



R.K. Jain  
Chairman

### Message

As per Indus Waters Treaty 1960, India is entitled for full utilization of water of Eastern Rivers of Indus system (Ravi, Beas and Sutlej). Some big projects are already constructed on these rivers viz. Bhakra Nangal, Pong, Ranjeet Sagar etc. Shahpurkandi Dam project on Ravi river is under construction and another project namely Ujh Multi-Purpose Project has been accepted by the Advisory Committee of the Department of WR, RD & GR with enhanced utilization. 2nd Ravi Beas link project is also under planning stage. There is need to assess the water yield in Eastern rivers of Indus system (Ravi, Beas and Sutlej) up to border and present utilization through the existing system and plan to utilize all the waters of these rivers to which India is entitled. In furtherance to above, a Committee has been constituted under the chairmanship of Member (D&R), CWC, for preparation of plan for optimal utilization of water of Eastern Rivers of Indus Basin. 1st meeting of the Committee was held on 05.05.2020.

The Advisory Committee of DoWR, RD&GR during its 145th meeting held on 26.05.2020 through Video Conferencing accepted 13 Flood Management projects pertaining to States of Bihar, Uttar Pradesh and Himachal Pradesh. These projects would protect about 4.48 lakh ha area and provide benefit to about 93 lakh population.

The second meeting of the Committee constituted for formulation of strategy for Flood Management Works in entire country and River Management Activities related to Border Areas during 2020-23 was held under the chairmanship of Dr. Rajiv Kumar, Vice Chairman, NITI Aayog on 27.05.2020. Along with other participants, a presentation was made by Central Water Commission on non-structural measures for flood mitigation and management. In the presentation, CWC emphasized the efficacy of non-structural measures like Flood plain zoning, flood forecasting in mitigation of flood.

First time in the country, the study related to Extended Hydrological Prediction for three basins (Yamuna, Narmada and Cauvery) has been taken up and has been awarded to M/S RTI, USA in May, 2020. Extended Hydrological Prediction (EHP) is the prediction of hydrological variables, most commonly the monthly/seasonal stream flow or in simple term it is the prediction of water availability in a catchment at the time scale of days/weeks/seasons in future. The skillful and reliable forecasts of stream-flow are highly valuable for providing water allocation, managing drought, planning and managing water use.

Another noteworthy development is in-principle consent to Government of Chhattisgarh for preparation of DPR of Bodhghat Multipurpose Project. The Pre-Feasibility Report (PFR) for the Project was submitted by Govt. of Chhattisgarh to CWC in April, 2020 through Web-enable Appraisal system i.e. e-PAMS. It was expeditiously appraised in CWC and CEA and necessary consent was conveyed to Government of Chhattisgarh in May, 2020. The project with estimated cost of Rs. 21000 Crore (P.L 2019-20) envisages Annual Irrigation benefit, Power Generation, Drinking Water and Industrial water components as 266580 ha, 500 MW, 30 MCM and 500 MCM respectively. CWC also continued its work of appraisal of other important projects through web-based services and video-conferencing facility.

CWC has started Flood Forecasting activity in Brahmaputra and Barak Basin from 1st May and in coming months it would be expanded to cover all over India. This is one of the important non-structural interventions to minimize the impact of Floods.

Based on the IMD's weather forecasts, it is hoped that we will have a very good water year starting from June and water resources project would serve the country in best possible way for the revival of economy in these tough times marred with global pandemic due to COVID-19.

*Pravin*



Polavaram Project

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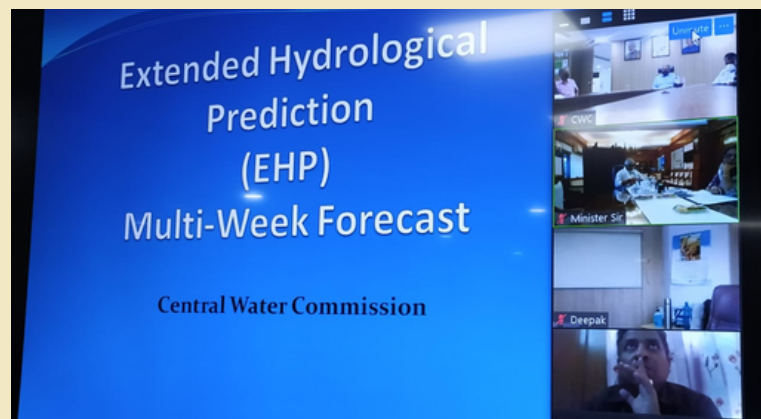
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## Extended Hydrological Prediction (EHP)

First time in the country, the study related to Extended Hydrological Prediction (EHP) for three basins (Yamuna, Narmada, and Cauvery) is being taken up by CWC through a consultant. The work will be done under National Hydrology Project (NHP). Very few countries in the world have taken up this activity in the past. Extended Hydrological Prediction (EHP) is the prediction of hydrological variables, most commonly the monthly/seasonal stream flow or in simple term it is the prediction of water availability in a catchment at the time scale of days/weeks/seasons in future. The skillful and reliable forecasts of stream-flow are highly valuable for providing water allocation, managing drought, planning and managing water use.

The proposal for approval of award of above work to the selected consultant was sent to the Ministry during March 2020. In this regard, Hon'ble Minister of Jal Shakti desired a presentation to be made before him on the proposal and a meeting in the matter was convened on 15.05.2020. Shri Prashant Kumar, Director(BP-II), CWC made a presentation on EHP to Hon'ble Minister in the presence of senior officers

of DoWR, RD&GR and CWC. Subsequently, based on the approval of Ministry, the work of EHP has been awarded to RTI, USA on 20.05.2020. The work will start soon after signing of contract agreement between CWC and RTI, USA.



