JAL-Vikas

July 2021

जल विकास

जुलाई 2021

राष्ट्रीय जल विकास अभिकरण की आंतरिक पत्रिका

(Inhouse Bulletin of National Water Development

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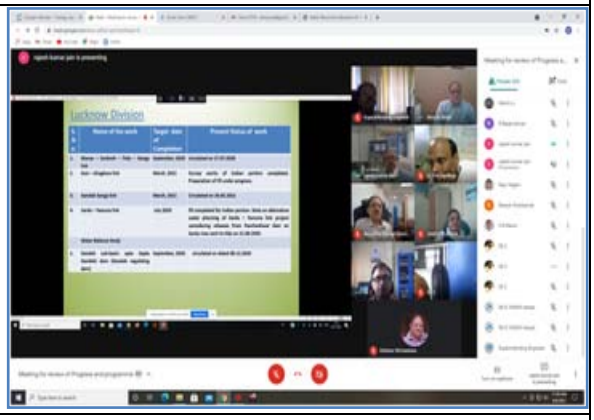
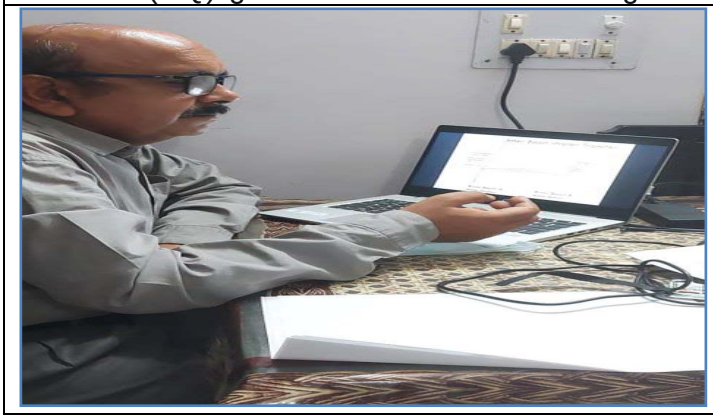
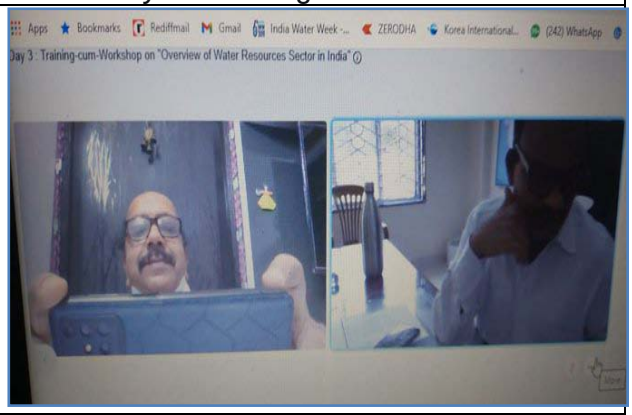
Activities of NWDA during the Quarter at a Glance



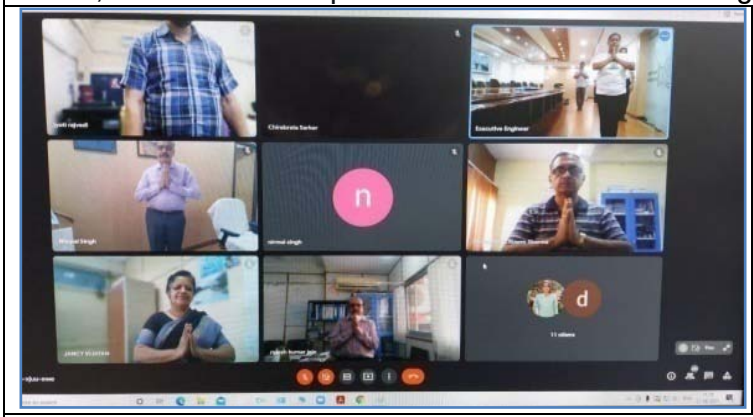
Senior Officers Meeting Chaired by DG, NWDA on 06.04. 2021 for Review of Programme and Progress of Planned and Targetted Works of NWDA.

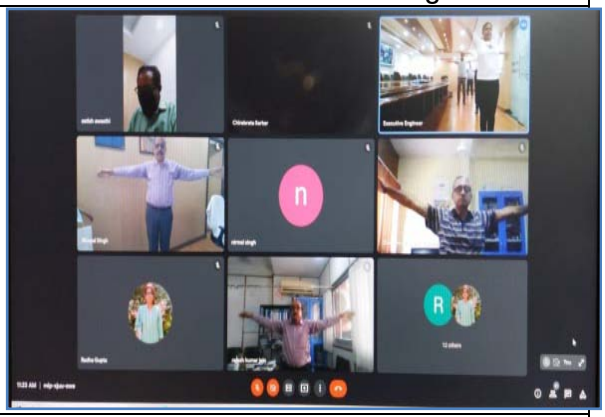
In Commemoration of 102th Anniversary of Jallianwala Bagh Incident, Officials of NWDA(HQ) gave tribute to Freedom Fighters of India by observing 2 minute silence.





Virtual web meet hosted by National Water Academy, Pune on 28.04.2021, CE(HQ) ,NWDA made a presentation on “Interlinking of Rivers-Issues and Challenges”.





The 7th International Yoga Day 2021 was celebrated in NWDA (HQ) in Virtual Format on 21.06.2021 with the support of a Yoga Instructer.

From Director General's Desk

It gives me great pleasure in placing the quarterly issue of "Jal Vikas-July 2021" of NWDA. The issue covers activities of the quarter starting from 01st April to 30th June 2021. The in-house bulletin gives a recap of works and functions of NWDA particularly with respect to Interlinking of Rivers (ILR) Programme of the Department of Water Resources, River Development & Ganga Rejuvenation (DoWR, RD&GR), Ministry of Jal Shakti (MoJS), Government of India.

During the preparation of the issue, the deadly pandemic of Covid-19 in the form of second wave struck almost the entire length and breadth of our country making the entrusted works of collection of data and field investigations and physically interacting with officials of field units and at various levels were became a hericulian task.

However, inspite of the constraints, NWDA Officials jointly acted for conducting the meeting of Sub-Committee for Sytem Studies of the SCILR; Review meeting for finanilizing the work programme of NWDA for the year 2021-22 and achieving the targets in preparing the DPRs, FRs/PFRs of ILR proposals coming under the National Perspective Plan (NPP) pertained to Peninsular as well as Himalayan Rivers Development Components and Intra-State Link Projects as suggested by various State Governments; and Post DPR Activities and attainment of related targeted works. The achievements that could accomplish during the period were completion of the draft DPR of Cauvery (Kattalai) – Vaigai – Gundar and circulation of it to party States; PIB memo for financing and setting up of SPV for Ken-Betwa Link Project Authority for the implementation of Ken-Betwa Link Project to various Union Ministries and Departments for their comments; and deliberations and processing of various parameters for finalizing /carrying out System Studies of Mahanadi-Godavari; Manas – Sankosh – Tista – Ganga; Farakka – Sunderbans; Ganga – Damodar – Subarnarekha and Subarnarekha – Mahanadi Link Projects.

While going through the inside pages of the magazine, you can find an article on "Possibility of Solar Power Generation through Canal Top Power House on Par-Tapi-Narmada Link Canal Project"; Technical Digest; Water Resources in Media; Glimpses of NWDA briefing about the meetings and activities conducted by NWDA; Involvement of NWDA in PMKSY; Appointments, Promotions and Retirements of NWDA Officials; Family Corner Articles, and Obituary of NWDA Officials who lost their lives due to Covid-19 Pandemic.

In the end I wish to express my sincere thanks to the entire Editorial Team of Jal Vikas in assimilating the articles and bringing the July 2021 Issue of Jal Vikas to an informative one. Our efforts to further improve and expand the Jal Vikas Issues of NWDA will continue and would be possible by your timely contributions, supports and suggestions.

(Bhopal Singh)
Director General

Contents

The views and opinions expressed by the Author is hisown and not necessarily of NWDA

Functions of National Water Development Agency

The then Ministry of Irrigation [now Ministry of Jal Shakti; Department of Water Resources, River Development & Ganga Rejuvenation (MoJS; DoWR, RD & GR)], Government of India,formulated a National Perspective Plan (NPP) in the year 1980 for optimum development and utilization of Water Resources of our country India. The NWDA was set up as a Society under the Ministry in July 1982 to give a feasible shape to the proposal of the NPP with the following functions:

- To carry out detailed surveys and investigations of possible reservoir sites and interconnecting links in order to establish feasibility of the proposal of Peninsular Rivers Development Component (1981)* and Himalayan Rivers Development Component (1994)* forming part of the NPP for Water Resources Development prepared by the then Ministry of Irrigation (now MoJS; DoWR, RD & GR) and Central Water Commission(CWC).

- To carry out detailed studies about the quantum of water in various Peninsular River Systems (1981)* and Himalayan River Systems (1994)* which can be transferred to other basins/States after meeting the reasonable needs of the basin/States in the foreseeable future.

- To prepare feasibility report of the various components of the scheme relating to Peninsular Rivers Development (1981)* and Himalayan Rivers Development (1994)*.

- To carry out surveys and investigations work and prepare Detailed Project Reports(DPRs) of river linkproposals under the NPP for Water Resources Development and thereafter approach concerned States for obtaining concurrence for implementationof the project (2020)*.

- To prepare Pre – Feasibility Reports (PFRs)/ Feasibility Reports(FRs) (2006)*/ DPRs (2011)* of the Intra – State links as may be proposed by States. The concurrence of the concerned co-basin States for such proposals may be obtained before taking up their FRs / DPRs.

