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Dr. R.K. Gupta
Chairman, CWC

Message

In order to implementation of Ken Betwa Link Project, the Second Meeting of Steering Committee of Ken-Betwa Link Project (SC-KBLP) was held on 20.07.2022 under the Chairmanship of Secretary, DoWR, RD&GR, Ministry of Jal Shakti. I participated the meeting along with Member(D&R), CWC. During the meeting, deliberations were held on various agenda items covering follow up actions on decisions taken during the 1st meeting, such as work plan for year 2022-23, engagement of Project Management Consultancy, land acquisition and R&R of affected villages, establishment of offices of Ken-Betwa Link Project Authority, implementation of integrated landscape management plan prepared by Wildlife Institute of India for Greater Panna, financial powers of KBLPA, reimbursement to State on expenditure made etc.

Central Water Commission took up work of monitoring glacial lakes (GLs)/water bodies (WBs) during XI plan period in the year 2009 under DWRIS Plan scheme. Secretary, DoWR, RD&GR chaired a meeting to deliberate on the issues related to glaciers/glacial

lakes including Glacial Lake Outburst Flood (GLOF)/Landslide Lake Outburst Flood (LLOF) on 11.07.2022 in view of NDMA guidelines on Management of Glacial Lake Outburst Floods. The meeting was attended by the representatives from CWC, various ministries and scientific organizations with concerned officers of DoWR, RD & GR. During the meeting, the representatives of various organizations have given short presentation highlighting the activities being undertaken by them.

I attended the meeting chaired jointly by Secretary, DoWR, RD&GR, Foreign Secretary and Power Secretary at New Delhi on 21.07.2022 regarding the issues related to Indo-Nepal cooperation in the field of water resources project. The primary objective of meeting was to discuss the implications of the design parameters adopted in DPR of proposed Lower Arun Hydro Electric Project on river Arun on the Sapta Kosi High Dam Multipurpose Project (SKHDMP) in Nepal for which field surveys & investigation and other studies are under way jointly by India and Nepal.

Suggestions are welcome from all the readers of the newsletter to improve it.

R.K. Gupta

First Meeting of National Level Steering Committee (NLSC) of DRIP-II & DRIP-III

The First meeting of the National Level Steering Committee (NLSC) for Dam Rehabilitation and Improvement Project (DRIP) Phase II was held on 04.07.2022 under the Chairmanship of Secretary, DoWR, RD&GR. Shri J. Chandrashekhar Iyer, Member (D&R), CWC attended the meeting wherein the agenda points including status of external funding and its effectiveness, Current Partner States & Inclusion of Additional States, Physical and Financial Progress, Project Readiness Criteria of DEA, Status of Centre of Excellence, Notification of SCDS&SDSO, Constitution of State Level Steering Committee (SLSC) for DRIP Phase-II and Hiring of CPMU Consultant were



discussed. Members of the Committee, officials from Ministry, CWC, World Bank and Implementing Agencies attended the meeting.

Second Meeting of Steering Committee of Ken-Betwa Link Project

The Second Meeting of Steering Committee of Ken-Betwa Link Project (SC-KBLP) was held on 20.07.2022 at Vigyan Bhawan, New Delhi under the Chairmanship of Secretary, DoWR, RD&GR, Ministry of Jal Shakti. The meeting was attended by representatives of both the States of Madhya Pradesh and Uttar Pradesh and officials of CWC, NITI Aayog and various Central Ministries.

Secretary, DoWR, RD&GR, MoJS in his opening remarks stressed that Ken-Betwa link project which is critical for the water security and socio-economic development of Bundelkhand region, should be implemented in a time bound manner using state of art technologies and know-how duly taking care of R&R of project affected people and conservation of the region, particularly the landscape dependent species of Panna Tiger Reserve.

During the meeting, deliberations were held on various agenda items covering follow up actions on decisions taken during the first meeting, such as work plan for year 2022-23, engagement of Project Management Consultancy, land acquisition and R&R of affected villages, establishment of offices of Ken-Betwa Link Project Authority, implementation of integrated landscape management plan prepared by



Wildlife Institute of India for Greater Panna, financial powers of KBLPA, reimbursement to State on expenditure made etc. It was also proposed to constitute a Technical Advisory Group for KBLP to review and advise the Authority on various planning and technical matters. An R&R Committee to monitor the implementation of R&R plan in transparent and time bound manner was proposed to be constituted. A Greater Panna Landscape council was also proposed to be constituted for implementation of Landscape Management Plan (LMP) and Environment Management Plan (EMP) of the project.

Source: <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1843201>

Discussion on the issues related to India-Nepal Cooperation in the field of water resources

Dr. R. K. Gupta, Chairman, CWC and Shri. J. Chandrashekhar Iyer, Member, D&R attended the meeting, which was jointly chaired by Secretary, DoWR RD & GR, Foreign Secretary and Power Secretary, held on 21.07.2022 at New Delhi to discuss the issues related to India-Nepal Cooperation in the field of water resources. The primary objective of the meeting was to discuss the implications of the design parameters adopted in the DPR of proposed Lower Arun HE

Project on River Arun of the Sapta Kosi High Dam Multipurpose Project (SKHDMP), Nepal for which field survey & Investigation and other studies are underway jointly by India and Nepal.