## 2nd Meeting of The Committee for Flood Management Works in the Entire Country and River Management Activities and Works Related To Border areas (2020-23)

The second meeting of the Committee constituted for formulation of strategy for Flood Management Works in entire country and River Management Activities related to Border Areas during 2020-23 was held under the chairmanship of Dr. Rajiv Kumar, Vice Chairman, NITI Aayog through video conferencing on 27.05.2020. Along with other participants, a presentation was made by Central Water Commission on non-structural measures for flood mitigation and management. In the presentation CWC emphasized the efficacy of non-structural measures like Flood plain zoning, flood forecasting in mitigation of flood.

In pursuance of decision taken in the above meeting, a Sub-Committee under chairmanship of Secretary, DoWR, RD&GR has been constituted. The above Sub-Committee will assist the main Committee in formulation of strategy/proposals in the following three focus areas of flood management.

### Structural Measures of Flood Management

Framing of new guidelines, procedure of appraisal and inclusion of flood

### Meeting on Kosi-Mechi Link

Kosi-Mechi Intra-state link canal project of Bihar envisages diversion of surplus waters of Kosi River to Mechi River in Mahananda basin during monsoon period for irrigation requirement of new command in Araria, Purnea, Kishanganj and Katihar districts of Bihar. The proposal was considered by the 129th meeting of the Advisory Committee of the Ministry held on 08.07.2016 and the same was considered acceptable subject to certain conditions. Investment clearance of proposed Kosi-Mechi Intra-state link of Bihar was considered during 11th meeting of Investment Clearance Committee of DoWR, RD&GR, MoJS on 11.10.2019. During the meeting, it was decided that Member(WP&P), CWC will hold a meeting to examine whether the proposal is within framework of the existing agreement with Nepal. Accordingly, project proposal was reviewed by Member (WP&P), CWC on 04.11.2019. Member(WP&P), CWC

### Bodhghat MPP

Govt. of Chhattisgarh submitted Pre-Feasibility Report (PFR) of Bodhghat Multipurpose Project to CWC through web enabled Project Appraisal Management System (e-PAMS) on 02.04.2020. The project has tentative estimated cost of Rs. 21000.04 crore (Price Level 2019-20) having Annual Irrigation of 266580 ha. Power Generation, Drinking Water & Industrial water components are projected as 500 MW, 30 MCM and 500 MCM respectively.

The project is proposed to be located on River Indravati in the district Dantewada of Chhattisgarh. It envisages construction of the dam, water conductor system, power house and tail race channel to generate 500 MW power from four turbines of 125 MW each, from this power house the discharge let-out through tail race channel into Mandher River. The gravity canal which takes from a pick up weir on Mandher River,

management schemes, prioritization of projects for funding both under existing RMBA and FMP component of FMBAP Scheme during 2020-2023, funding pattern of projects, monitoring mechanism, applicability of space technology & modern tools, budgetary provisions and outlay of scheme.

### Non Structural Measures of Flood Management

Overall strategy for Flood Forecasting, Modernization of existing Flood Forecasting Network & its dissemination, review of SoP for inflow & flood forecasting, integrated Operation of Reservoirs, Preparation of Emergency Action Plan for Large Dams, Dam safety aspects, Flood Plane Zoning, Inundation Mapping, Scientific assessment of Flood Prone Area, Capacity Building, Application of Space Technology in Flood Forecasting

### River Management Activities and Works related to Border Areas

Addition or alteration in procedure of submission of schemes and scope of existing RMBA Scheme due to its strategic importance.

and DG, NWDA along with officials of WRD, Govt. of Bihar visited the project site in the month of February, 2020.

A meeting on Kosi-Mechi Intra State Link Project of Bihar was held under the Chairmanship of Shri S. K. Halder, Member(WP&P), CWC on 15.05.2020 at CWC HQs. Officers from CWC and National Water Development Agency (NWDA) attended the meeting where as Commissioner (FM), DoWR, RD & GR, MoJS and officials of Govt. of Bihar joined it through video conferencing. After detailed deliberations it was decided that the Kosi-Mechi intra-State link project may be considered for investment clearance and Govt. of Bihar will inform the Joint Committee on Kosi and Gandak Projects (JCKGP) about the proposal and submit an undertaking to this effect before the meeting of Investment Clearance Committee.

proposes to utilize 92.27 Cumec of maximum head discharge. It also proposes to cater to drinking and industrial water requirements for Dantewada and Bijapur district of Chhattisgarh. Further, it has been stated that by the construction of Bodhghat project, Chhattisgarh will be utilizing 131.12 TMC water.

On 15.05.2020, the Screening Committee under the Chairmanship of Shri G. K. Agarwal, Chief Engineer, PAO, CWC discussed and recommended for acceptance of the PFR of Bodhghat MP Project, Chhattisgarh. Officers of CWC, CEA, Govt. of Chhattisgarh and Chhattisgarh State Power Generation Company Limited (CSPGCL) were present in the meeting. CWC has given in-principle consent for preparation of DPR of Bodhghat Multipurpose Project, subject to certain terms and conditions.



## Project Acceptance

144th and 145th meeting of Advisory Committee of DoWR, RD&GR for consideration of techno-economic viability of Irrigation, Multipurpose and Flood Control Projects were held on 08.05.2020 and 26.05.2020 through video conferencing, in which Modified Ujh Multipurpose Project & 13 Flood Control Projects were considered and accepted respectively.

These projects are summarized in below table.