- To undertake/construct/repair/renovate / rehabilitate / implement the projects either of its own or through an appointed agency /organization/PSU or Company and the projects forming part of Interlinking of Rivers, for completion of projects falling under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)of which projects under Accelerated Irrigation Benefits Programme (AIBP) are also included and similar other projects (2016)*.

- NWDA to act as a repository of borrowed funds or money received on deposit or loan given on interest or otherwise in such manner, as directed by the then Ministry of Water Resources, River Development and Ganga Rejuvenation (now theMoJS; DoWR, RD & GR) and to secure the repayment of any such borrowed funds/money deposits/loan etc. by way of mortgage, pledge, change or lien upon all or any other property, assets or revenue of the society both present and future (2016)*.

- To do all such other things the Society may consider necessary, incidental, supplementary or conducive to the attainment of above objectives (1981)*.

*Year of Gazette Notification

Highlights of NWDA Activities during the Quarter

- M/S ASITE made a presentation on 01.04.2021 regarding indicative scope of Project Management Consultancy(PMC) in the Committee Room, NWDA , Palika Bhawan, New Delhi,
- 5th meeting of the Core Group of Scientific Committee for India Water Week 2021 held on 01.04.2021 at Sewa Bhawan, New Delhi,
- DG, NWDA held a Virtual Meeting on 06.04.2021 with Officials of NWDA and finalized the Work Programme of NWDA for the year 2021- 22,
- DG, NWDA reviewed the status of appraisal of the three projects viz., Lower Orr, Kotha Barrage and Bina Complex Projects of Ken-Betwa Link Project with CWC Officials on 07.04.2021,
- DG, NWDA reviewed the progress of Development of Landscape Management Plan (LMP) and Monitoring with respect to Ken-Betwa Link Project Phase-I in Panna Tiger Reserve with Officials of Wildlife Institute of India (WII), Dehradun and field units of NWDA on 09.04.2021 and decided to extend the time period for completing the LMP study being carried by WII, Dehradun till September, 2021,
- DG, NWDA attended the 7th Water Tech Talk- National Water Mission held on 09.04.2021,
- DG, NWDA attended the review meeting of Member (WP&P), CWC regarding the integration of Parbati-Kuno-Sindh(P-K-S) Link Project and Eastern Rajasthan Canal Project (ERCP) on 16.04.2021 at CWC, Sewa Bhawan, New Delhi,
- DG, NWDA attended the 25th Water Talk-National Water Mission held on 16.04.2021,
- DG, NWDA has requested the Additional Principal Chief Conservator of Forests (APCCF), Government of Madhya Pradesh vide letter dated 19.04.2021 to expedite the process of verification of revenue land for transfer to the forest department for Compensatory Afforestation & Submission of Report to the Ministry of Environment and Forests & Climate Change (MoEF & CC) for accord of Stage-II forest clearance for expeditious implementation of the Ken-Betwa Link Project,
- A revised format as finalized by the Sub-Committee for System Studies for taking up System Studies of MSTG, GDS, FS and SM Link Projects was circulated to concerned Organizations/Academic Institutions on 20.04.2021,
- CE (HQ), NWDA attended the 235th meeting of Executive Committee of CBIP held on 28.04.2021,
- CE (HQ), NWDA presented a Power Point Presentation on 'Interlinking of Rivers-Issues and Challenges" during the training cum workshop on Overview of Water Resources Sector in India organized by National Water Academy on 28.04.2021,

- DG, NWDA and CE (HQ) attended the Foruth Meeting of the Committee for planning BRICS Water Ministers Meeting & BRICS Water Forum during 7th India Water Week (IWW)-2021 through Virtual Platform on 04.05.2021,
- DG, NWDA attended 48th CDRC Meeting of Classified Data Release Committee (CDRC) through Video Conference on 12.05.2021,
- DG, NWDA attended 26th Water Talk National Water Mission through virtual platform on 21.05.2021,
- DG, NWDA attended the Third Meeting of the Organising Committee of 7th IWW-2021 through Video Conference on 03.06.2021,
- DG, NWDA held a meeting with Additional Secretary regarding NIRA on 08.06.2021,
- DG, NWDA held a meeting to review the preparatory arrangements of IWW-2021 in the Chamber of DG, NWDA, Palika Bhawan on 09.06.2021,
- DG, NWDA held a meeting regarding Participation in IWW-2021 by Israel Embassy through Video Conference on 10.06.2021,
- DG, NWDA attended 9th Water Tech Talk (National Water Mission) - 'Isotope Applications in Water Resources Investigations and Management with Indian Success Stories' through Video Conference on 11.06.2021,
- DG, NWDA attended the Internal Review Meeting by Ministry, hosted by Polavaram Project Authority on 11.06.2021 through Video Conference,
- DG, NWDA held a discussion with Hon'ble Minister of Jal Shakti, DoWR, RD&GR, regarding reviewing the organisation of 7th IWW-2021 considering Covid 19 Pandemic in the Chamber of Hon'ble Minister, MoJS on 14.06.2021,
- DG, NWDA attended the meeting regarding 'Review of National Projects' taken by Hon'ble Minister, MoJS in the Chamber of Hon'ble Minister, MoJS on 16.06.2021,
- DG, NWDA attended meeting regarding revised flyer for attending the 27th Water Talk – National Water Mission, MoJS through Video Conference on 18.06.2021,
- DG, NWDA attended the meeting regarding नगर राजभाषा कार्यान्वयन समिति (दक्षिण दिल्ली – 03) through Video Conference on 21.06.2021,
- DG, NWDA attended the Monthly Review Meeting taken by Secretary (WR,RD&GR) through Video Conference on 22.06.2021,
- DG, NWDA attended the meeting taken by Hon.ble Minister Jal Shakti regarding Review of Priority "Interlinking of Rivers Projects" in the Chamber of Hon'ble Minister of Jal Shakti, Shram Shakti Bhawan, New Delhi on 23.06.2021,
- DG, NWDA attended the meeting with CWC in respect of DVG & DEG links through Video Conference on 29.06.2021.

Possibility of Solar Power Generation through Canal Top Power House on Par-Tapi-Narmada Link Canal Project

* D. K. Sharma

1. 0 General

India's position in the region between tropic of Cancer and tropic of Capricorn attracts more solar energy. With the aim to create a collaborative platform for increased deployment of solar energy technologies and improve access to solar energy, India has put foundation stone for the formation of International Solar Alliance (ISA) with initiation lauched by Hon'ble PM of Government of India in November 2015 in Paris and was conceived as a coalition of solar-resource-rich countries to address their special energy needs. The ISA will provide a dedicated platform for cooperation, which help global community, including governments, bilateral and multilateral organizations, corporates, industry, and other stakeholders to achieve the common goal of increasing the use and quality of solar energy in meeting energy needs of prospective ISA member countries in a safe, convenient, affordable, equitable and sustainable manner.

Around 120 countries have already been agreed on it and more are interested to be the part of it. India being headquarter of ISA would be a better market for the development of solar energy in the years to come. India is a densely populated country and would be a big concern for solar energy development, as availability of dedicated land for solar PV plant as of now requires 4.5 to 5 acres for 1 MW, which is comparatively high. The other options available in terms of rooftop solar, which is also finding difficulty because of demand side concerns.

Though India's per capita energy consumption has crossed 1,000 kWh mark but it is still very less than that of global average and developing countries like China (around 4,000 kWh). As India now thinking more strategically for its energy security as 80% of energy needs are met through imports of fossil fuels, in this regard renewable energy is going to play a pivotal role of which solar will be a leader.

Solar energy has been recognised as the most promising source of renewable energy all over the world and now it has been considered as the main source of energy. Solar energy has the potential to replace the century old energy harnessing technology, which was highly carbon intensive. As per the recent International Energy Agency (IEA) declaration, renewables is now in mainstream and the world now is talking more on it in terms of carbon efficiency because of global environment and related warming concerns, which is a big threat to the humanity.

Solar and wind is surpassing the other renewables to be the largest share in renewable market. The drastic downfall in the cost of solar modules has accelerated the growth and led the energy enthusiasts all over the world to think of it. The PV module prices are declined by around 25% during the last years – which facilitated the bidders to build projects at competitive rates.

2.0 Solar Energy Scenario

Indian government has targeted 100 GW of Solar PV by 2022 of which 60 GW is ground-mounted solar and 40 GW is rooftop solar. India's strong commitment in Paris during the event of UN's Climate Conference COP 21 in 2015 was a game changer not only for Indian solar market but also for Global ones. India's Intended Nationally Determined Contribution (INDC) prior to Paris Conference talked too much about the renewable energy and decarbonisation of energy mix.

* Superintending Engineer, NWDA, Palika Bhawan, New Delhi-110066.

Solar power capacity in India is expected to shoot up rapidly over the next few years as the Central Government and several State Governments have planned for many solar projects in near future.

2.1 Solar Canal Top Scenario

One of the biggest disadvantages of solar PV plant is the requirement of huge land area of 4.5 acre per MW. The solar PV plants are generally installed away from the point of use. Canal-Top has proved to be most innovative with respect to use of unused area for solar plant. India's proposed target of 100 GW Solar Energy by 2022 requires a toal land of about 1.5 times the size of Delhi, if the entire capacity of Solar PV Plants were installed at one place.

Canal Top Solar PH over Narmada Canal near Vadodara

Considering the country's large irrigation canal network and issues of huge land use for solar plants, the Government of Gujarat put forth the concept of construction of solar PV plant on canal top.

