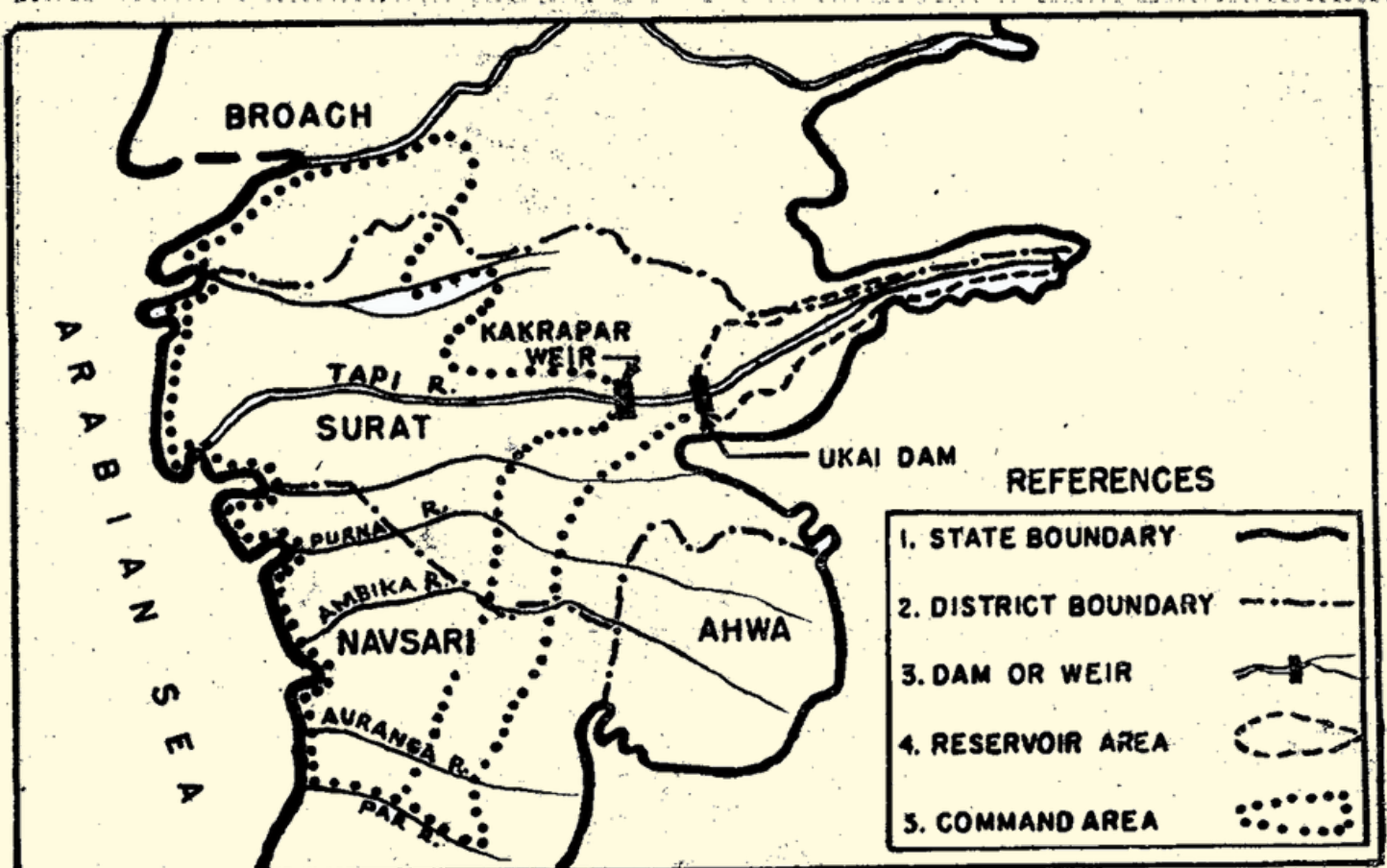
between the CWPC and the Planning Commission when the question of deciding the scope of the project and sharing of waters amongst different regions came up for consideration. For this purpose the Government of India appointed a high level technical committee headed by Shri Thirumale Iyenger in 1957. The Committee recommended that the reservoir should be up to the level already proposed by the CWPC in 1955 and a quantum of 0.74 million ha m of the river yield should be reserved for regions upstream of Ukai.

The work was started in a small way when the proposals of bifurcation of the Bombay State raised the question of submergence of areas in Khandesh. The then Revenue Secretary of the Bombay State suggested that the entire area of submergence along with a 3.2 km wide strip all-round should be transferred to the new Gujarat State to avoid difficulties of land acquisition, rehabilitation, etc. This was accepted and bifurcation took place accordingly.

Subsequently the recommendations of the High level Technical Committee were accepted and the project was cleared by the Planning Commission in 1961.

Shaping the Project

The cleared project envisaged construction of an earth-cum-concrete dam to hold the reservoir at 345 m above sea level, with spillways and under sluices adequate to discharge 33980 cum and a power house at the foot of the dam with an installed capacity of 160 MW. The concrete dam was to extend partly into the river channel, with the remaining part of the river covered by



the earthen dam.