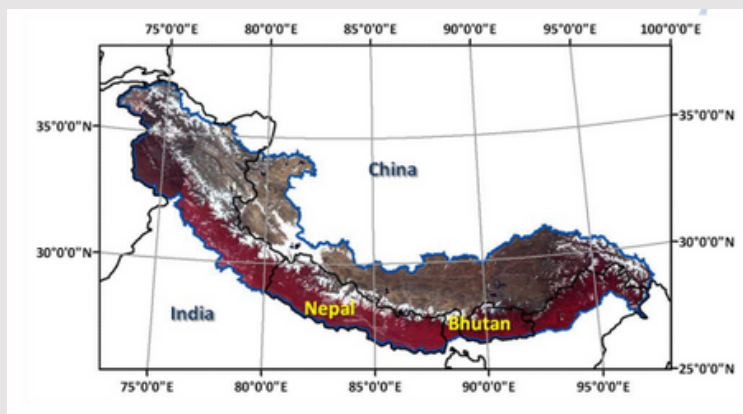
Various issues were discussed in this meeting and decisions regarding Lower Arun HEP and Sapta Kosi High Dam Multipurpose Project were taken in this meeting.

Management, Monitoring and Studies related to Glaciers/ Glacial Lakes including Glacial Lake Outbursts (GLOF)/Landslide Lake Outburst flow (LLOF)

A meeting was held under the chairmanship of Secretary, DoWR, RD&GR to deliberate on the issues related to glaciers/glacial lakes including Glacial Lake Outburst Flood (GLOF) Landslide Lake Outburst Flood (LLOF) on 11.07.2022 in view of NDMA guidelines on Management of Glacial Lake Outburst Floods. The meeting was attended by the representatives from CWC, various ministries and scientific organizations with concerned officers of DoWR, RD & GR. During the meeting, the representatives of various organizations were requested to give short presentation highlighting the activities being undertaken by them.

Central Water Commission (CWC) took up work of monitoring glacial lakes (GLs)/water bodies (WBs) during XI plan period in the year 2009 under DWRIS Plan scheme. The inventory of GLs/WBs was published in June, 2011 in association with NRSC, Hyderabad based on the satellite imageries data. As per this inventory, there are 2,028 GLs/WBs having size more than 10 ha including 477 GLs/WBs having size more than 50 ha in Himalayan region of Indian river basins. At present, CWC is monitoring on monthly basis GLs/WBs larger than 50 ha during monsoon season (June to October) every year, out of which 95 GLs/WBs are in India.

The glacial lake monitoring helps in assessment of the any untoward growth in size of lakes and subsequently conducting Glacial Lake Outburst Flood (GLOF) study. The



Index map of study area of GLOF

monitoring report is being shared with Ministry of Jal Shakti, concerned field offices of CWC, concerned Himalayans States, field offices of CWC and other stakeholders.

Recently, CWC has initiated monitoring of glaciers even less than 10 ha in size and with frequency of observations less than month for critical glaciers, thereby increasing the total inventory of glaciers/WB under monitoring to 901. Attempts are also being made for automatic interpretation of size of glaciers being observed by CWC.

CWC is also involved in project specific GLOF studies to identify the potentially dangerous glacial lakes in the project catchment based on the location of lakes, associated mother glaciers, and topographic features around the lakes and glaciers.

Presentation of CWC on the DPR of Barrage option submitted by M/s Stucky to CWC

Shri J. Chandrashekhar Iyer, Member(D&R), CWC, Shri Vijai Saran, Chief Engineer and Shri S.K. Das, Director have attended a presentation of CWC on the DPR of Barrage

option submitted by M/s Stucky to CWC before the Independent Committee Constituted by Ministry of Jal Shakti on 02.07.2022 at CWC(HQ), New Delhi.

CWC's stall and participation in the exhibition 'Aspiring Haryana, 2022' at Hisar, Haryana

Member (RM), CWC along with Chief Engineer (YBO), Superintending Engineer (Planning Circle) and other officers and staff of P&I Division CWC, Faridabad participated in "ASPIRING HARYANA-2022" during 28th to 30th July, 2022 at Hisar, Haryana.

During the exhibition, effort was made to enlighten the visitors about various Schemes & Programmes of Ministry of Jal Shakti in the field of Water Resource Development & Management. Information about Jal Jeevan Mission, Jal Shakti Abhiyan, PMKSY, Namami Gange Programme, Atal Bhujal Yojna, Flood Forecasting etc. were showcased through Posters, Flex banners, Audio-video films etc.

It is profoundly informed that Pavilion of MoJS, DoWR RD & GR attracted huge crowd especially students of various



schools and colleges in and around Hisar district during the exhibition period. All the visitors were explained thoroughly about theme of the stall and content therein. The event ended with a huge success and the Pavilion of Ministry of Jal Shakti, Deptt. of WR, RD & GR won the best stall prize.

Meeting regarding Polavaram Irrigation (National) project

Government of India approved a scheme of National Projects for implementation during XI Plan with a view to expedite completion of identified National Projects for the benefit of the people. National projects are provided financial assistance for cost of irrigation & drinking water component in the form of central grant.

Polavaram Irrigation Project (National Project) is being executed on River Godavari near Ramayyapeta village of Polavaram Mandal, West Godavari District, Andhra Pradesh. This multipurpose major project envisages construction of an earth cum rockfill (ECRF) dam along with saddle earth dams, a spillway, irrigation tunnels, navigation tunnel and channel and two main canals on both flanks to create ultimate irrigation potential of 4.36 Lakh Ha. The project also envisages generation of 960 MW of hydropower, drinking water supply to 540 villages and diversion of 84.7 thousand million cubic feet (TMC) of water (including losses) to Krishna basin.

An internal review meeting under the Chairmanship of the Secretary, DoWR, RD&GR was held on 13.07.2022 wherein representatives of Central Water Commission, Water Resources Department (Govt. of A.P.), Polavaram Project Authority (PPA) had participated to discuss current status of implementation of Polavaram Irrigation Project, status of

treatment/measures to be adopted in scoured region of Gap-I & II and details of bills/claims pending for reimbursement. Further, this meeting was followed by a review meeting by Hon'ble Minister (Jal Shakti) on 14.07.2022, to discuss the progress and current status of implementation of Polavaram Irrigation Project.