The pilot project of 1 MW Canal Top Solar PV Power Plant was inaugurated on 24 April 2012 on Narmada Branch Canal at Sanand, Gujarat. The project virtually eliminated the requirement to acquire vast tracts of lands and saved evaporation of water from the 750 metres long canal and is presently tackling two challenges simultaneously by providing energy and water security. After the success of the pilot project, Gujarat came up with another 10 MW Canal Top Solar Power Plant on Narmada Canal near Vadodara and is running very successfully. Thereafter, Karnataka Government came up with 1 MW Canal-Top Solar PV Power Plant on Krishna River System recently.

2.2 Benefits of having Canal Top Solar PV Plant

- Saving of huge land area (4.5 to 5 acres per MW).
- Helps reduce CO_2 Emission by 1,280,000 kg per year.
- Helps reduce water loss due to Evaporation approx 90 Lakh Litres per MW annually.
- Generation efficiency increases by 2.5% compared to similar ground mounted solar plant.
- Helps strengthen the power grid.
- Helps reduce the T&D losses as generation is close to consumption point.

3.0 Par Tapi Narmada Link Project

Canal Top Solar PH on Narmada Canal near Vadodara

The PTN Link Project is a multi-purpose scheme with proposals for providing irrigation, hydropower and water supply benefits. Gujarat State is the principal beneficiary and Maharashtra State will get the benefits of irrigation, water supply to tribal areas in Nasik district and power generation. The project will provide an annual irrigation of 2.32 lakh ha utilizing about 1330 MCM of water including water supply and also generate 21 MW of hydropower.

The PTN Link Project comprises construction of Six dams:

i) Jheri dam across river Par in Peint taluka of Nasik district in Maharashtra,
ii) Paikhed dam across river Nar – a tributary of river Par,
iii) Chasmandva dam across river Tan–tributary of river Auranga– in Dharampur taluka of Valsad district in Gujarat,
iv) Chikkar dam across river Ambica, in Ahwa taluka of Dang district,
v) Dabdar dam across river Khapri – a tributary of river Ambica in Ahwa taluka of Dang district, and
vi) Kelwan dam across river Purna – in Ahwa taluka of Dang district in Gujarat.

3.1 Canal-Top Solar PV Power Plant on Par-Tapi- Narmada Link Canal Project

In pursuit of promotion of Renewable Energy Generation and utilization of Canal Top Solar Plant as objectives, NWDA has decided to explore the possibility of developing Canal Top Solar Power Plant on the proposed PTN Canal Project. This would help the country as well as State Government of Gujarat to cater the huge potential of solar energy in an efficient manner and help achieve big solar energy target of 8,020 MW of the Gujarat State by 2022. In this regard, a Detailed Project Report for the proposed Canal-Top Solar PV Power Plant has been prepared by M/s Gujarat Energy Research and Management Institute (GERMI), Gandhi Nagar by considering all the parameters at par with Vadodara region of Gujarat.

The overall capacity considering the total length of the canal, it is estimated that from all the segments of PTN canal, 1138 MW solar power can be generated. Power generations in terms of kilowatt-hours have been calculated using PV Syst simulation software. Standard radiation data for last 25 years have been fetched from NASA-SSE database in the appropriate format and are fed into PV Syst software. As per NASA radiation data, the main results show that the annual energy production for a 1 MW Solar Plant would be of the order of 1,590 MWh/year; the produced useful energy (inverter output) of the plant for the location would be 4.34kWh/kWp/day with performance ratio of 78.4%. As expected, maximum generation is observed in summer months with reasonably good generation in winters.

Further, financial projections for 25 years have been estimated by GERMI with the variable parameters of site - specific project costs and Capacity Utilization Factor (CUF) keeping all other parameters, e.g. discount rate, depreciation, and O&M cost, etc. same as assumed in Central Electricity Regulatory Commission (CERC) order dated 30th March 2016.

Considering the current cost trends of solar PV systems and structure cost, the project cost is estimated as Rs.822 lakh/MW and the operation and maintenance cost are calculated at 1% of the project cost/year. The CUF of the plant is calculated at 18.20% considering the tariff without Accelerated Depreciation (AD) benefit at Rs. 5.60/KWh for 25 years and thereafter degrading by 1% per year relative, as compared to the previous year. It is observed that the Internal Rate of Return (IRR) for the Project is worked out as 6.59%, while the Equity IRR for the Project is 4.49%. Whereas, if we consider with AD, then IRR remains the same; but Equity IRR is increased to 6.04%. Benefit-Cost Ratio for the project is estimated as 1.02.

Source:

Detailed Project Report for Canal-Top Solar PV Power Plant on Par-Tapi-Narmada Link Canal, Gujarat; prepared by Gujarat Energy Research & Management Institute (GERMI), Gandhinagar.

Technical Digest

The technical work programme of NWDA for the year 2021-22 has been finalized by DG, NWDA. The finalized programme pertained to various Investigation Circles and Divisions of NWDA spread across various regions of our Country. The work programme namely contains DPR /FRs/PFRs preparations of various link projects both coming under the NPP as well as Intra-State as proposed by various State Governments of India; post DPR activities; modifications and scrutiny of FRs and Revision of Water Balance Studies (WBS) of River Basins/Sub-basins.

The present status of the progress achieved on the above cited works during the reporting period starting from 1st April 2021 to 30th June 2021 were as follows:

I. Present Status of Preparation of DPRs

Sl. No.	Name of Link Project	Present Status of Preparation of DPRs
1.	Godavari(Inchampalli /Janampet)– Cauvery (Grand Anicut)	The draft DPR of the link project has been completed and circulated to party States. The draft DPR was modified after incorporating the feasible comments of the States and observations of HQs. The final draft report is circulated to the Party States on 28-04-2021.
2.	Krishna (Srisailam) - Pennar	Detailed action plan for DPR preparation is completed
3.	Godavari (Inchampalli) - Krishna (Pulichintala)	Drawings of the FR stage are being modified for the DPR by updating the relevant details.
4.	Bedti – Varada	The DPR is taken up for two alternatives viz., Alt-I: Bedti - Varada NPP link proposal envisaging diversion of 276 MCM and Alt-II: Bedti (Suremane) - Dharma (Varada) link project envisaging diversion of 327 MCM. Preparation of the DPR is in progress.
5.	Cauvery (Kattalai) – Vaigai – Gundar	Draft DPR has been prepared and circulated to the concerned States of Tamil Naidu, Kerala and Karnataka and UT of Puducherry for their observations/comments.
6.	Integration of Parbati-Kuno-Sindh(P-K-S) with Eastern Rajasthan Canal Project(ERCP)	DG, NWDA held a review meeting under the Chairmanship of Member (WP&P), CWC regarding the integration of P-K-S and ERCP link projects on 16.04.2021 at CWC, New Delhi. Draft PFR of this link project was circulated to Madhya Pradesh and Rajasthan Governments. Comments from Rajasthan Government are being attended
7.	Damanganga (Ekdare) –Godavari and Damanganga Val/Vagh) – Vaitarna – Godavari (Kadva Dev) (Intra-State Link projects)	SE, NWDA, Valsad held a meeting with Chief Engineers and Directors of CWC on 20.04.2021 through VC regarding MoUs for consultancy works with CWC and supply of data / reports to CWC for Design. Another meeting was also held in the O/o Chief Engineer (WRD), Maharashtra,Nashik between the Officers of WRD, Maharashtra and NWDA, Nashik on S&I works for the preparations of DPRs of the two link projects of Maharashtra on 31-05-2021. The works are in progress.
8.	Damanganga – Sabarmati – Chorwad Link Project (Intra- State Link)	Realignment work of the link alignment in Sabarmati-Chorwad reach of D-S-C is in progress. As per the suggestions of Gujarat Government, alternatives (a) connecting D-S-C with Narmada canal near Raska Weir and (b) D-S-C with Kalpasar Project through Bhadbhut Barrage are being explored by field office. Digitization of maps for the portion of P-T-N link canal common with the D-S-C Link Project is under progress.

II. Present Status of Post DPR Activities

Sl.No.	Name of Link Project	Present Status of Post DPR Activities
1.	Ken – Betwa Link Project (KBLP)	A tripartite MoA for the implementation of the project was signed jointly by the Hon'ble Union Minister for Jal Shakti and Hon'ble Chief Ministers of Madhya Pradesh and Uttar Pradesh on 22.03.2021 in the virtual presence of Hon'ble Prime Minister of India. A PIB Memo for financing Ken-Betwa Link Project on 90(C):10(S) funding pattern and setting up of SPV viz Ken-Betwa Link Project Authority(KBLPA) for its implementation has been circulated to various Union Ministries and Departments on 20.05.2021 for their comments.
2.	Par – Tapi – Narmada Link Project (PTNLP)	The issue of consensus building is being pursued by NWDA and MoJS with Gujarat and Maharashtra Governments on sharing of water. The DPR is presently under appraisal in CWC. Matter of getting clearances from MoEF&CC and MoTA are being persued.
3.	Damanganga-Pinjal Link Project (DPLP)	The issue of consensus building for water sharing is being pursued by NWDA with the Government of Maharashtra and Gujarat. Matter of getting clearances from the MoEF&CC and MoTA are also being persued.
4.	Wainganga(Gosikhurd) – Nalganga((Purna / Tapi) Link Project (Intra-State)	Desk top study for extension of Wainganga (Gosikhurd) – Nalganga (Purna) Intra-State link project upto Pentakli dam through pipeline and tunnel prepared by field office as requested by the Government of Maharashtra is under scrutiny.
5.	Kosi-Mechi Link Project(Intra-State)	DPR was accepted and recommended respectively by the Advisory Committee and Investment Clearance Committee of DoWR, RD& GR in its 129th and 40th meetings held on 22.10.2020 for investment clearance under State Plan. Role of NWDA in implementation of the link project is to be decided in consultation with Bihar Government.
6.	Ponnaiyar-Palar Link Project (Intra- State)	DPR has been completed and the EIA studies for getting Environment Clearance from State Environment Impact Assessment Authority are in progress.