Sl. No.	Name of works/scheme	State/UT	Type of Project	Estimated Cost (Rs. Crore and Price Level)	Benefits
1.	Modified DPR of Ujh Multi-Purpose Project	Jammu & Kashmir	Major, Multipurpose, National Project	9167 (Dec 2019)	CCA- 40716 ha AI - 76929 ha
2.	Bagmati Flood Management Scheme Phase III (b)	Bihar	Flood Control	913.215 (2018)	Area- 130900 ha Population- 50.40 Lakh
3.	Anti-Erosion works on left bank of river Ganga at Bali Tola (Nazarmira) to Sabalpur Pachhiyari Tola	Bihar	Flood Control	45.10 (2019)	Area- 1553 ha Population- 0.5 lakh
4.	Extension of left Bhutahi Balan embankment from Km 25.00 to Km 31.610 (up to Ghoghardiha to Nirmali Railway line near Parsa halt) with Revetment	Bihar	Flood Control	48.44 (2019)	Area- 16900 ha Population- 3 lakh
5.	Construction of extended Sikarahatta Majhari low bund from Parsauri to Mahisha in length of 4.60 Km	Bihar	Flood Control	41.92 (2019)	Area- 6500 ha Population- 0.85 lakh
6.	Breach closure work on Left Kamla Balan embankment at km 7.38 (Village-Terha), km 36.60 (Village -Rakhwari) and right Kamla Balan embankment at km 40.60 (village-Gopalkha), km-47.30 (village-Naruar), km 55.80 (village-Kathiwar), km 57.50( village Kakodha), km 71.80( village Kumharaul), and km 79.60 (village Bath Mansara )	Bihar	Flood Control	74.11 (2019)	Area- 72300 ha Population- 7.5 lakh
7.	Anti-Erosion and restoration work at different points on the right bank of left channel and left bank of right channel of river Ganga in Raghapur Block of Vaishali District.	Bihar	Flood Control	46.02 (2019)	Area- 100000 ha Population- 4 lakh
8.	Anti-Erosion works before flood 2020 at different locations situated on left and right bank of Ganga river under Bhagalpur and Katihar district.	Bihar	Flood Control	77.14 (2019)	Area- 14910 ha Population- 10 lakh
9.	Anti-Erosion/Restoration works at different point on left and right bank of Ganga river in district of Buxar, Bhojpur and Patna in state of Bihar	Bihar	Flood Control	67.87 (2019)	Area- 76200 ha Population- 13.83 lakh
10.	Project for constructing bund from Guptarghat to Jamtharaghat (1.150 km) & restoration of Harischand Udaya bund from km 0.000 to km 3.900 at Ayodhya	Uttar Pradesh	Flood Control	39.63 (2019)	Area- 70.50 ha Population- 0.6 lakh
11.	Project for Anti Erosion and flood protection works on left bank of river Ganga for protection of villages Gauspur, Sukkhapur, Mirjapur, Simli, Rajarampur, and Raghunathpur etc. in district Bijnor (UP)	Uttar Pradesh	Flood Control	61.14 (2016)	Area- 5525 ha Population- 47950
12.	Project for dredging and channelization work for safety of village Dube Chhapra situated in left bank of river Ganga District Ballia (U.P)	Uttar Pradesh	Flood Control	30.09 (2019)	Area- 20000 ha Population- 1.4 lakh
13.	Revised project estimate for construction of pumping station for drainage of flood water from protected side near Tarkulani Regulator at km 30.300 of Maluni bund of left bank of river Rapti in district Gorakhpur (U.P)	Uttar Pradesh	Flood Control	84.86 (2017)	Area- 2838 ha Population- 0.32 lakh
14.	DPR for providing flood and erosion protection measures along the Right bank of river Yamuna & its tributaries in Tehsil Paonta Sahib, District Sirmour (H.P)	Himachal Pradesh	Flood Control	250.46 (April, 2019)	Area- 480.13 ha Population- 23485 (census 2011)

## ERM of Sukla Project-Assam

A meeting was held on 19.05.2020 through video conferencing to discuss the present status and issues pertaining to ERM of Sukla Irrigation Project, Assam. Shri S. K. Halder, Member(WP&P), CWC chaired the meeting. Officers of CWC and Project Authorities of Assam were present during the meeting.

The Sukla Irrigation Project consists of a barrage which is located across river Sukla, a tributary of River Puthimari which is north bank tributary of Brahmaputra. Project envisaged providing annual irrigation to an area of 23634 ha and was completed in 1978. Earlier the project has achieved maximum utilisation of irrigation potential of 15635 ha during the year 1982-83 but later on the created potential gradually decreased due to

problems like inefficient falling shutter gates over spillway crest, deficiencies in head-works and canal system, seepage in canals etc. The scheme became defunct in the year 2000. ERM of the project has been proposed to restore the irrigation potential to provide annual irrigation to an area of 18400 ha by remodeling the head works, canal system, structures etc.

CWC has accorded "In Principle" consent for preparation of DPR for ERM of the project in screening committee meeting held on 14.01.2019 at New Delhi. Subsequently, a DPR was submitted by the project authorities for appraisal of the project. The observations/comments of CWC were conveyed to project authorities.

## MoU with IIT, Roorkee

Central Water Commission and Indian Institute of Technology, Roorkee, (IITR) both are recognizing the importance of research and development in the area of Hydrology, Hydropower, Water Resources, Environment and related topics and both are desiring to coordinate their efforts by pooling their expertise and resources. For this purpose, they have signed a Memorandum of Understanding (MoU) on 06.05.2020 to focus on

research project on the 'Non-contact Discharge estimation technique. The research will be carried out at three sites namely

- Jawahar Bridge site of CWC on the Yamuna at Agra
- Deoprayag (Bhagirathi) site of CWC
- Deoprayag (Ganga) site of CWC after the confluence of Bhagirathi & Alakhnanda

## Review Meeting for SMI and RRR Schemes under PMKSY-HKHP

Shri U. P. Singh, Secretary, DoWR, RD&GR took a meeting (through VC) of Officers of Ministry and CWC on 06.05.2020 regarding Surface Minor Irrigation (SMI) schemes and Repair Renovation and Restoration (RRR) of water bodies scheme under PMKSY-Har Khet Ko Pani (HKHP) component. Shri Kushvinder Vohra, Commissioner (SPR), DoWR, RD&GR made presentation on these two schemes. Shri R. K. Jain, Chairman, CWC and Shri S. K. Haldar, Member (WP&P), CWC, attended the meeting. The meeting was also attended by CWC Regional Chief Engineers and concerned Monitoring Directors of CWC.