During the aforesaid meeting, the key decisions were to immediately conduct a study to determine water level fluctuations in the downstream of spillway/ near downstream coffer dam for various floods passing through spillway, to ascertain possibility of over-topping of the completed portion of the downstream coffer dam, to expedite reimbursement of bills of Government of Andhra Pradesh for Polavaram project by the Finance Ministry may be pursued. Further, to immediately conduct a study to determine water level fluctuations in the downstream of spillway/near downstream coffer dam for various floods passing through spillway, to ascertain possibility of over-topping of the completed portion of the downstream coffer dam. And also, directed PPA to issue a letter to the project implementing agency i.e. Water Resources Department, Government of Andhra Pradesh, pointing out delay in project execution leading to over-topping of a section of downstream coffer dam.

Subarnarekha-Mahanadi Link project site visit

Subarnarekha-Mahanadi (S-M) Link Project is one of the inter-linking rivers project under the Himalayan Rivers Development Component of National Perspective Plan (NPP). A team of officers from CWC (Planning Circle - Faridabad, BCD (E&NE) Dte. and Hydrology (N) Dte) along with officers from NWDA jointly visited the proposed S-M Link Project during 11.07.2022 to 17.07.2022. The purpose of this joint visit was to familiarize the designers with local site conditions and to have a discussion of various design parameters at site so that preparation of DPR could be expedited within scheduled timeframe.



Meeting with the Chairman (BBMB) regarding expediting the implementation of DRIP Phase-II in BBMB

Project Director, DRIP Phase-II & Phase-III and Shri Samir Kumar Shukla, Director(FE&SA) accompanied Additional Secretary, DoWR, RD&GR, Ministry of Jal Shakti, Govt. of India in his visit to Bhakra Beas Management Board (BBMB) for meeting with the Chairman (BBMB) on 12.07.2022 regarding status-review & expediting the implementation of DRIP Phase-II in BBMB, and Bhakra Dam & Pong Dam Visit on 12-13th July 2022 respectively.



Meeting held under the chairmanship of Secretary (WR) regarding Establishing a smart laboratory for clean river in Varanasi

After meeting Hon'ble Prime Minister of Denmark H.E. Ms. Mette Frederiksen during her visit to India on 09.10.2021, Hon'ble Prime Minister, inter-alia made following declaration:

- Establish a Centre of Excellence for Smart Water Resources Management (CoESWaRM)
- Establish a Lab for Clean Rivers in Varanasi on the lines Smart City Lab in Panji.

In follow up of above declaration, with objective of co-operation in the field of safe and secure water; series of meetings were held among Ministry of Jai Shakti, CWC, NMCG and Urban Development Wing of Embassy of Denmark during December 2021 to July 2022.

In this series, a meeting was held on 12.07.2022 regarding establishment of a lab for clean rivers in Varanasi on the lines of Smart City Lab established in Panaji. Shri G. Asok Kumar, Director General, National Mission for Clean Ganga (NMCG), Shri Kushvinder Vohra, Member (WP&P), CWC, Shri P.M. Scot, Member(RM), CWC, Ms. Anitha Kumari Sharma, Counsellor, Urban Development, Danish Embassy and other



concerned officers participated in the meeting. During, the meeting modalities for establishing the lab for clean rivers in Varanasi were discussed in detail for way forward.

Another meeting was chaired by Secretary, DoWR, RD&GR, Government of India with officials of CWC, NMCG and Ministry, on 29.07.2022 regarding establishing a smart laboratory for Clean River in Varanasi. In this meeting, Secretary, DoWR, RD&GR had taken a decision that a team of official(s) should visit Goa to meet and discuss with the team/officials that worked on the Project Urban Living Lab, Panji, Goa.

Virtual National Dam Safety Authority (NDSA) meeting

A virtual meeting of National Dam Safety Authority (NDSA) was held under chairmanship of Shri J. Chandrashekhar Iyer, Chairman, NDSA and Member(D&R), CWC on 11.07.2022 to discuss the establishment of NDSA, creation of head of

account and road map of organizing the workshops in various region of NDSA to sensitize the States to implement the provisions of DSA, 2021.

Inauguration of Workshop on Physical bases mathematical modelling for estimation of Sediment Rate and Sediment Transport in Seven River Basins

The 3rd Workshop on "Overview of adopted approaches and methods, Outcome of morphological analysis and Sedimentation modeling on Ramganga, Barak and Narmada basins" was held in hybrid mode during 14th-15th July 2022 at CWC, HQ, New Delhi under the project Physical based mathematical modeling for estimation of Sediment Rate and Sediment Transport in Seven River Basins under National Hydrology Project (NHP). The workshop was inaugurated by Shri J. Chandrashekhar Iyer, Member(D&R), CWC. During the workshop topics such as sediment generation phenomenon, sediment transport mechanisms, morphological



characteristics of the rivers, and the sediment deposition on Ramganga, Barak and Narmada basins were covered.

The 16th Authority Meeting of Punatsangchhu-II

The 16th Authority Meeting of Punatsangchhu-II Hydroelectric Project Authority (PHPA-II) was attended by Shri J. Chandrashekhar Iyer, Member(D&R) along with Shri Vijai Saran, Chief Engineer, Shri S.K. Das, Director & Shri Amit

Ranjan, Director on 19.07.2022. Discussions regarding Construction and completion schedule of the project as well other technical matters were also reviewed during the meeting.