III. Present Status of Preparation / Modifications of FRs / PFs of Link Project

Sl No.	Name of Link Project	Present Status of Modification of FRs
1.	Yamuna – Rajasthan Link Project	FR of this link project is under updation in field office.
2.	Rajasthan–Sabarmati Link Project	FR of Rajasthan — Sabarmati link is circulated to concerned states in February 2021.
3.	Ganga-Damodar-Subarnarekha Link Project	FR of the link project has been completed and circulated in March 2021.
4.	Subarnarekha-Mahanadi Link Project	FR of Subarnarekha-Mahanadi link project is completed and circulated to concerned States in February 2021. Preliminary works for taking up of DPR work is under progress.

5.	Chunar-Sone barrage Link project	Report is under modification in field office as per the HQs observations.
1.	FRs of Manas-Sankosh – Tista – Ganga (M-S-T-G) and Mahanadi (Barmul) –Rushikulya – Godavari (Dowlaiswaram) Link Project	The draft FRs of the link projects have been finalized and circulated to the concerned States. Presently system study of various possible scenarios for understanding long term effect on enroute canal irrigation for the M-G link is under progress through outsourcing by NIH, Roorkee. This study will also consider the effect of Groundwater Recharge/Climate Change etc. Expression of interest has also been received from Academic Institutions /Organisations for the System Studies of M-S-T-G, G-D-S and S-M link projects and the processes for finalizing various attributes of these system studies are in progress
2.	FR of Gandak – Ganga Link Project	FR of Gandak – Ganga Link Project for Indian portion has been completed and circulated to concerned states. Topographical surveys of Nepal portion using latest technology like drone/ satellite data is proposed to be taken up.
3.	FR of Kosi – Ghaghara Link	FR of Kosi – Ghaghara Link for Indian portion is under preparation in field office.
4.	FR of Netravati - Hemavati Link Project	For preparation of FR of the Project the WBS at Yettinahole, Kerihole and Hongadhalladhole diversion sites submitted by Division Office is scrutinized in Circle Office and sent the views to ID Office for incorporation.
5.	PFR of Nagavalli- Vam sadhara Rushikulya link Project	The PFR of Nagavalli-Vamsadhara Rushikulya Intra-State link Project of the State Government of Odisha is in progress.

IV. Present Status of Revisions of Water Balance Studies

Revisions of the WBS reports are generally done after a period 10 years of the completion of its Preliminary WBS that were conducted for the same basins/sub-basins and at the events of availability of more data and need of conducting alternative studies to optimise water resources utilizations at various locations of the same river basins/sub-basins.

Presently 33 WBS are considered for revisions in the targeted work plan of NWDA for the year 2021-22 and are at various stages of completions. Efforts are being made to complete the revisions as per the planned/targeted work plan of NWDA for the year 2021-22.

ILR in Parliament

The ILR issues raised and discussed in both the houses of Parliament (Lok Sabha and Rajya Sabha) during the reporting period starting from 01st April 2021 to 30th June, 2021 and projected on the Parliament of India Website are usually used to incorporate here for projections.

However, since both the houses could not conduct any sessions during the reporting period, matter under this portion may be treated as ”NIL”.

Water Resources in Media

Dainik Jagran Dated :07.04.2021

मानसून पूर्व वर्षा जल को सहेजने का प्रयास

संजीव गुप्ता • नई दिल्ली

जल शक्ति अभियान में योगदान देने के लिए एलजी ने सभी विभागों से सुझाव और एक्शन प्लान पेश करने को कहा है

प्रधानमंत्री नरेंद्र मोदी की तरफ से शुरू किए गए जल शक्ति अभियान में अब दिल्ली भी योगदान देगी। उपराज्यपाल अनिल बैजल ने इसके लिए हर विभाग से यह पूछा है कि इस अभियान में क्या और किस तरह से योगदान दिया जा सकता है। इसके साथ ही मानसून की दस्तक से पूर्व ही इस दिशा में पुख्ता कार्ययोजना तैयार करने के आदेश भी दिए हैं।

डीडीए, जल बोर्ड, वन विभाग, बाढ़ एवं सिंचाई विभाग, दिल्ली पार्क एंड गार्डन सोसायटी सहित तमाम सरकारी विभाग एक्शन प्लान तैयार कर रहे हैं। डीडीए ने उन जलाशयों का सर्वे भी शुरू कर दिया है, जहां जल संचयन की संभावनाएं अधिक हैं। दरअसल, दिल्ली पार्क एंड गार्डन सोसायटी ने डीडीए को उसके अधीन दिल्ली के करीब 800 जलाशय होने की सूचना दी है। इनमें काफी जलाशय उन 89 गांवों की जमीन पर स्थित हैं, जो कोरोना लाकडाउन से पहले ही शहरीकृत घोषित किए गए थे। डीडीए ने इस आंकड़े की पुष्टि करने और संरक्षित हो सकने वाले जलाशयों की पहचान के लिए अपनी एक अंतरविभागीय टीम का गठन कर सर्वे भी प्रारंभ कर दिया है। यह सर्वे मई माह तक पूरा कर लिया जाएगा। अनुमान लगाया जा रहा है कि 30 से 40 फीसद जलाशयों को पुनर्जीवित करना अब संभव नहीं होगा। डीडीए ने सभी मुख्य अभियंताओं और पांचों जोनों से भी एक्शन प्लान मांगा है। उद्यान विभाग की ओर से भी हर जोन के जलाशयों की पुनरोद्धार योजना की निगरानी के लिए एक-एक नोडल अधिकारी नियुक्त कर दिया है। डीडीए के उद्यान विभाग के अधिकारियों ने बताया कि नेशनल एन्वायरनमेंटल इंजीनियरिंग रिसर्च इंस्टीटयूट और आइआइटी दिल्ली के सहयोग से प्रायोगिक आधार पर प्रसाद नगर, रोहिणी और महरौली के जलाशयों में इन सीटू बायो रेमेडियल तकनीक का इस्तेमाल किया गया। करीब दो महीने तक प्रयोग करने के बाद नतीजे काफी सकारात्मक रहे हैं। इसीलिए अब इन अनुभवों के आधार पर ही अन्य जलाशयों में भी इसी का इस्तेमाल किया जाएगा। इसी के मद्देनजर वसंत कुंज स्थित एक पार्क और स्मृति वन में जलाशय का कायाकल्प करने के लिए टेंडर भी जारी कर दिया गया है।

एकीकृत प्रयास जरूरी >> संपादकीय

The Hindustan Times Dated:13.04.2021

Pre-monsoon rain deficiency hits states

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NEW DELHI: The pre-monsoon season (March, April and May) has remained dry in several parts of the country with many states recording deficient rainfall, the India Meterological Department (IMD) has said.

While northwest India reported a rain deficiency of 43% between March 1 and April 12, Uttarakhand recorded a deficiency of 78%.

Likewise, western and eastern Uttar Pradesh registered a deficiency of 93% while Haryana, Chandigarh and Delhi reported a shortage of 68% during the same period, the weather body noted.

RAIN DEFICIENCY HAS LED TO FOREST FIRES IN U'KHAND AND HIGH DUST AND PM LEVELS OVER NORTHERN PLAINS, OFFICIALS SAID

"It hasn't rained at all in the plains during this season. There was light rain and thunderstorm activity in the first week of April but it was very light. Even though four western disturbances have affected the western Himalayan region this month, their impact has been limited to the upper reaches. It has been so dry that the relative humidity in Delhi yesterday was only 31% in the morning when it is supposed to be the highest and only 17% in the evening," Kuldeep Shrivastava, head, regional weather forecasting centre, said.

IMD Pune's Standard Precipitation Index for March and the first week of April suggested that almost the entire northwest India and Indo-Gangetic Plains region remained mildly to moderately dry between April 1 and 7.

The country as a whole recorded a rain deficiency of 42% between March 1 and April 12 with 54% deficiency over the southern peninsula, 30% over the central region and 39% over northeast and east India.

It is this rain deficiency that has led to several forest fires in Uttarakhand and high dust and particulate matter (PM) levels over the northern plains.

At least 8,550 forest fires have been recorded in Uttarakhand alone between April 1 and 12, according to data provided by Forest Survey of India's Fire Alert System.

However, a fresh disturbance is likely to affect the Western Himalayan region between April 14 and 17. It is likely to cause scattered to fairly widespread rainfall with thunderstorm and gusty winds over the western Himalayan region during this period and isolated light rainfall over the adjoining plains between April 15 and 17.

Hindustan Timnes Dated : 19.04.2021

Monsoon 2021: The good and bad news

In its long-range forecast, the India Meteorological Department (IMD) announced that this year's monsoon is likely to be "normal" at around 98% of the long period average (LPA). The 2020 and 2019 monsoon were "above normal" at 110% and 109% of LPA, respectively. The monsoon is not just important because it is responsible for a remarkable 80% of the total rainfall in India. It is also essential for the economy, and has been termed India's real finance minister. Rains are crucial for agricultural productivity, food security, farm employment, and rural income. Additionally, a normal monsoon rejuvenates arid lands, restores water sources, and provides much-needed relief from the summer heat.

However, all is not well with the monsoon rains. A study by scientists at the Ludwig Maximilian University shows that the monsoon season will turn stronger and more erratic due to the climate crisis. Apart from damaging crops, the highly wet weather can also impact health, as the season becomes a breeding ground for epidemics and vectors. That its spatial distribution may not be optimal is also clear from IMD's last week's forecast that Jharkhand, Odisha, Bihar, and the northeastern states may not receive adequate rain. If one reads this warning along with a report released last week by Indian Institute of Science, Bengaluru, and Indian Institute of Technology at Mandi and Guwahati, which says that Assam, Bihar, and Jharkhand are the most vulnerable due to the climate crisis, then the link between the climate crisis, monsoon and economic growth is visible. These are some of India's poorest regions. The State must strengthen them against associated risks such as drought and floods. India must also develop a climate-risk index based on hazards faced by and the vulnerability of states.