As per guidelines, CWC has to monitor 20% of the ongoing SMI schemes. CWC Field Units are also associated with monitoring of Repair Renovation and Restoration (RRR) scheme being funded by Gol.

### Background

#### RRR of Water Bodies Scheme

Ministry of Jal Shakti (erstwhile Ministry of Water Resources, RD & GR), Government of India is implementing the scheme of "RRR of water bodies under HKHP component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)". This is a continuing scheme since X Plan. Urban water bodies having water spread area from 2 hectares to 10 hectares are eligible to be included under the scheme. Rural water bodies having minimum water spread area of 5 hectares will be included under the scheme.

The scheme has multiple objectives like Comprehensive improvement and restoration of water bodies thereby increasing tank storage capacity, groundwater recharge, increased availability of drinking water, improvement in agriculture/horticulture productivity, improvement of catchment areas of tank commands, environmental benefits through improved water use efficiency by promotion of conjunctive use of surface and groundwater. It also promotes community participation & self-supporting system for sustainable management for each water body, capacity building of communities in better water management and Development of tourism, cultural activities, etc. So far, since XII Plan, 2219 water bodies with an estimated cost of Rs. 1910.69 crore have been included under the scheme of RRR of water bodies for Central assistance.

Sl. No.	States	No. of water bodies included	No. of works completed
1.	Andhra Pradesh	100	0
2.	Bihar	93	0
3.	Gujarat	61	0
4.	Madhya Pradesh	125	121
5.	Manipur	4	0
6.	Meghalaya	9	4
7.	Odisha	863	734
8.	Rajasthan	68	52
9.	Tamil Nadu	242	104
10.	Telangana	575	239
11.	Uttar Pradesh	74	8
12.	Uttarakhand	5	0
Total		2219	1262

### Meeting for Vacancy

A Video Conference meeting to review the Filling up of Vacancies in Central Water Commission was held on 05.05.2020 under the Chairmanship of Shri U. P. Singh, Secretary, DoWR, RD & GR, MoJS. The meeting was attended by Chairman, CWC, Member (RM), CWC, Chief Engineer (HRM), CWC, Secretary, CWC, Superintending Engineer (HOC), YBO, CWC and concerned officials from Department of Water Resources, RD & GR, MoJS. Further, in continuation of the above Video Conference, another one was held with the same participants on 13.05.2020 to discuss the Recruitment Issues of Skilled Work Assistant in Work-Charged Establishment of Central Water Commission. After the meeting, Chairman, CWC wrote a DO letter to Staff Selection Commission (SSC) to expedite the long pending recruitment requests of CWC for group B and C posts. Concerned Establishment Sections were also directed to take up the matter for filling up the vacant posts.

Out of which, works on 1262 water bodies have been completed. Works on balance 957 number of water bodies is in progress. An irrigation potential of 0.954 lakh ha has been created out of targeted potential of 1.889 lakh ha.

#### Surface Minor Irrigation (SMI) Scheme:

Surface Minor Irrigation (SMI) schemes with irrigation potential less than 2000 ha were included for providing Central Assistance (CA) under Accelerated Irrigation Benefit Programme (AIBP) since 1999-2000 for Special Category States. Initially, it was introduced to provide Central Assistance to the Special Category Hilly States (8 NE States and 4 Himalayan States/UTs of J&K, Ladakh, Himachal Pradesh and Uttarakhand) on their request. This was done in view of the fact that there is little scope for development of Major and Medium Irrigation schemes in these States due to their typical topographical conditions and scattered commands. Subsequently, the Scheme was extended to area covering DPAP, tribal, DDP, Flood prone, Left Wing Extremist and Koraput, Bolangir and Kalahandi (KBK) region of Odisha. Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was launched in 2015-16 and the scheme of SMI is now a part of PMKSY-HKHP. Funding pattern for Special Category States is @ 90% CA and for General category states is @ 60% CA.

So far, since XII plan, 5801 Schemes with an estimated cost of Rs. 13148.16 crore have been included under the scheme for Central assistance. Total central share works out to be Rs. 11039.548 crore out of which total CA of Rs. 7099.375 crore has been released. Out of total targeted potential of 10.332 lakh ha, irrigation potential of 6.5378 lakh ha has been achieved till March 2020. Works on balance 2997 number of Schemes is in progress.

Sl. No.	State/UT	No. of Schemes included under SMI	No. of Schemes completed
1.	Arunachal Pradesh	919	185
2.	Assam	1010	546
3.	Bihar	176	143
4.	Chhattisgarh	147	102
5.	Himachal Pradesh	154	21
6.	Jammu & Kashmir including Ladakh	417	123
7.	Jharkhand	82	44
8.	Karnataka	465	271
9.	Madhya Pradesh	276	256
10.	Manipur	102	0
11.	Meghalaya	260	97
12.	Mizoram	36	0
13.	Nagaland	704	434
14.	Sikkim	381	225
15.	Tripura	21	12
16.	Uttarakhand	651	345
Total		5801	2804





## Dam Rehabilitation and Improvement Project (DRIP)

### Virtual Review Meetings with DRIP Academic Partners

Online virtual video meetings were held individually with DRIP Academic Partners (MANIT, Bhopal, NIT Calicut, Anna University, CET Trivandrum, IIT Roorkee, MNNIT Allahabad, IISc Bangalore and IIT Madras) during 11-14th May, 2020 to review their progress relating to the dam safety institutional capacity building activities. The meetings were attended by Head of Department of Academic Institutes, CPMU officials and representatives from World Bank.

### Review Meeting with DRIP Implementing Agencies

Online virtual meetings were held with DRIP Implementing Agencies (Tamil Nadu WRD, TANGEDCO, Kerala WRD, KSEB, Odisha WRD, Karnataka WRD, Madhya Pradesh WRD, DVC, UJVNL) during 4-15th May, 2020 to review the physical and financial progress of ongoing DRIP. Deliberations were done on important issues and bottlenecks in order to ensure successful closure of the project. The status of preparedness of the Implementing Agencies regarding new DRIP Phase II & Phase III was also reviewed.