The 20th meeting of WRD-09

The 20th meeting of WRD-09 (Dams and Spillways Sectional Committee), Bureau of Indian Standards was held in virtual mode on 01.07.2022. Meeting was chaired by Shri Vijai

Saran, Chief Engineer, Designs(E&NE). Director (CMDD, E&NE), Director (CMDD, N&W) and Director (CMDD, NW&S) also attended the meeting.

The 6th meeting of Committee on Farakka Impact Study

Shri J. Chandrashekhar Iyer, Member(D&R) attended the 6th meeting of Committee for "Study on the issue of Flood and Siltation in River Ganga and its Tributaries due to Farakka Barrage in the state of Bihar" which was held under the chairmanship of Dr R. K. Gupta, Chairman, CWC on 29.07.2022 to discuss the progress of the project. In the meeting representatives from CWC, GFCC, Government of Bihar, & NIH Patna participated. The objectives of the study are to carry out the backwater study of Farakka Barrage to

establish its impact on the river in the scenario of different return period floods, identify the impact of Farakka Barrage with reference to operating policy on flooding and siltation in River Ganga and its aforesaid tributaries in the entire State of Bihar and to assess silt load and sedimentation with respect to different return period of floods and to identify the adverse effects emerging from flood peaks on account of sedimentation in the River Ganga.

First Implementation Support Mission by World Bank for DRIP Phase II

First Implementation Support Mission by World Bank was conducted in two phases. The first phase of the mission was held during 11-13th July 2022 for eight (8) Implementing Agencies (IAs) at Madurai (Tamil Nadu). Second phase of the mission covered remaining eight (8) IAs at Dehradun (Uttarakhand) during 15-17th July 2022. A meeting was also held with seven (7) new DRIP States (BBMB, DVC, Andhra Pradesh, Telangana, Goa, Punjab and Jharkhand) on 26.07.2022 followed by a wrap-up meeting with all IAs on 28.07.2022 at New Delhi. During the review mission, World Bank reviewed the project progress and presented IA-wise findings with emphasis on SPMU strengthening, Environment & Social aspects, Hiring of Experts (CS&QA,



E&S, Procurement etc), Contracts and various bottlenecks in the project implementation. The meetings were attended by the Chief Engineer, DSO along with Director, DSR Dte and other officials of DRIP in CWC.

CWC visit to Polavaram Project

The officers from Designs (NW&S) Unit of CWC visited the ongoing Polavaram project on 31.07.2022 as the project witnessed the high flood discharge during July 2022.

CWC team comprised of Shri Kayum Mohammad, Director, CMDD (NW&S), Shri Deepak Chandra Bhatt, Director, Embankment (NW&S) and Shri Gaurav Tiwari, Assistant Director, Emb. (NW&S), CWC. The officers from WRD, Government of Andhra Pradesh accompanied the CWC team. The joint team visited Spillway, Guide bund, proposed embankment dam portions of Gap-I and Gap-II, Upstream coffer dam, Downstream coffer dam and also reviewed the work done in wake of the high floods & general progress of



the works. Joint team also visited the CWC Polavaram G&D site.

Review meeting regarding Integrated Water and Crop Information Management System (IWCIMS) on status of project report Submitted by NWIC/ WAPCOS

A meeting to review the status of Project Details Documents of Integrated Water and Crop Information Management System (IWCIMS) was held on 06.07.2022 under the chairmanship of Shri J. Chandrashekhar Iyer, Member(D&R),

CWC. Member (D&R), CWC emphasized on various aspects in NWIC, WAPCOS, Integrating the DHARMA portal etc with regards to Integrated Water and Crop Information Management System (IWCIMS).

The 1st Meeting of the committee for "Preparing the Guidelines for preparation of DPR in respect of SMI & RRR of Water bodies schemes"

The First Meeting of the committee for "Preparing the Guidelines for preparation of Detailed Project Report (DPR) in respect of projects of surface Minor Irrigation (SMI) and Repair, Renovation and Restoration of Water Bodies (RRR of

Wbs) schemes" was held in Hybrid mode and was attended by Shri Vijai Saran, Chief Engineer, Design (E&NE) at CWC, Sewa Bhawan, R. K. Puram, New Delhi on 05.07.2022.

Meeting regarding National projects (Renuka ji & Lakhwar project)

Renukaji Dam Project, one of the National Project, envisages construction of a 148-meter-high Rockfill dam across river Giri in Sirmour district of Himachal Pradesh with live storage of 498 Million Cubic Meter (MCM). The benefits envisaged are water supply to NCT of Delhi and 40 MW (installed capacity) of incidental power. The project is proposed to be executed by Himachal Pradesh Power Corporation Limited (HPPCL). Lakhwar Multipurpose Project, also a National Project, envisages construction of a 204 m high concrete dam across river Yamuna in Uttarakhand with live storage of 330.66 MCM. The total installed capacity of the project is 300 MW (3X100MW), would provide irrigation benefit to 33,780 ha and 78.83 MCM of drinking and industrial water supply. The project also envisages construction of Katapather Barrage at 13.6 Km downstream of Lakhwar dam.

A Meeting under the Chairmanship of Union Home Secretary was held on 26.07.2022 to discuss Work and issues on

progress of the project covering construction, targeted completion, release of water-schedule and quantum of water in respect of Lakhwar Multipurpose Project (National Project) and Renukaji Dam Project(National Project).

In the meeting, regarding Renukaji Dam Project in Himachal Pradesh, Union Home Secretary observed that for execution and progress of work, there should not be any issue as all issues are clear. He advised CWC and the Govt. of Himachal Pradesh to jointly sit and finalize the design at the earliest. It was also pointed out in the meeting that the tender needs to be finalized and work entrusted at the earliest.