The Hindu Dated : 25.04.2021

Groundwater depletion may reduce winter cropping intensity by 20% in India

Policy-supported intensive agriculture led to unsustainable groundwater use, water scarcity

ASWATHI PACHA

India is the second-largest producer of wheat in the world, with over 30 million hectares in the country dedicated to producing this crop. But with severe groundwater depletion, the cropping intensity or the amount of land planted in the winter season may decrease by up to 20% by 2025, notes a new paper. Some of the important winter crops are wheat, barley, mustard and peas.

The international team studied India's three main irrigation types on winter cropped areas: dug wells, tube wells, canals, and also analysed the groundwater data from the Central Ground Water Board. They found that 13% of the villages in which farmers plant a winter crop are located in critically water-depleted regions. The team writes that these villages may lose 68% of their cropped area in future if access to all groundwater irrigation is lost. The results suggest that these losses will largely occur in northwest and central India.

Alternative sources

The team then looked at canals to understand if they can be promoted as an alternative irrigation source and as an adaptation strategy to falling groundwater tables. But the results showed that "switching to canal irrigation has limited adaptation potential at the national scale. We find that even if all regions that are currently using depleted groundwater for irrigation will switch to using canal irrigation, cropping intensity may decline by 7% nationally," notes the paper published in *Science Advances*.

When asked what new or additional adaptation strategies can be implemented, corresponding author Meha Jain explains: "We can conjecture based on other literature and say that adoption of water-saving technologies like a sprinkler, drip irrigation and maybe switching to less water-intensive crops may help use the limited groundwater resources more effectively." She is from the School for Environment and Sustainability at the University of Michigan.

Scarcity: A good 13% of villages with winter crops are in critically water-depleted regions. GETTY IMAGES

Her team is now trying to understand how groundwater depletion has already reduced yields and cropped areas in India over the last 20 years, and also how climate change may affect the future availability of groundwater resources.

Unsuited soils

Balwinder Singh from the International Maize and Wheat Improvement Center, New Delhi, explains more about the problems wheat farmers face in our country. "There are several first-generation (productivity) and second-generation (sustainability) problems. In the green revolution era, policy-supported environment led to a large increase in rice cultivation in northwestern India mainly in Punjab and Haryana which are ecologically less suitable for rice cultivation due to predominantly light soils."

He explains that this policy-supported intensive agriculture led to unsustainable groundwater use for irrigation and in turn groundwater scarcity. There was also post-harvest residue burning to make way for the timely sowing of wheat. He is one of the authors of the paper.

Poor infrastructure

He adds that there are enough groundwater resources supported with higher monsoon rainfall in eastern Indian states like Bihar. But due to lack of enough irrigation infrastructure, farmers are not able to make use of natural resources there.

"So we need better policies in eastern India to expand the irrigation and thus increase agriculture productivity. This will also release some pressure from northwestern Indian states," he concludes.

The Times of India Dated : 07.05.2021

Will The Proposed Ken-Betwa Project Solve The Region's Water Woes Or Destroy Livelihoods And Ecosystems? Experts Are Sharply Divided

With uneven rain, river linking only way to ensure equitable distribution of water

AB Pandya
FOR

Interlinking of rivers will help the country fulfill its dream of ensuring equitable distribution of water and, thereby, prosperity for all. There have been several such steps in this direction, and in 1980 a National Perspective Plan was formalised. This involved transfer of water from water-surplus basins to water-deficit basins/regions in which 30 links were identified. Somehow, the term 'river interlinking' stuck in the public imagination though its real name could have been the National Inter-Basin Water Transfer Project.

So why do we need to link rivers? Though India receives about 4,000 BCM (billion cubic meters) of precipitation annually, utilisable resources are only 1,123 BCM. Even these are not distributed evenly in space or time. Most of the precipitation occurs in about 90 days in a year and the distribution of annual average availability ranges from 510 BCM for Ganga, 527 BCM from Brahmaputra and 11.02 BCM for Pennar and 12.06 BCM for Sabarmati. This shows the skew between potential demands and availability. It has, therefore, been recognised that the inter-basin transfer of water is the only recourse for making an equitable distribution of water across the country and thereby ensuring equal opportunities of development.

Like any other infrastructure project, Ken-Betwa interlinking will have some environmental and resettlement issues. But, with a comprehensive environment management plan, compensatory afforestation and a liberal R&R policy, these impacts will be taken care of

Inter-basin water transfer is not a new concept and there have been many such successful examples in the country. It has been practised in our country since 1887 when the Mulla Periyar dam was built and waters of the west-flowing river basin were transferred to east flowing Vaigai basin transforming agricultural development in and around Madurai for about 68,000 hectares. Just ask any one in Madurai about the role this water plays in their lives. Similarly, we have already made trans-basin transfers in case of the Beas Satluj link, Sardar Sahayak pariyojana, Sardar Sarovar project, Kurnool Cuddapah canal etc which are functioning well. In the US, the Colorado-Big Thompson project has been functioning since the 1930s and has contributed greatly to the economy of Colorado state.

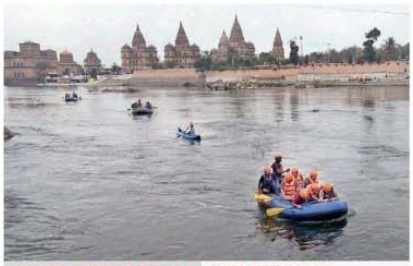
Critics of this concept propound myths like massive rehabilitation requirements, environmental damage etc but these are all based on conjecture rather than reality. One of the crucial features of the project is location of reservoirs in areas with very low population density with only the canals running in agricultural areas.

More than connecting multiple rivers like an electricity grid, the project aims at serving irrigation to the lower commands and transferring the corresponding surplus waters from upper commands to the neighbouring basin. We do not have an extreme disparity in terms of flora and fauna between neighbouring basins in peninsular India. Hence, this talk of mixing of waters and invasion of foreign species etc are not founded in any reality. Existing water transfers have also not indicated any such effects. There is a clamour about the disruption of climate due to such transfers. Once again, the same is purely conjectural as the impacts required to be created for such a climate change versus the actual transfers envisaged are tiny. As an example, the total yield of Ganga and Brahmaputra combined in Bay of Bengal is more than 1,000 BCM whereas the diversion is likely to be no more than 40 BCM annually and that too will ultimately result in reaching Bay of Bengal due to land topography. In any case, the linkage between any of the basins and their outlets into the seas are not being modified. On the other hand, the proposals can provide 172 lakh hectares of annual irrigation which, considering an average farm size of one hectare, can benefit 17.2 million farmer families and possibly 86 million people. In addition, 780 million can get assured drinking water supply. Surface water in water scarce areas will stop unsustainable groundwater utilisation as well. Thus, the benefits far outweigh costs. The question as to why such beneficial schemes are not yet getting implemented is due to our internal wrangling.

Ken Betwa happens to be the first link which was identified for implementation. It will benefit the perennially water-short Bundelkhand region and other associated regions of Bina and upper Betwa basins. Besides irrigation and drinking water, it will generate 103 MW of hydropower and 27 MW solar power. Like any other infrastructure project, KBLP will also have some environmental and resettlement and rehabilitation (R&R) issues. Daudhan reservoir will cause submergence of about 9,000 ha land of which 5,800 ha is forest land. However, with a comprehensive environment management plan (EMP), compensatory afforestation and liberal R&R policy, these impacts will be taken care of. A comprehensive landscape management plan is also being prepared for the conservation of Panna Tiger Reserve. Even wildlife will get sustenance in hot summers with assured water supply from the reservoir. The reservoir remaining at relatively low level will expose large tracts of land allowing fodder to be grown, benefitting the lower rung of wildlife which, in turn, can support the whole pyramid.

The project will provide year-round employment in Bundelkhand region, controlling forced migration to far flung areas for livelihood. The assured drinking water supply will also uplift health standards of the local populace.

Pandya is Secretary General, International Commission on Irrigation and Drainage



WHAT ARE THE PROS...

- Irrigation water to help farmers in water-scarce areas
- Drinking water supply will reduce pressure on ground water sources
- Hydro and solar power to be generated

AND THE CONS

- Will submerge large parts of Panna reserve and impact Ken gharial sanctuary
- Large-scale chopping of trees will only increase water scarcity
- Hydropower is expensive and usually unviable

TIMES FACE-OFF

Participate in the reader poll and give comments on this debate by visiting http://bit.ly/timesfaceoff or scanning QR code. Poll results and top comments will be featured in the paper

Our quest to control rivers doesn't account for the stiff ecological cost

Rohan D'Souza
AGAINST

At first glance, the Interlinking Rivers Programme (ILRP) offers great appeal. India is generously endowed with a sprawling river system but though bounteous and generous, these rivers are whimsical: prone to recurring floods, bone-dry droughts and with vast volumes winding circuitously before wastefully emptying into the sea.

Enter the engineer with a grand vision. Why not link India's river network through dams, diversions and barrages, while impounding much of their flows within giant reservoirs that are connected? Then wire this mix of concrete and steel infrastructure with software involving a couple of equations, data sets, sensors and the ingenuity of some hard hat engineers and, soon enough, all the rivers can be put on tap. That is, capture the surplus flows of a river and transfer it to a water deficit or stressed region. This, in fact, is the best argument put forward for the Ken-Betwa link.