### Video Conferencing on Bituminous Geomembrane lining for Dam water proofing

A virtual meeting was held on 28.05.2020, wherein a presentation was made on "Bituminous Geomembrane Lining for Dam water proofing" by representative of M/s Yooil Infrastructure Pvt. Ltd. Officials of CWC, World Bank and representatives of states attended the meeting to explore the potential use of Bituminous Geomembrane for Dam water proofing.

## 26th TEC Meeting for North Koel

The 26th meeting of the Technical Evaluation Committee (TEC) for completing the balance works of North Koel Project (NKP) was held on 19.05.2020 at CWC, New Delhi through Video Conferencing (VC) under the chairmanship of Shri S. K. Halder, Member(WP&P), CWC and Chairman (TEC), NKP. The officers of CWC field units at Patna and Ranchi; officers from State Governments of Bihar, Jharkhand at Aurangabad, Palamu; and officers from WAPCOS at Gurugram and Aurangabad attended the meeting through VC. Shri Vijai Saran, CE, IMO, CWC and Member Secretary, TEC informed that the last meeting of TEC i.e. 25th TEC was held on 16.01.2020 and the 26th TEC meeting proposed in April 2020 could not be conducted due to COVID-19 pandemic, so it was decided to hold the meeting through VC. There was discussion on the status of various items viz.

- Status of providing necessary security arrangements by Govt. of Jharkhand for commencement of work at Dam site of the project;
- Status of land acquisition;
- Progress of various components of the balance works of the project by the WAPCOS;
- Issue of thickness of LDPE Sheet in canal lining in the Right Main Canal (RMC);

## Committee Constituted for 'Regulation of Surplus Water during the Monsoon Period Spilling from the Main Stem Projects on Krishna River

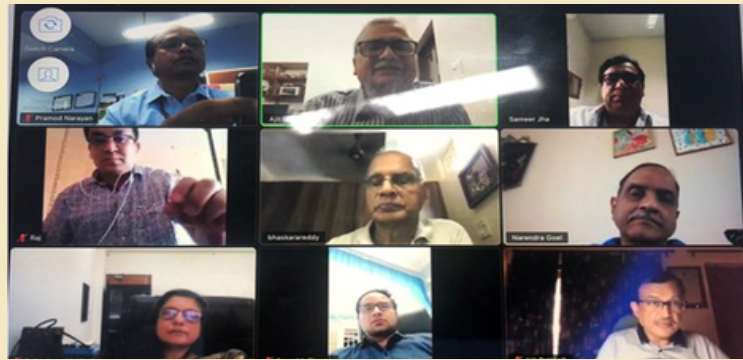
The first meeting of the Committee constituted by DoWR, RD & GR, MoJS for regulation of surplus water during monsoon period spilling from the main stem projects on Krishna River for supply to the States of Andhra Pradesh and Telangana was held under the Chairmanship of Shri Vijai Saran, Chief Engineer, Irrigation Management Organisation (IMO), CWC through Video Conferencing on 13.05.2020. Officers from Krishna River Management Board (KRMB), Central Water Commission (CWC), Govt. of Andhra Pradesh and Govt. of Telangana attended the meeting.

Both States were requested to furnish approved rule curves currently being adopted, 40 years continuous data of reservoir inflows and utilization in respect of Srisailem and Nagarjunasagar reservoirs for conducting the analysis. It was suggested to the States to revise old rule curves based on the 40 years inflow-utilization data and if needed KRMB

## Upper Bhadra Project

Shri S. K. Halder, Member(WP&P), CWC on 22.05.2020 took a meeting related to present appraisal status of Upper Bhadra Project of Karnataka State. Chief Engineer, Project, Karnataka along with senior officials of State attended the meeting through VC. Pending issues yet to be

### Virtual meetings for starting postgraduate programmes in dam safety management and establishment of CoE



Online meetings were held with IIT Roorkee and IIT Madras on 27.05.2020 and 29.05.2020 respectively under the Chairmanship of the Smt. Debashree Mukherjee, Additional Secretary, DoWR, RD&GR, MoJS to determine the strategy for the introduction of Postgraduate Programme on Dam Safety Management and establishment of a Centre of Excellence in Dam Engineering. The meetings were attended by officials of CWC, World Bank and Director, Heads of Departments, Dean, Project Coordinators and other faculty members of the academic institutes.

- Status of numerical simulation/model studies by WRD, Govt. of Bihar in respect of RMC;
- Status of design and drawings of Kandi Distributary System of Left Main Canal of the project;
- Status of verification of invoices related to LMC works submitted by WAPCOS;
- Status of non-payment of State share for the works of LMC of the project etc.



and CWC can provide technical guidance to them for preparing / modifying rule curves.



complied by State Govt. like working tables, success rate of the project and additional information required for finalizing cost of the project were discussed. Member(WP&P), CWC asked the State Govt. officials for early submission of additional inputs to CWC for expeditious finalization of techno economic appraisal of the project.

## Flood Preparedness Meetings

Flood Preparedness meeting through VC for all Organizations other than B&BBO, and IBO whose flood forecasting activities is starting on 01.06.2020 was held under the chairmanship of Member (RM), CWC on 08.05.2020. All intended participants participated in the VC. The main conclusions of discussion in respect of various Divisions/Circles/Organizations are summarized below:

- All the Divisions for which flood season starts from 01.06.2020 will start all flood forecasting related activities positively.
- All telemetry stations may be made operational. It was informed by all Regional offices that the vendors are being contacted for repairs, wherever required and as soon as the lockdown is relaxed, it will be made fully operational.
- MGD-1 and LGD-1 informed that data communication with Nepal is not being done from 2018 onwards and the HM data being loaded in the website of Nepal is being consulted for giving forecast to locations

near Indo-Nepal boundary. EE(LGD-1) informed that the forecast for Gandak and Kosi Barrages will also be done either through taking data from website of Nepal or through 3-day advisories this year.