Further, regarding Lakhwar MPP, Union Home Secretary observed that with regard to execution and progress of work, there doesn't seem any issue and advised CWC, Ministry of Jal Shakti and Chief Secretary, Government of Uttarakhand to put the project on priority and ensure that work commences at the earliest.

Upper Siang Multipurpose Storage Project (USMSP)

Meeting of Upper Siang Multipurpose Storage Project (USMSP) was attended by Shri Vijai Saran, Chief Engineer;

Design (E&NE) held at Committee Room, 1st Floor, Shram Shakti Bhawan, Rafi Marg, New Delhi on 27.07.2022.

Flood Situation in the country -July 2022

Regular Flood Forecasting Activity commenced on 01.05.2022 in Brahmaputra and Barak and Jhelum basins. During the period from 1st May to 31st July 2022, 3520 flood forecasts (2492 Level and 1028 Inflow) were issued, out of which 3340 (2395 Level and 945 Inflow) forecasts were within limit of accuracy with a percentage accuracy of 94.88%. 64 nos. of Red Bulletin (for Extreme flood situation) and 124 nos. of Orange Bulletin (for severe flood situation) were issued in the month of July from Central Flood Control Room.

Summary of Flood Situation during 01.05.2022 to 31.07.2022

Extreme Flood Situation

Five FF station observed Extreme Flood Situation during.

Sl. No	State	District	River	Station	Period	
					From	To
1.	Assam	Nagaon	Kopili	Kampur	15/05/2022 16/06/2022	21/05/2022 22/06/2022
2.	Bihar	Kishanganj	Mahananda	Taibpur	29/06/2022	29/06/2022
3.	Telangana	Bhupalpally	Godavari	Kaleswaram	14/07/2022	15/07/2022
4.		Kumarambheem	Wardha	Sirpur(T)	14/07/2022	17/07/2022
5.	Andhra Pradesh	Alluri Sitharama raju	Sabri	Chinturu	15/07/2022	19/07/2022

Twenty one flood monitoring station observed Extreme flood situation during.

Severe Flood Situation for FF Stations

49 FF Stations observed Severe Flood Situation in the States of Assam, Bihar, Jammu & Kashmir, West Bengal, Tamilnadu, Andhra Pradesh, Telangana, Chhattisgarh, Odisha, Uttar Pradesh and Maharashtra.

28 FF Stations in Assam, Bihar, Uttar Pradesh, Tripura, West Bengal, Uttarakhand, Maharashtra, Andhra Pradesh and Rajasthan observed Above Normal Flood Situation.

Reservoirs having Inflow above threshold limit

52 reservoir received inflows above their threshold limit in Andhra Pradesh, Chattisgarh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Tamilnadu, Telangana and Uttar Pradesh.



Comments related to IS Codes

Comments received on IS 6934:2014 (Hydraulic Design of High Ogee Overflow Spillways) were discussed/resolved and code was sent in wide circulation. Other than this, IS 12804 (Criteria for Estimation of Aeration Demand for Spillways and Outlet Structures), Guidelines for Design and

Construction of Concrete faced Rock fill Dam, Hydraulic Design considerations for tunnel and shaft spillways, Hydraulic design of stepped spillways were discussed in the meeting and important decisions were made.

Financial Progress of Schemes as on 31.07.2022

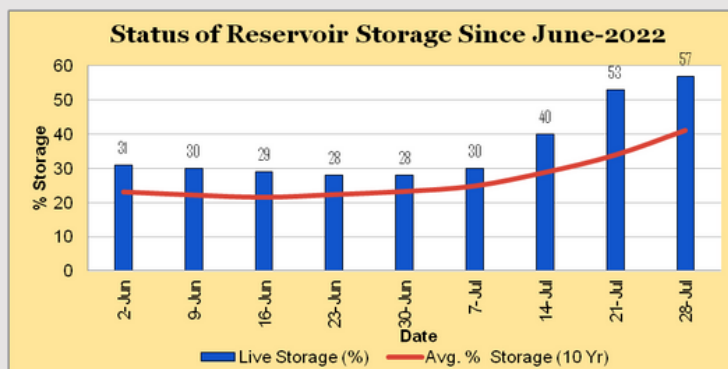
(Amount rounded-off in ₹ Crore & Specific to CWC's component)

Sl. No.	Scheme/Component Name	BE 2022-23	Expenditure	Expenditure (in %)
1.	Development of Water Resources information System (DWRIS)	185.00	38.385	20.75%
2.	Investigation of Water Resources Development Schemes (IWRD)	08.000	1.6784	20.98%
3.	Flood Management & Border Areas Programme (FMBAP)	23.203	2.7951	12.05%
4.	Direction & Administration(D&A)-Major Works and OE(SAP)	11.15	0.132	1.18%
5.	National Hydrology Project	44.37 (RE)	2.1467	4.84%
6.	Dam Rehabilitation and Improvement Project (DRIP) Phase-II	100.00	0.600	0.60%

Reservoir Monitoring

CWC is monitoring live storage status of 143 reservoirs of the country on weekly basis and is issuing weekly bulletin on every Thursday. Out of these reservoirs, 46 reservoirs have hydropower benefit with installed capacity of more than 60 MW. The total live storage capacity of these 143 reservoirs is 177.464 BCM which is about 68.83% of the live storage capacity of 257.812 BCM which is estimated to have been created in the country.