On closer scrutiny, however, this fantastical and elegant ILRP notion falls flat. The disconnect between idea and reality, in fact, plays out at three levels.

First, the entire project rests on a wrong assumption. There is no such thing as a river with a 'surplus flow'. Since the 1980s, studies under the broad field of 'river ecology' have convincingly established that a river cannot be defined as 'lots of water' in a channel. Rather, every river is a fluvial highway that connects flora and fauna across and between floodplains, wetlands, deltas and estuaries. In sum, it delivers innumerable environmental services such as creating fish habitats, replenishing soil, sustaining biodiversity and sculpting land through erosion and deposition.

Seasonal variability floods or low flows are vital to enabling the river to constantly evolve its rich diversity of ecological relations. The Brahmaputra or the Ganga, for example, should therefore be understood not as massive flows but as a collection of ecological relations and environmental services. If a river is thus a biological regime, then it cannot have a surplus flow.

If the principal assumption is clearly wrong, it should also come as no surprise when a second order of complications follows from the first. Notably, the flawed reasoning that often goes with making economic calculations for the project. It is now fairly well known that many if not every big dam or large-scale irrigation project in India has a tendency to get their cost and benefit ratios mostly muddled. To a great extent, this is because economics as a discipline continues to have a hard time developing methodologies that can meaningfully capture ecological costs. This gets even messier when grappling with plotting future scenarios.

Consequently, for all the assumed benefits of irrigation and electricity from large dams, the long-term impacts from water logging, salinity or the loss of fisheries have yet to be meaningfully added up. That is, no reliable assessment has thus far been carried out that can meaningfully tell us whether over 70 years of large-scale water infrastructure development were worth the ecological costs.

But the wrong assumption and flawed reasoning that haunts the ILRP is actually indicative of a far more profound and fatal limitation. Recent scholarship, mostly by historians, has ably described how water infrastructure and management in post Independent India has tended to retain a strong colonial engineering mindset. The earliest version of the ILRP was, in fact, first championed in the 1850s by the famed colonial engineer and irrigator General Sir Arthur Cotton. Titled the Peninsular Scheme, Cotton's plan was to build navigation canals that would link Karachi (now in Pakistan) to Madras (Chennai) via Kanpur, Kolkata and Cuttack with additional lines crawling upwards to Pune. In terms of rivers, this meant connecting the Indus to the Ganga with canals before dropping the latter steeply to the South to link up with the Mahanadi, Krishna, Godavari and finally the Cauvery. And if such a vast navigation network could be built, the General then confidently concluded, there would be no need for the railways in British India.

Though Cotton's Peninsular Scheme came to grief, the colonial quest for river control remains. Notably in the poorly understood claim that rivers are mere flows that need to be regulated and can be put to work by dams, barrages, weirs, embankments and canal systems. Starkly missing in the picture is how we make sense of the river as a complex biological pulse.

The entire project rests on a wrong assumption. There is no such thing as a river with a 'surplus flow'. And if the principal assumption is clearly wrong, it should come as no surprise that the other calculations are based on flawed reasoning

Does this mean that rivers should never be engineered? No.

The argument is for 'smart engineering', which is a rapidly evolving approach in Europe. Smart engineers build projects that are in active dialogue with social scientists, ecologists and specially those who specialise in design. Cement and contractor engineering can no longer address ecological complexity and the ILRP is the last surviving dinosaur in that tradition. If the coming challenges of water shortages and extreme flood events are to be meaningfully dealt with, then Indian engineering has to embrace new knowledge and be inventive enough to enable a productive conversation between science, ecology, history, sociology and art. A river, after all, is more than just water.

D'Souza is Professor, Graduate School of Asian and African Area Studies, Kyoto University

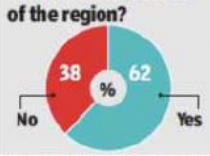
The Times of India Dated : 10.05.2021

'RIVER-LINKING SHOULD BE DONE ON A SCIENTIFIC BASIS'

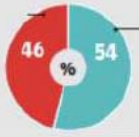
The proposed interlinking of the Ken and Betwa rivers has sharply divided critics and supporters. In this week's Times FaceOff debate, AB Pandya, Secretary General, International Commission on Irrigation and Drainage, explained why the project is necessary with Rohan D'Souza, professor at the Graduate School of Asian and African Area Studies at Kyoto University, urging caution against it

TIMES FACE OFF

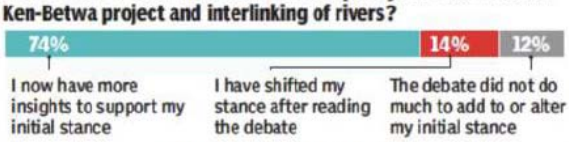
Will river interlinking solve the water woes of the region?



Whose arguments do you think were presented better?



How did this #TimesFaceOff debate impact your stance on the Ken-Betwa project and interlinking of rivers?



WHAT READERS SAID

A project of such magnitude will impact more than just the environment; there's the human factor of displacing people and also that of the (Panna) sanctuary. – **Careena,** NEW DELHI

The Ken-Betwa project solves three major problems of Bundelkhand: drinking water, electricity, and water for irrigation. We must implement such innovative solutions. – **Akshit Thakur,** MANDI

Resettlement is not as easy as simply moving from one region to another. People in the unorganised sector will have no means of livelihood; those in the organised sector will also face issues. The flora and fauna, too, will be impacted... – **Rishabh Chaudhuri,** HYDERABAD

This is a matter of global warming impacting the ecologically sensitive zone in Central India... The project's ecological impact needs to be studied further. – **Prof RV Shukla,** BILASPUR

Implementation has to be done on a sound technical and scientific basis without affecting the local ecology. The plan deserves support. – **Pramod Pande,** CHENNAI

TheTimes of India Dated : 23.05.2021

Groundwater Role In Capital Tremors?

Study Says Rapid Extraction May Be The Trigger, Cites Reduction After Monsoon Rains

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New Delhi: The alarmingly frequent earthquakes in Delhi-NCR last year may have been the result of rapid groundwater extraction in the region, according to a study carried out by researchers from National Institute of Technology, Rourkela, the research simulated groundwater extraction data alongside data on GPS-derived vertical displacement, rainfall and earthquake frequency in the Aravalli-Delhi fold belt and observed a reduction in seismic activity after the monsoon rains.

Bhaskar Kundu of NIT Rourkela, who led the study, told TOI that while groundwater extraction was not the only factor for the earthquakes, it did appear to influence seismic activity in the region. "Earthquakes have been found to be largely occurring in the top 25 km of the surface and a relation has been found between the withdrawal of water from aquifers and the subsequent destabilisation of faults underneath the aquifers, as a result of compression and extension," explained Kundu.

In academic idiom, the study puts this as: "The low magnitude but moderate seismicity rate of Delhi region on the stable plate-interiors domains of India exhibits significant variation, both in short-term at the annual seasonal scale and in long-term at the decadal scale. It correlates with the anthropogenic groundwater pumping for extensive irrigation, urban activities, and seasonally controlled hydrological loading cycle of the Indo-Ganga Basin hosted freshwater aquifers."

V K Gahalaut of National Geophysical Research Institute, one of the researchers, explained, "We found that once the aquifers were recharged, they actually stabilised the pores underneath them but when water was extracted, it led to plate movement and creation of stress. This is what destabilises the seismic plates underneath." Gahalaut added that there was a connection between the monsoon rains recharging the aquifers and a reduction in earthquake frequency.

To identify human-induced earthquakes, over six cases have been documented in the past few decades in a database called 'HiQuake', which Kundu said was strengthened by adding the possibility of groundwater extraction-based seismicity around Delhi.

"Exploiting the Gravity Recovery and Climate Experiment (GRACE) data, surface subsidence rate, hydrological models, coupled hydro-mechanical simulation and poro-mechanical analysis of basement fault, we have reported significant variation in the seismicity modulation in Delhi region both in the short term and the over a decade," said Kundu, adding that while the fault movement is generally tectonically driven, human interferences can also cause slips or modulate seismicity in the crust.

According to Kundu, data showed a steady decline in the groundwater table at 1.8cm per year from 2002 to 2006, though this stabilised later.

The study was co-authored by Deepak K Tiwari, Birendra Jha and Naresh K Vissa of NIT Rourkela and Gahalaut, who informed that the study took nearly three years, with rainfall data of over 20 years considered and that of earthquakes of over 50 years.

"We studied last year's data too when earthquakes began occurring frequently from April onwards. However, when the monsoons came, the earthquakes ceased. Data shows a 20-30% reduction in seismic frequency post-monsoon rains," said Gahalaut.

The Bureau of Indian Standards has classified India into four seismic groups: Zone II (low intensity) to Zone V (very severe). Large parts of NCR, including Delhi and Haryana, fall in Zone IV (severe), making them particularly prone to earthquakes. Delhi in the past has recorded several strong historical earthquakes, including in 1720, 1803, 1956 and 1960.

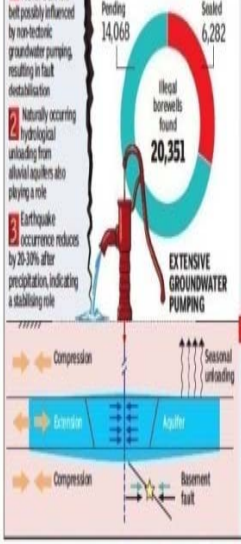
"Interestingly, the seismicity of the Delhi region exhibits strong semi-annual periodicity. Moreover, during the seasonal loading period (June-September, i.e., during the monsoon), the seismicity is lowest, whereas it is relatively high during the unloading period," the study adds.