- Additionally, Director (FFM) requested that all flood related information should be sent to local Health and Family Welfare Department of respective State Governments proactively, so that in case of any riverine flood affecting any quarantine camps opened by them for Covid19 patients along or near the flood plains, they are in a position to ensure that there is no threat of loss of life due to flooding and resultant damages to such infrastructures.

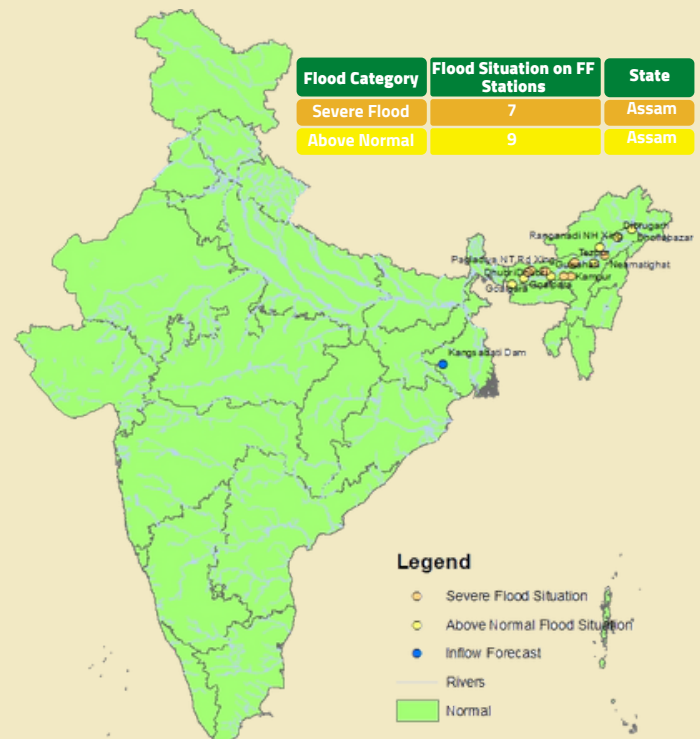
In addition to above, various regional offices of CWC also organized such meetings with various State Govt. and stakeholder organizations in their jurisdiction. Some of them are depicted below.



## Flood Situation during May, 2020

Central Water Commission (CWC) through its field divisions collects hydrological and hydro-meteorological data on real-time basis during the flood season every year. Using these data, flood/inflow forecasts are formulated for 325 locations (197 Level and 128 Inflow Forecast Stations) and disseminated to various user agencies through Fax/e-mail/SMS and Website. In addition to the data collected from the network of CWC stations, the meteorological data and Quantitative Precipitation Forecast (QPF) received from India Meteorological Department are also utilised in formulation of flood forecast. Regular Flood Forecasting Activity commenced on 01.05.2020 in Brahmaputra and Barak basins. During the period from 01.05.2020 to 31.05.2020, 204 flood forecasts (203 Level and 1 Inflow) were issued, out of which 198 (198 Level and 0 Inflow) forecasts were within limit of accuracy with a percentage accuracy of 97.05%. 71 nos. of Orange Bulletin (for severe flood situation) were issued in the month of May from Central Flood Control Room till 31st May.

During the period 01.05.2020 to 31.05.2020, Super Cyclonic Storm "Amphan" crossed West Bengal Coast and affected the States of Odisha, West Bengal, Sikkim and Assam. Special Advisories were issued during the period. However, none of the Flood Forecasting Stations in Odisha and West Bengal crossed the Warning Level. One reservoir namely Kongsabati Dam received inflows above its threshold limit in West Bengal in association with very heavy rainfall due to Super Cyclone "Amphan". "Above Normal" to "Severe Floods" was witnessed in Brahmaputra Basin in Assam from 01.05.2020 to 31.05.2020.



## Visit Report on Dredging Works being carried out in Ghaghra and Rapti Rivers by Govt. of Uttar Pradesh.

Government of Uttar Pradesh has undertaken dredging works in River Ghaghra and Rapti in districts of Balrampur, Barabanki and Gonda as flood control and anti-erosion measure. The work has been reported satisfactory by the state of UP and Hon'ble Union Minister of Jal Shakti desired that Central Water Commission (CWC) shall study these measures for their efficacy, outcome, sustainability/cost effectiveness and submit a report on the observations and recommendation. Subsequently, a team of officers from CWC, Ganga Flood Control Commission (GFCC) and state officials from Irrigation and Water Resource Department, Govt. of UP was constituted for the purpose. The team led by Shri Anupam Prasad, Chief Engineer, UGBO, CWC, Lucknow visited 4 locations where dredging works were being carried out. Three of the locations namely Elgin Charsari (District Gonda), Katariya, Chandpur (District Basti) and Lolpur, Keshavnagar



(District Basti) on River Ghaghra and one location on Rapti River namely Bhawanpurwa (District Balrampur) were visited by the Team. A Visit Report in this regard has been submitted to DoWR, RD&GR.



## Mathematical Model Study of Ghaggar Basin

The issue of flooding from Ghaggar River has been under active discussion since last three decades. The erstwhile Ministry of Water Resources, reconstituted Ghaggar Technical Committee as Ghaggar Standing Committee on 26.02.1990 with Member(RM), CWC as Chairman and members from DoWR, RD&GR, CWC, Railways, Punjab, Haryana and Rajasthan. This matter is in Supreme Court now. Supreme Court has directed CWPRS, Pune for conducting the model study of Ghaggar River. A review meeting with officers from CWPRS, Govt. of Haryana and Punjab, through video conferencing, regarding data issues for mathematical model studies of Ghaggar basin was taken by Member(RM), CWC in his chamber on 08.05.2020.