As per reservoir storage bulletin dated 28.07.2022, the total live storage available in these reservoirs is 101.472 BCM which is 57% of total live storage capacity of these reservoirs. However, last year the total live storage available in these reservoirs for the corresponding period was 85.541 BCM and the average of last 10 years



live storage was 72.789 BCM. Thus, the live storage available in 143 reservoirs as per the bulletin dated 28.07.2022 is 119% of the live storage of corresponding period of last year and 139% of storage of average of last ten years.

Training Activity by NWA, Pune during July-2022

Sr. No.	Name of Training Programme	Duration	No. of Trainee per course	Category
1	Introduction to Google Earth Engine and its application in Water Resources Management (Under NHP)	27 June - 08 July 2022	27	Technical

अद्धिः सर्वाणि भूतानि जीवन्ति प्रभवन्ति च।
तस्मात् सर्वेषु दानेषु तयोदानं विशिष्यते॥

जल से संसार के सभी प्राणी उत्पन्न होते हैं और जीवित रहते हैं. अतः सभी दानों में जल का दान सर्वोत्तम माना जाता है.

Data Corner- State/UT wise sanctioned cost and expenditure incurred under National River Conservation Scheme (NRCP):

Sl. No.	States	River	Sanctioned Cost	Expenditure incurred by State Govt. as on June, 2022
1	Andhra Pradesh	Godavari	110.21	19.59
2	Goa	Mandovi	14.10	13.50
3	Gujarat	Sabarmati, Mindhola, Tapi	1779.78	1010.51
4	Jharkhand	Subarnrekha	3.14	0.98
5	Jammu and Kashmir	Devika and Tawi	186.74	49.00
6	Karnataka	Pennar, Bhadra, Tungabhadra, Cauvery, Tunga	66.25	53.59
7	Kerala	Pamba	18.45	33.69
8	Madhya Pradesh	Tapti, Wainganga, Narmada	20.16	9.67
9	Maharashtra	Krishna, Panchganga, Godavari, Tapi, Mula Mutha	1182.86	214.91
10	Manipur	Nambul	97.72	42.22
11	Nagaland	Diphu and Dhansiri	78.65	54.42
12	Odisha	Brahamini, Mahanadi, Coastel Area	92.74	90.25
13	Punjab	Satluj, Beas & Satluj, Ghaggar	774.43	797.41
14	Sikkim	Rani Chu, Tista	463.05	225.54
15	Tamil Nadu	Cauvery, Adyar, Cooum, Vaigai, Vennar, Tamrabarani	908.13	901.17
16	Telangana	Godavari, Musi	345.72	346.83
	Total :		6142.12	3863.28

Source: <https://pib.gov.in/PressReleaseDetail.aspx?PRID=1845896>

Water Sector-News

- Centre set to monetize economic benefits of Ganga River Basin (The Morning Standard, 02.07.2022)
- Frothing in Yamuna a rare sight in monsoon season, say experts (The Sunday Standard, 03.07.2022)
- MHA to form body to decide city's share of water from Renuka Dam (The Pioneer, 10.07.2022)
- Ammonia, phosphate levels way beyond safety limits in Yamuna (Mint, 12.07.2022)
- A dam without reinforced concrete survives for more than 70 years (The Hindu, 19.07.2022)

- KRMB urged to stop AP canal work (Telangana Today, 21.07.2022)
- Jal Jeevan Mission has hit 51% mark (Mint, 21.07.2022)
- No investment clearance for Kaleshwaram : Centre (The Hindu, 22.07.2022)
- Renegotiate Indus Water Treaty with Pak : Parl panel (The Tribune, 23.07.2022)
- Ken-Betwa project : New body to enforce environment management (The Times of India, 25.07.2022)
- Water conservation, mgmt projects with Israel on cards (The Tribune, 28.07.2022)
- Godavari dams reduce sediment load, study warns of spike in coastal erosion (The Times of India, 31.07.2022)

Gallery/Azadi Ka Amrut Mahotsav



Visit of 4 Hydrological Observation sites and 3 stand alone telemetry stations maintained by Upper Cauvery Sub-Division in Cauvery Basin on 21st-22nd July, 2022



Shri S.K. Sibal, Chief Engineer, Designs (N&W) and Shri N.S. Shekhawat, Director, HCD(N&W) attended 30th Council Meeting of the Northern Zonal Council held on 09.07.2022 in Jaipur, Rajasthan.



Shri Dheeraj Pandey, Assistant Director, BCD (E&NE) visited Dhanbad District, Jharkhand to monitor the progress of ongoing and completed works under “Jal Shakti Abhiyan – Catch The Rain 2022”(JSACTR) during 04.07.2022 to 06.07.2022.



Shri Samir Kumar Shukla (Director, CWC & Shri Prabhat Kumar(Dy. Director), CWC accompanied Additional Secretary, DoWR, RD & GR, Ministry of Jal Shakti, Govt. of India along with Project Director, DRIP Phase-II & Phase-III in visit to Bhakra Beas Management Board (BBMB) for meeting with the Chairman (BBMB) on 12.07.2022

History- Farakka Barrage Project – A Dream Comes True

Calcutta (now Kolkata) Port

Calcutta (now Kolkata) is one of the largest and the most important commercial city in India. The Port of Calcutta is situated on the lower Hooghly at a distance of about 200 km from the sea. The hinterland of the Port covers over a million sq km with a population of 200 million. Nepal and Bhutan also use the Port of Calcutta. The volume of traffic handled by Calcutta Port reached a peak of over 1800 ships and 11 million tons in 1964-66. Since then this traffic was steadily been reducing. The reasons for the progressive deterioration of the Calcutta Port were not far to seek.