IN DEEP WATER

STUDY FINDINGS

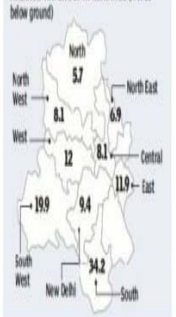
1. Seismicity in the Aravali-Delhi fold belt possibly influenced by non-tectonic groundwater pumping, resulting in fault destabilisation
2. Naturally occurring hydrological unloading from alluvial aquifers also playing a role
3. Earthquake occurrence reduces by 20-30% after precipitation, indicating a stabilising role

ILLEGAL WATER EXTRACTION PROBLEM OF DELHI



6 districts already declared critical as they have been overexploited New Delhi, South, South East, East, North East and Shahdara

AVERAGE WATER DEPTH READINGS (metres below ground)



WATER DRYING UP FAST

- A recent Central Groundwater Board (CGWB) report states Delhi's groundwater table currently declining at a rate of 0.2 metres each year
- In some parts of Delhi, mostly South and South West zones, the groundwater table has fallen to around 80 metres below ground level
- Only the Central zone in Delhi is currently in the 'safe' category, with all the remaining districts either 'critical' or 'overexploited', according to CGWB

Hindustan Times Dated : 14.06.2021

Monsoon advances across country 14 days early: IMD

Jayashree Nandi
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NEW DELHI: Monsoon entered almost all parts of the country, except some areas of Uttar Pradesh, parts of Punjab, Rajasthan and Gujarat, within a span of 10 days and its progress is at least a fortnight in advance, according to scientists at the Indian Meteorological Department (IMD).

Monsoon is normally expected to cover all parts of the country, except a small part of Rajasthan, by July 5. It advanced to most parts of Madhya Pradesh, entire Chhattisgarh, Odisha, West Bengal, Jharkhand and Bihar, most parts of east Uttar Pradesh and some parts of west Uttar Pradesh, entire Uttarakhand, Himachal Pradesh, Jammu and Kashmir, Ladakh, Gilgit-Baltistan, Muzaffarabad and some parts of north Haryana, Chandigarh and north Punjab on Sunday.

It was in 2013 when the monsoon had last covered the entire country on June 13, as per dates analysed by O P Sreejith, head, climate monitoring and prediction group, IMD Pune.

The northern limit of monsoon (NLM) is passing through Diu, Surat, Nandurbar, Bhopal, Nowgong, Hamirpur, Barabanki, Bareilly, Saharanpur, Ambala and Amritsar. The conditions are favourable for further advance of southwest monsoon into most parts of Madhya Pradesh, remaining parts of east Uttar Pradesh, Delhi and some more parts of west Uttar Pradesh, Haryana and Punjab in the next 48 hours, the weather body has said.

There has been 25% excess rain over the country since June 1. Of the 36 subdivisions, 12 recorded 'large excess' rain (60% above normal), 10 recorded 'excess' (20% to 59%) and nine recorded 'normal' (-19% to 19%).

"In the last two to three days, pre-monsoon rain started occurring in parts of Punjab, Haryana and Delhi. Parts of Uttarakhand and Himachal Pradesh reported heavy rain. Some parts of Uttar Pradesh also reported 10 to 12 cm rain. There is no western disturbance affecting the northwestern region now. This is only because of strong monsoon winds blowing over the region. The easterly winds have picked up, so the IMD has declared monsoon onset over many parts of northwest India," said R K Jenamani, senior scientist, National Weather Forecasting Centre. "Monsoon has been very active this year right from its onset. The westerly and southwesterly winds are very strong over the Arabian Sea and now a low-pressure area over the Bay of Bengal is pulling the monsoon flow. Both branches on the Arabian Sea and Bay of Bengal side are supporting the advancement of monsoon over the country, except in dry regions of Rajasthan and Gujarat," Jenamani explained.

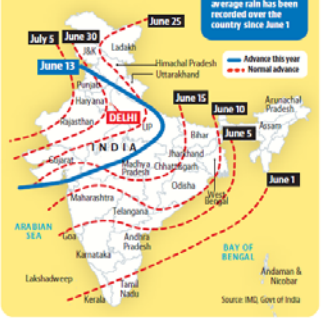
Monsoon's progress over the entire country has advanced in recent years, according to IMD scientists. M Rajeevan, secretary, ministry of earth sciences, said: This year is exceptional because the monsoon has covered parts of central India very early. Monsoon has covered the entire country by June end in the past but this year, its trajectory is exceptional..."

Heavy to very heavy rainfall is very likely over parts of northwest India during the next three days, over parts of east, central and west India during the next three to four days, over parts of northeast India during the next five days and over parts of south Peninsular India during the next four to five days.

Extremely heavy rain (over 20 cm) is also very likely over Konkan and Goa on June 14 and 15 and over coastal Karnataka and central Maharashtra on June 15.

Tracking the monsoon

JUNE RAINFALL SETS RECORD
25% more than average rain has been recorded over the country since June 1



Navbharat Times Dated : 25.06.2021

क्लाइमेट चेंज से नदियों के बहाव में तेजी: स्टडी


File Photo

विशेष संवाददाता, नई दिल्ली

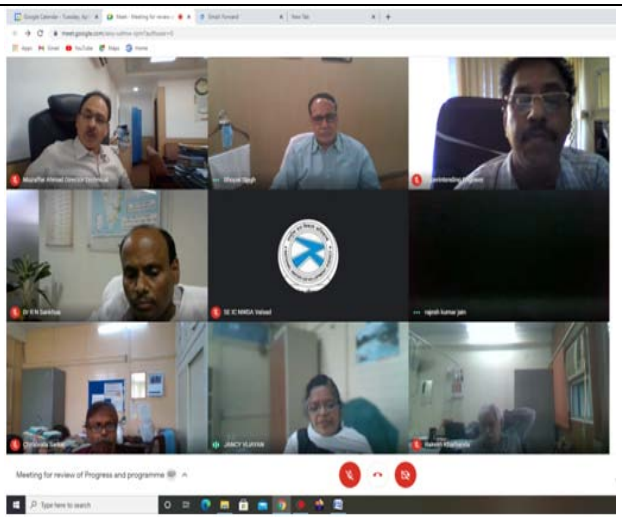
क्लाइमेट चेंज के कारण 2050 तक हिमालयी क्षेत्र से निकलने वाली नदियों में पानी का बहाव बढ़ेगा। एक स्टडी में कहा गया है कि इसके कारण हिमालयी कराकोरम रेंज से निकलने वाली गंगा, सिंधु और ब्रह्मपुत्र जैसी नदियों में पानी के बहाव के पैटर्न में तब्दीली आएगी और सिंचाई और हाइड्रोपावर प्रोजेक्ट्स के लिए आने वाले समय में भरपूर पानी मिलेगा, लेकिन अगर क्लाइमेट चेंज के असर पर लगाम नहीं लगाई गई तो भविष्य में दिक्कतें खड़ी हो सकती हैं। इसके कारण देश के बड़े इलाके में पानी की किल्लत पैदा हो सकती है।

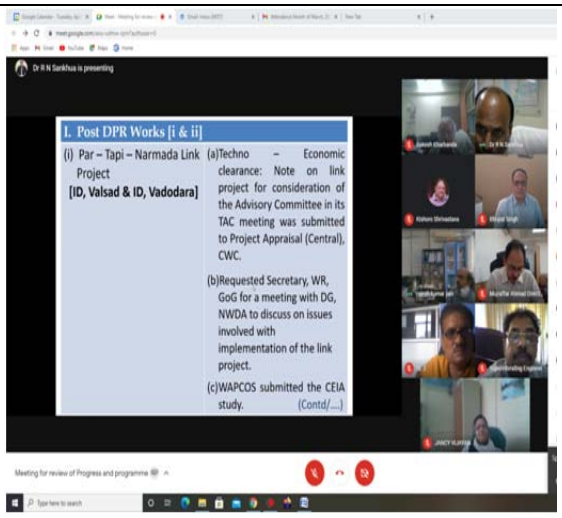
आईआईटी इंदौर की एक स्टडी में कहा गया है कि ग्लोबल वॉर्मिंग के कारण हिमालयी कराकोरम क्षेत्र के ग्लेशियर तेजी से पिघल रहे हैं। इससे इस इलाके से निकलने वाली नदियों में पानी का प्रवाह बढ़ रहा है। इसमें यह भी कहा गया है कि अगर ग्लेशियरों से पिघलने की यही रफ्तार रही और मौसम में क्लाइमेट चेंज के कारण बदलाव जारी रहा तो 2050 के बाद इन नदियों में पानी की कमी हो सकती है। इसरो की एक स्टडी में भी पाया गया था कि हिमालयी क्षेत्र के ग्लेशियर लगातार सिकुड़ रहे हैं। इस स्टडी में पाया गया है कि गढ़वाल की भिलंगना घाटी के ग्लेशियर तेजी से पिघल रहे हैं। आईआईटी ने अपनी स्टडी को अंजाम देने के लिए हिमालयी क्षेत्र के ग्लेशियरों पर तैयार किए गए 250 रिसर्च पेपर्स का विश्लेषण किया। उनका कहना है कि आने वाले दिनों में ग्लोबल वॉर्मिंग का ग्लेशियरों पर और ज्यादा गहरा असर पड़ सकता है। इसे रोकने के लिए जरूरी है कि ग्रीन हाउस गैसों के उत्सर्जन में तेजी से कमी लाई जाए।

Glimpses of NWDA

1. Meeting for reviewing the progress and finalising the work programme of NWDA for the year 2021-22

A virtual meeting to review the progress of works completed during the year 2020-21 and finalise the work programme of NWDA for the year 2021-22 had been convened on 06.04.2021 under the Chairmanship of DG, NWDA. All the Heads of Field Offices and Unit Heads of the HQs, NWDA were participated in the meeting. At the outset DG, NWDA mentioned that the progress of works achieved during the year 2020-21 was quite satisfactory and sought the co-operation of all the Officers and Staff to continue their working spirit in the coming years also. DG, NWDA opined that all the pending FRs are to be targeted for completion by December, 2021. In addition, he informed that 3 or 4 DPRs under each Chief Engineer (North/South) jurisdictions are also to be completed by 2023. Both the Chief Engineer (North), NWDA, Lucknow and Chief Engineer (South), NWDA, Hyderabad made their presentations on their achievements during the year 2020-21. After seeing the presentations, Officers were engaged into detailed deliberations and a tentative work programme for the year 2021-22 had been finalised.