The intensive explorations carried out after the formation of Gujarat State revealed that foundation rock in the river bed was dipping very low while on the left terrace good foundation would be available at about 20 m higher up. On the right bank, a highly sheared and fractured zone was met with even 50m below ground level. The hydrology of the river was also reviewed in the light of the 1959 floods and it was decided to plan the works for a standard project flood of 494689 cum and a maximum probable flood of 59883 cum.

Project Features

Masonry Dam

The masonry portion of the dam is about 900 m long across the river, its maximum height above foundations being about 66 m. It involved placement of 1.49 MCM of masonry, which in terms of quantity, is next only to that for Nagarjuna sagar Dam in Andhra Pradesh on the Krishna.

Spillway

The 425.5 m long spillway, with 22 spans of 15.54 m each, was designed to let down a flood of 49500 m. Twenty-two radial gates of 15.54 m x 14.78 m designed for this project was the largest of their type in India.

Power Dam

The Power Dam at Ukai consists of four blocks, each 23.01 m long. Four penstocks of 7.01 m dia were provided in the dam. The penstocks were fabricated at site with steel plates rolled indigenously.

Main Power House

Four Kaplan type turbines with adjustable blades, each rated 105000 MHP at a design head of 47.8 m and a speed of 150 rpm were provided. All the units were procured through Heavy Electricals (India) Ltd., Bhopal. The work on the power plants was done by the State Electricity Board, while the dam was constructed by the State Public Works Department.

Canal Head Regulator and Power House

At the extreme left end, there is a small masonry dam, 33.53 m high, through which two outlets of 2.13 m x 2.74 m each release 33.41 cum into the Left Bank Canal. A small power house was also planned for the future on the Canal.

Earth Dam

Ukai was the largest earth dam in India, containing as it does a third as much more earth than the Hirakud Dam on the Mahanadi in Odisha, the longest dam of its kind in

the world. It is about 4 km long and is 69 m high above the lowest river bed level. It involved controlled placement of about 23.5 MCM of earth, besides six MCM of other miscellaneous earthwork.

Hence 90% of the earthwork was carried out departmentally with earthmoving machinery, costing about Rs. 14 crore. The remaining work was split up and entrusted to contractors.

Benefits

The Ukai Reservoir had a gross storage of 8511 MCM and a live storage of 7092.5 MCM which is nearly as large as that of Bhakra. It firm up irrigation in 227530 ha under the Kakrapar command and provide additional irrigation facilities to 152400 ha under direct command. Four turbine units of 72 MW each are installed in the river bed power house. The hydropower generated feed the existing power grid of the State. This ease the present power shortage, help electrification of villages, and industrial development of the State as a whole.

The reservoir also provides effective flood protection to 827 sqkm of the area lower down including Surat city. It helped reclamation of about 16187 ha of coastal salines along with fishery development in the reservoir. The cost of the Ukai project when completed was about Rs. 108 crore.

With the completion of the Ukai Dam on the Tapi, Gujarat's first multipurpose reservoir took shape. Its construction has been a Herculean task in the face of numerous and intricate problems, further aggravated by heavy floods in the river. Ukai is now a landmark both in the annals of engineering and the economic march of Gujarat towards higher achievements in agriculture as well as in industry.

UKAI PROJECT (Features at a Glance)

LOCATION	A dam across the river Tapi near village Ukai in Songadh Taluka of Surat District of Gujarat State.	
DAM	Type	Composite
	Length	Masonry 900m Earthen 4028.34 m
	Height	68.6 m Above river bed
QUANTITY	Earthwork	23.24 MCM
	Concrete	0.18 MCM
	Masonry	1.49 MCM
RESERVOIR	Gross Storage	8511 MCM
	Live Storage	7092.51 MCM
CANALS	Length	949 km
BENEFITS	Irrigation	379830 ha
	Power	4 units of 75 MW each
COST	Rs. 108 crore	



Central Water Commission

An attached office of Dept. of Water Resources,
River Development and Ganga Rejuvenation,
Ministry of Jal Shakti, Govt. of India

Editorial Board

- Dr. Samir Chatterjee, CE(HRM)- Editor-in-Chief
- Shri Amrendra Kumar Singh, CE(EMO)- Member
- Shri Yogesh Paithankar, CE(PMO)- Member
- Shri Deepak Kumar, Director(RMC)- Member
- Shri S. K. Rajan, Director(TC)- Member

Designed & Published by

Water Systems Engineering Directorate
Central Water Commission

- Shri Bhupinder Singh, Director(WP&P-C)- Member
- Shri S. K. Jha, Director(WSE)- Member
- Shri A. K. Madhok, DD(WSE)- Member
- Shri R. K. Sharma, DD(D&R-Coordination)- Member
- Shri Shiv Sunder Singh, DD(WSE)- Member-Secretary

2nd Floor(South), Sewa Bhawan, R K Puram, New Delhi-110 066
E-mail: media-cwc@gov.in