The River Hooghly

The river Hooghly is formed by three off-takes from the Ganga, namely Bhagirath, Jalangi and the Churni. Till about three centuries ago, the main Ganga was flowing through the Bhagirath-Hooghly system. Thereafter the river developed a tendency to flow mainly through its left arm, i.e. Padma. Consequently, Bhagirathi became relegated to the position of a spill channel. The deterioration of the river became significant in the 19th Century and alarming in the 20th century. Since 1918, the flow into the Bhagirathi channel ceases during the dry season thus depriving the Hooghly of the dry weather flow for the last 57 years. The mud and sand that enter into Hooghly during the monsoon are not being moved out to the sea due to want of upland flow during the non-monsoon period. On the other hand, tides from the sea push the silt upstream and aggravate the deposition of sand in the river resulting in reduction in the draft necessary for the ships to approach the port of Calcutta through the riverine channels thus causing navigational hazards. Further the gradual choking up of the upland fresh water channels has resulted in the rise of salinity of the Hooghly which supplies water to Calcutta and the adjoining industrial areas.

Need for the Barrage

Several proposals for improving Bhagirathi Hooghly system were considered in the past. Even as far back as in 1958 a barrage across the Ganga at Rajmahal was envisaged by the British engineer, Sir Arthur Cotton. Subsequently also, a number of experts had gone into this problem and came to the same conclusion. The necessity for a barrage across the Ganga to ensure augmentation of head waters was also accepted during the partition of India while fixing the boundaries between India and the then Pakistan in this region.

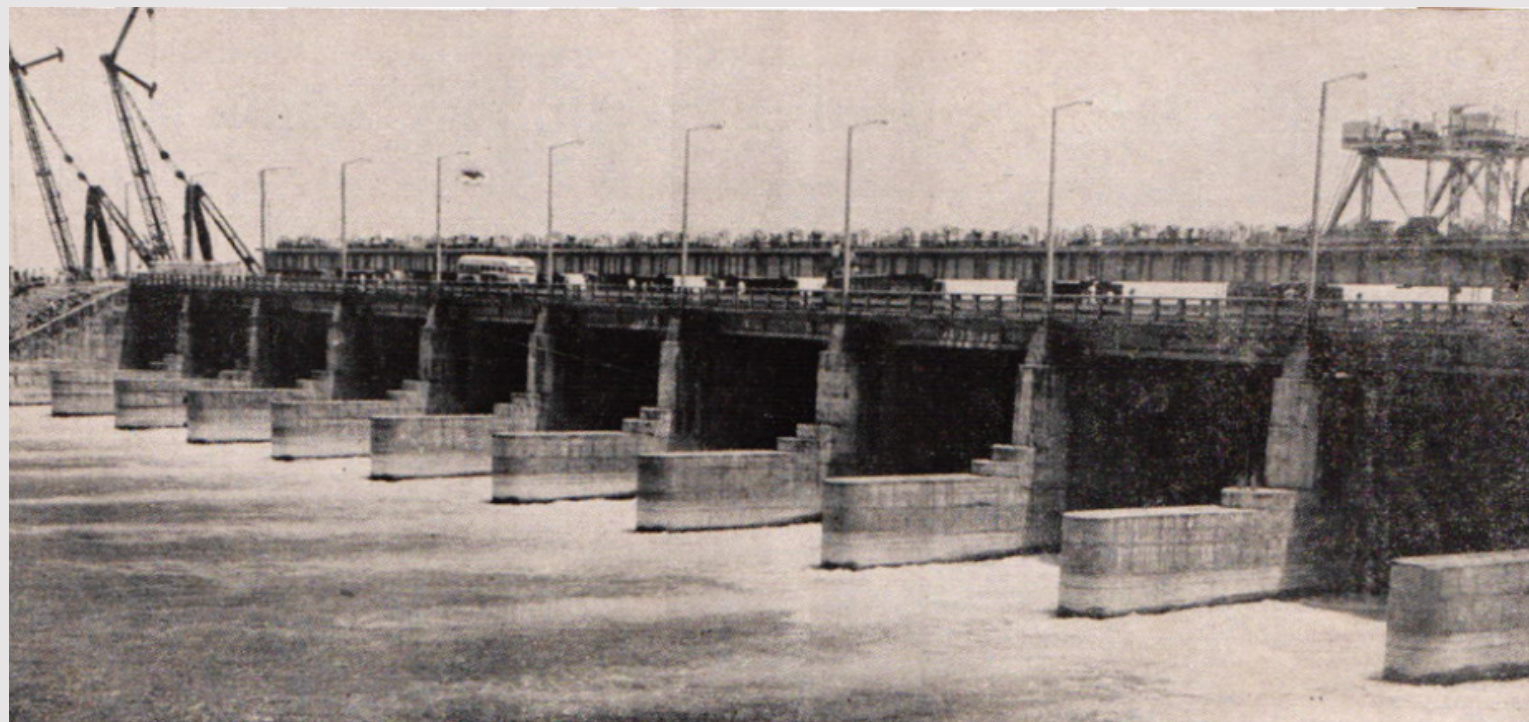
The approval for the construction of the project for the preservation of the port of Calcutta was accorded by the Ministry of Transport, Government of India, in 1960. The execution of the Project, however, became the responsibility of the erstwhile Ministry of Irrigation and Power in view of the experience this Ministry had in handling major river valley projects. The actual work of construction of the Barrage commenced in 1963-64.