After detailed deliberations, it was decided with consensus of all participants that:

- Due to current Covid-19 situation, it will not be possible for Surveying Agency to visit the field sites. Therefore agency will re-look/re-assess

surveyed data and will provide corrected data related with cross-sections etc. to CWPRS, Pune within 5 days.

- Old RDs of various structures and confluences may be converted into new RDs (UTM coordinates) as per survey of Agency with the help of existing benchmarks/land marks by the Agency and be given to CWPRS Pune within 5 days.
- Consistent Design discharge for river Ghaggar for safely passing the design floods at various locations (from U/S to D/S) will be provided by State Govts to CWPRS, Pune. Observed discharges at various GD sites along river Ghaggar may also be supplied by State Govts to CWPRS, Pune.

While concluding the meeting, it was decided that all corrected/additional data may be supplied to CWPRS, Pune within 5 days and CWPRS, Pune may verify all the data within next 24 hours and work for the model study should start by 15.05.2020.

## Meeting of the Committee Constituted for preparation of Plan for Optimal Utilization of Water of Eastern Rivers of Indus Basin

As per Indus Waters Treaty 1960, water of entire Eastern Rivers of Indus River system (Ravi, Beas and Sutlej) is allocated to India. To assure full utilization of entire water of these three rivers and its tributaries, a Committee has been constituted under the Chairmanship of Member (D&R), CWC, for preparation of plan for optimal utilization of water of Eastern Rivers of Indus Basin. First meeting of the Committee was held on 05.05.2020. In the meeting, Sh. P. Dorje Gyamba, Director(WP&P-Coordination) made presentation to the committee on the Indus Rivers System, Existing storages created, under construction storage projects and proposed projects under consideration and planning along with Canal Network, Hydro-meteorological network of CWC and other agencies and States benefited. The Committee noted that there is need to assess the annual water yield in Eastern Rivers of Indus system (Ravi, Beas and Sutlej) rivers up to border and present utilization through the existing system.



## Construction of Adi Badri Dam, Somb-Sarasvati Barrage

Haryana Sarasvati Heritage Development Board (HSHDB), Govt. of Haryana has prepared a scheme to revive the Sarasvati River by transferring water of river Somb, a tributary of Yamuna. The scheme envisages the construction of a gravity dam at Haryana – Himachal Pradesh Border; a barrage at 1 km d/s of the dam on Somb River and a reservoir. HSHDB has sought design consultancy from CWC for the scheme. Various meetings to discuss the project proposal were held in CWC with the representatives of HSHDB. During the meetings, it was appraised by Designs(N&W), CWC that there is a need for a robust

arrangement for silt exclusion considering the high silt rates as per the project report to make it sustainable on a long term basis. The revised hydrology chapter has been finalized by HSO, CWC. As transfer of water from Upper Yamuna basin is proposed, it was suggested to seek comments of Upper Yamuna River Board(UYRB) and also intimate about the proposal to Govt. of Rajasthan in view of inter-state agreement dated 17.09.1973 between Rajasthan and Haryana States on the utilization of Ghaggar waters. Further, in view of submergence area in Himachal Pradesh State, it was requested to submit a signed copy of proposed MoU between Haryana and Himachal Pradesh States.

## West Bengal Major Irrigation and Flood Management Project

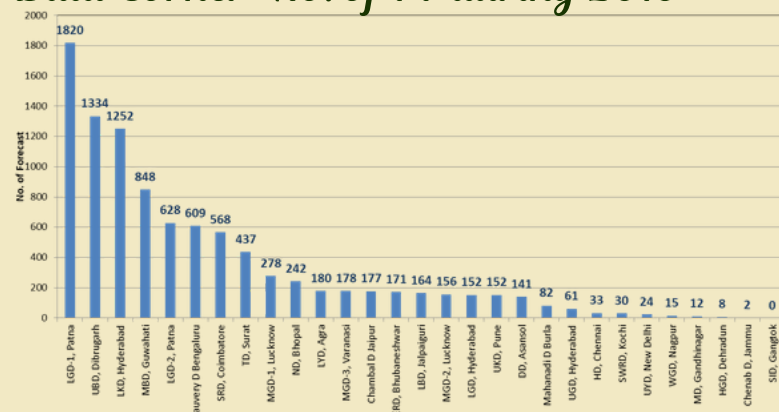
Central Water Commission (CWC), being as a technical wing of the Ministry, Water Sector proposals, submitted by State Govt. for External Assistance are being examined by the different specialized Directorates under CWC. Director, External Assistance is the nodal officer for the matter. Shri S. K. Halder, Member(WP&P), CWC took a review meeting on 19.05.2020 to discuss the various issues related to Irrigation Management aspect of "West Bengal Major Irrigation and Food Management Project

(WBMIFMP)", posed for External Assistance with World Bank & Asian Infrastructure Investment Bank (AIIB). The said review meeting was attended by officers from CWC involved in appraisal of the Irrigation Management Component of the Project along with Shri D Sen Gupta, Joint Secretary & Shri S. K. Laha, Chief Engineer, Govt. of West Bengal who participated in the meeting through Video Conferencing.

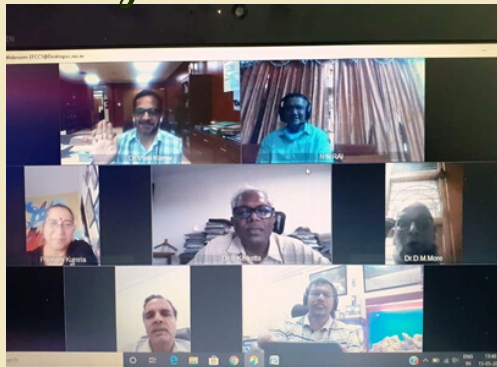
## Training

S. No.	Topic of Programme	Date	Organizer	Participants
1	Training through Distance Learning on "Drainage & Watershed Delineation and Jurisdiction Demarcation using GIS"	26th May-5th June, 2020	NWA, CWC through Google Classroom platform.	24 CWC officers
2	Global Webinar on "The Impact and Recovery from COVID-19 in the Irrigation and Drainage Sector."	18.05.2020	The World Bank, ICID, and the 2030 Water Resources Group (WRG) On WebEx Platform	Officers of WP&P Wing, CWC, HQ
3	Webinar on "Role of Safety Standards and Land Subsidence in Sustainable Development and Management of Flood Prone Areas"	19.05.2020	ICID	Officers of RM Wing, CWC, HQ and Chief Engineers & SE/SE(HOC) of Field Offices

## Data Corner-No. of FF during 2019



## Gallery



Shri N. N. Rai Director, Hydrology (South) attended the 32nd meeting of Expert Appraisal Committee of MoEFCC for River Valley Projects on 15.05.2020 through VC.