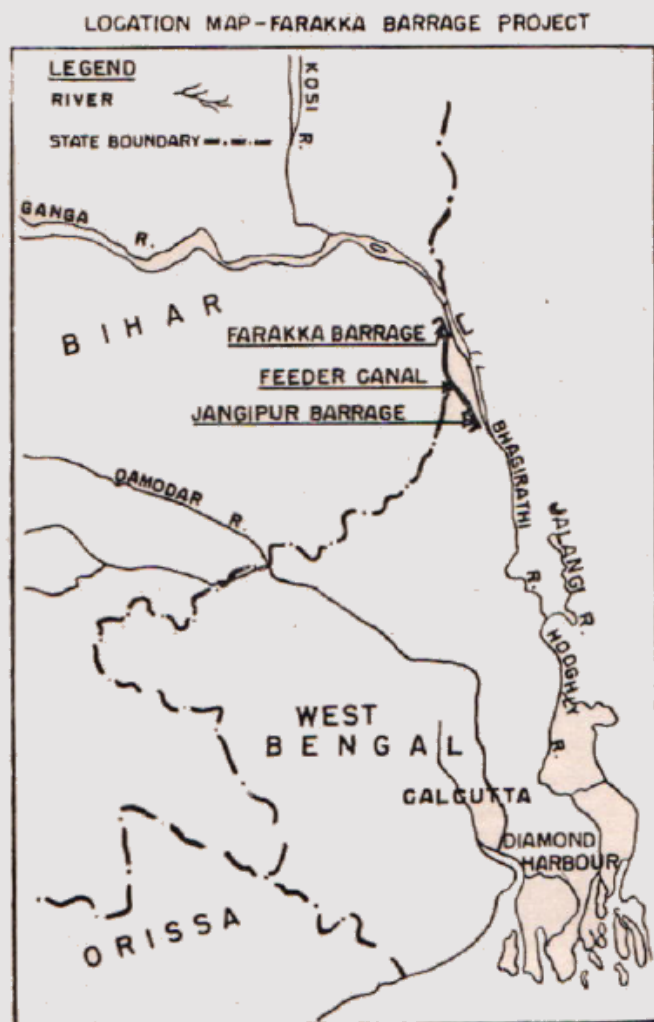
Largest Project of its kind in India

This was one of the largest projects taken up. The river Ganga at this point has a perennial flow throughout the year. Even at the time of taking up river diversions works, flow was of the order of 3000 cu m per second or more. A large part of the construction season had to be spent for the construction of coffer dam which was required before taking up permanent works for construction.

The Barrage

The Barrage is founded on fine sand in a seismic zone. The Barrage is over two km long and has 109 bays and is designed to pass 76400 cu m per second. The piers of the Barrage are designed to accommodate two broad gauge railway lines and four lane national highway.





Feeder Canal – larger than Suez

The feeder canal, which carries the diverted water into the Bhagirathi, is 38.3 km long and is one of the largest man-made canals. Its bed width is 151 m with a water depth of 6 m. This is larger than the famous Suez canal. Other works of the project include Jangipur Barrage, navigation locks and bridges across the feeder canal.

Indian Engineering Skill

All the technical problems relating to the construction of the huge barrage as well as other structures were tackled by the Indian Engineers adopting unique construction techniques. During the peak period of construction, there were over 4000 workers employed by the Department alone besides thousands of labourers employed by the various contractors.

Benefits

The benefits to be derived from this project are numerous. Besides fulfilling the main purpose of providing adequate upland discharges into the Hooghly throughout the year, this project has already opened up

a direct and all-weather communication link between the north eastern part of India with the rest of the country. A broad gauge railway line was opened over the barrage in 1971 and the national Highway was also opened to traffic in 1972. Earlier, at this point, both railway wagons and road transport vehicles had to be ferried across the river which was laborious and time-consuming.

Navigation

The feeder canal also provides facilities for inland navigation connecting Bhagirathi with the Ganga linking Calcutta up to Allahabad (now Prayagraj) in Uttar Pradesh.

Indo-Bangladesh Cooperation

The Feeder Canal started running for the first time on the morning of 21 April 1975 following the Indo-Bangladesh Agreement reached in Dacca on 18 April 1975. This Agreement is a breakthrough for the Farakka Barrage issue and sets an outstanding example of mutual understanding and co-operation between the two neighboring countries in the development of an international river. With the commencement of the operation of the project, it will be possible to make further progress in achieving final agreement to the benefit of both the countries.

FARAKKA BARRAGE PROJECT	
<i>(Salient Features at a Glance)</i>	
Barrage	
LENGTH	2244.4 m (7363.5 ft)
NUMBER OF BAYS	109
SPAN OF EACH BAY	18.3 m (60 ft) clear
DESIGN DISCHARGE	76400 cu m (2.7 million cu ft) per sec
Pond level	+ 21.9 m (+ 72 ft)
CREST LEVEL OF SPILLWAY	+ 15.8 m (+ 52 ft)
Head-Regulator	
POND LEVEL	+ 21.9 m (+ 72 ft)
FULL SUPPLY LEVEL AT HEAD	+ 21.6 m (+ 71 ft)
DESIGN DISCHARGE	1135 cu m (40,000 cu ft) per sec
CLEAR WATERWAY	11 bays of 12.19 m (40 ft) each
CREST LEVEL	+ 18.1 m (+ 59.3 ft)
Feeder Canal	
LENGTH	38.3 km (23.8 mile)
DESIGN DISCHARGE	1135 cu m (40,000 cu ft) per sec
BED WIDTH	150.9 M (495 FT)
FULL SUPPLY DEPTH	6.1 m (20 ft)
Jangipur Barrage	
LENGTH	212.8 m (698 ft)
NUMBER OF BAYS	15
SPAN OF EACH BAY	12.19 m (40 ft)
CREST LEVEL	+ 12.8 m (+ 42 ft)
Cost Rs. 156.29 crore	



Central Water Commission

An attached office of Dept. of Water Resources,
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Ministry of Jal Shakti, Govt. of India

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