Observation of Anti- terrorism day by MCO, CWC, Nagpur. In this ceremony, all officials took anti- terrorism pledge to wean away youth from terrorism.



Shri D. S. Chaskar, SE, HOC, Gandhinagar participated in the State level pre monsoon review meeting for Disaster preparedness Chaired by Chief Secretary, Govt of Gujarat on 15.05.2020

## Water Sector News

- ✦ BSY seeks water from Maha for drinking purposes (Deccan Herald, 03.05.2020)
- ✦ Ganga water fit for drinking after decades: Experts (New Indian Express, 08.05.2020)
- ✦ Water control meters must for buildings (Deccan Herald, 09.05.2020)
- ✦ Yettinahole project hits roadblock again (Deccan Herald, 12.05.2020)
- ✦ Administrative approval for Navali dam DPR (Deccan Herald, 18.05.2020)

- ✦ Krishna Board seeks TS data (Deccan Chronicle, 20.05.2020)
- ✦ Jal Shakti Ministry banks on MGNREGS for jobs to workers (New Indian Express, 22.05.2020)
- ✦ Over 30,000 Hit by Floods in Assam (Deccan Chronicle, 27.05.2020)
- ✦ Morigaon facing threat of erosion from Brahmaputra (Assam Tribune, 29.05.2020)
- ✦ Kaleshwaram now the biggest project (Deccan Chronicle, 30.05.2020)

## History-Vision for Bhakra

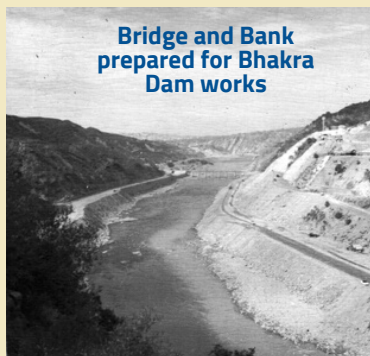
With the partition of 1947, the age-long cry for water for East Punjab, PEPSU and Rajasthan became intensely real and assumed the importance of a national problem, for not only the surplus from undivided Punjab was wiped out but the requirements of Indian Punjab aggravated the national food deficit.

A permanent remedy was, therefore, urgently sought for the problem of Punjab and was found in the scheme of harnessing the waters of the Sutlej-the life-line of the border State in the west. This was neither an original nor a new proposal. All the time, the bulk of the monsoon supplies of the river water is being drained away fruitlessly to the Arabian Sea, which, stored and channeled into hungry fields, can yield food for millions without hurt, now or at any time, to any state depending on the waters from the Himalayas.

Bhakra dam spanning the narrow picturesque gorge at the foot of the mountain has to rise 680 feet almost sheer from the rocky bed of the Sutlej and run across for 1,700 feet at its top. At the bed level it will have an effective width of 625 feet. To allow the unwanted flood waters to flow over the dam, a central spillway 260 feet long controlled by four steel gates will be installed. To release water for purposes of irrigation from the Bhakra Reservoir, 10 outlets will be provided in each of two tiers at calculated heights. Between these outlets, 106,000 cubic feet of water per second can be let out for irrigating fields downstream and, in combination with the spillway, altogether 290,000 cubic feet of water can be let out of the reservoir at a given instant. The total installed capacity of power is expected to be of the order of 186,000 kW.

### The Irrigation System

The Bhakra Canal system supposed to make a network of major and minor channels running to a total length of 2,890 miles. The main feeder canal of this system-the Bhakra Main Line- take off from the tail of the Nangal Hydrel Canal, and is 108 miles long, lined with impervious tile masonry containing a sandwiched layer of mortar throughout its length.



From this will branch out the main arteries of the system, to lead 12,500 cubic feet per second of much needed water to the parched lands on both sides.

The Bhakra-Nangal Hydro-Electric Project has been designed to meet the immediate as well as long-term requirements of power of the Punjab, Pepsu, Rajasthan, Delhi and Himachal Pradesh. The transmission system is being laid for long-term requirements, but

the generating capacity will be added in stages, depending upon the development of demand for power. The overall power system of the Bhakra-Nangal Project comprises two power houses at the foot of the Bhakra Dam and two power houses along the Nangal Canal.

### Ganguwal Power House

On the 12th mile from the Nangal Dam, the hydel channel flowing through the Naini devi terrain falls down 98 ft. at Ganguwal. This power house, just commissioned, has been equipped with two generating sets-of 24,000 kW capacity each. (Provision for a third similar set has been made to add another 24,000 kW at a later date).

### Kotla Power House

To harness another fall in the Nangal Hydrel Channel, the Kotla Power House is in the course of construction. A double circuit 132 kV line will connect Ganguwal and Kotla. Another line will run from the second power house, Kotla to Ludhiana, but initially power will come to both the lines from the Ganguwal Power House. And when the Kotla Power House expected to be completed by the end of the year-goes into operation, there will be a total of 96,000 kW of power out of which 72,000 kW will be firm power.

Source: Bhagirath, Archive, CWC



## Central Water Commission

An attached office of Dept. of Water Resources,  
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Water Systems Engineering Directorate  
Central Water Commission

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