Meeting Chaired by DG, NWDA on 6th April 2021 for reviewing of Programme and Progress of NWDA and Preparing Tentative work programme for the year 2021-22.

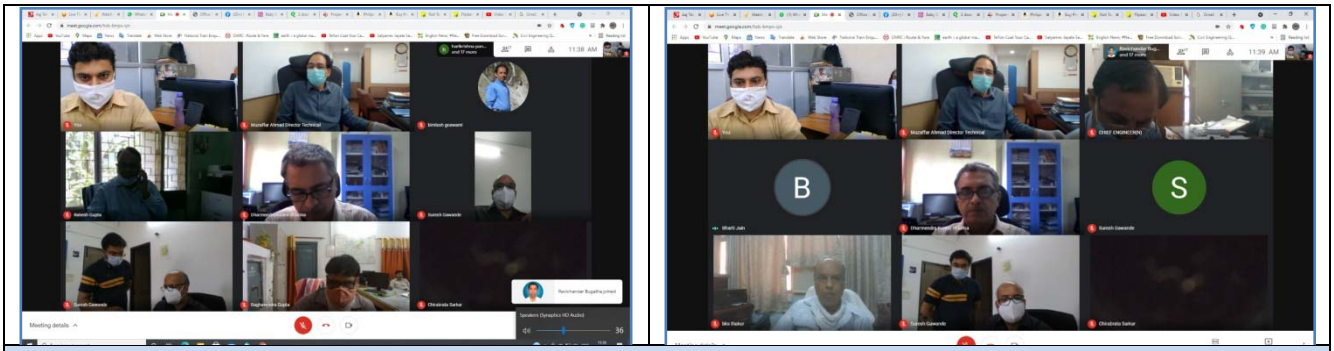
2. 17th Meeting of the Sub-Committee for System Studies

The 17th meeting of the Sub-Committee on "System Studies for identification of most Appropriate Alternative Plan" of the Special Committee for Interlinking of Rivers (SC-ILR) was held on 08.04.2021 through video conferencing under the Chairmanship of Prof. P.B.S. Sarma (Retd.), CED, IIT Delhi. In the meeting issues of System Studies of Mahanadi – Godavari Link Project, including reconciliation in the parameters of System Studies being carried out by NIH, Roorkee and the Proposals for taking up the system studies of other links namely Manas – Sankosh – Tista – Ganga; Farakka – Sunderbans; Ganga – Damodar – Subarnarekha and Subarnarekha – Mahanadi had been discussed. A brief presentation on the approach and methodology proposed to be used in the system studies of identified links had been made before the Sub-Committee by reputed institutes along with Expression of Interest. During the meeting, the attributes and their weightages to be assigned for the evaluation of technical proposals for carrying out system studies of link proposals were deliberated.

The Chairman of the Sub-Committee opined that Members may suggest /convey their views, if any, on the attributes and their weightages as proposed above as soon as possible so that technical proposals may be sought from the institutes/organisations at an early date. DG, NWDA also suggested to encourage organisation or institute to associate with other organisations/institutes to carry out the study looking at the requirements of experts in various domains based on geographical spread of study areas and also mentioned that such consortiums with the required multiple specialists would be useful for conducting the studies and the approach may further help not only in carrying out the studies efficiently but also in creating expertise base in the required domain across the country.

3. Technical Review Meeting of NWDA

Technical review meeting of NWDA had been taken by DG, NWDA on 07.06.2021 through virtual platform. In the meeting issues of publication of Jal Vikas; finalisation /preparation of Annual Reports of NWDA for the financial year 2019-20/2020-21; finalisation of Agenda for the forthcoming Governing Body meeting of NWDA; Survey works for FR studies in Nepal portion; and Stage-II forest clearance of KBLP had been discussed.While concluding the review meeting DG, NWDA informed to accomplish each activity as per the targeted work programme of NWDA fixed for the year 2021-22.



Technical review meeting held on 07.06.2021 under the Chairmanship of DG, NWDA

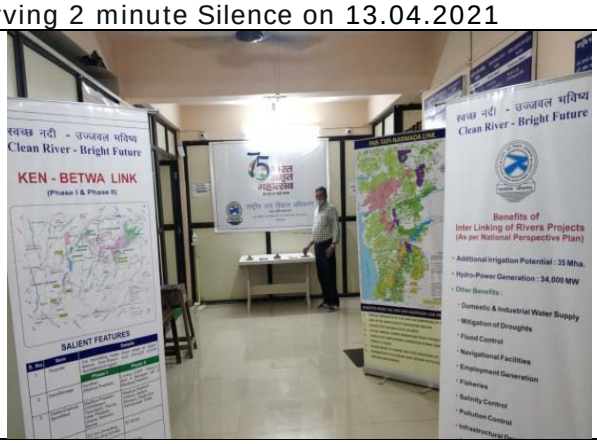
4. Amrit Mahotsav Celebrations Held in NWDA

'Azadi Ka Amrit Mahotsav' is an initiative of the Government of India to celebrate and commemorate 75 years of independence of progressive India and the glorious history of its people, culture and achievements. Hon'ble Prime Minister of India, Shri Narendra Modi inaugurated the 'Azadi Ka Amrit Mahotsav' by flagging off 'Dandi March' from Sabarmati Ashram, Ahmedabad on 12-03-2021. The celebrations thus started 75 weeks before our 75th Anniversary of Independence Day and will end on 15th August, 2023.

NWDA carried out various programme/ activities to commemorate the 'Azadi Ka Amrit Mahotsav'. During the reporting period activities planned by NWDA starting from 5th to 17th week of the Mahotsav had been observed with the activities/programme especially on "Jallianwalah Wala Bagh Massacre Day[13 April- as the historical Jallianwala Bagh Incident was happened on 13-04-1919"]; "Awareness on River Interlinking Programme" [on various dates - 5th& 26th April; 3rd, 17th & 24th May; and 14th June and respectively at different Field Offices located at Valsad, Chennai, Bhubanewar, Jhansi, Vadodara and Lucknow]; "First War of Independence [10 May- India's first war of independence, known as the Indian Rebellion of 1857, began on May 10 in the year 1857. The first martyr of the revolt was Mangal Pandey]; National Technology Day [11 May- India observes National Technology Day on May 11 to mark the anniversary of the Pokhran nuclear tests of 1998]"; "Anti Tobacco Day"[31 May]" ;

"Awareness on Water Conservation and Water Security" [7th June at Patna]" and "International Yoga Day" [21 June at Headquarters and Field Offices of NWDA]:

4.1. In Commemoration of Jallianwala Bagh Incident, Officials of NWDA(HQ), Saket give tribute to Freedom Fighters of India by observing 2 minute Silence on 13.04.2021

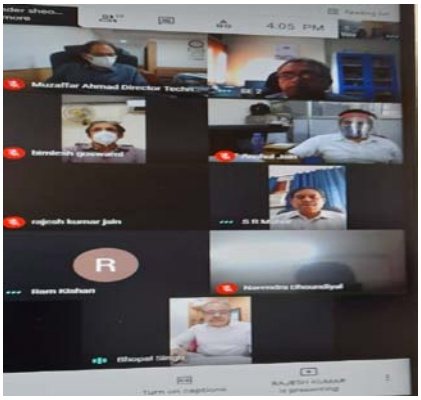


4.2.1 Posters of P-T-N, D-P and K-B Link Projects displayed and Pamphlets were distributed at Investigation Division, Valsad, NWDA for Creation of Awareness on ILR Progrmme.

4.2.2 Banners and Pamphlets related to P-T-N and D-S-C Link Projects shown and distributed at Investigation Division, Vadodara, NWDA for awareness creation on ILR Progrmme.

4.2.3 A short procession was held on 26.04.2021 by displaying banners on IIR Programme by the Investigation Division, Chennai, NWDA as a part of awareness creation on ILR.

4.3 Anti Tobacco Day (31 May)



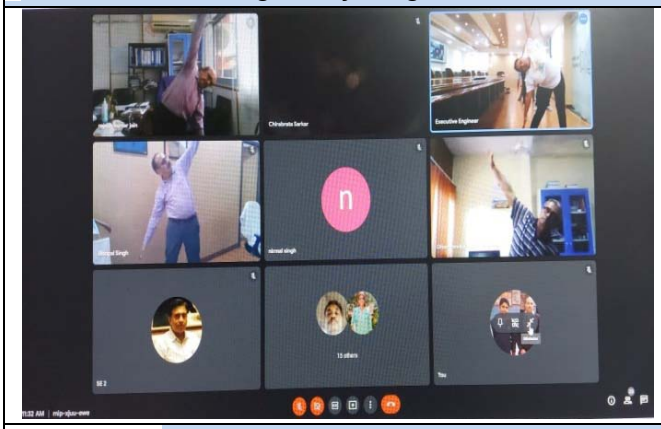
Anti Tobacco day was falling in the 13th week of Amrut Mahotsav. The Member States of the World Health Organization (WHO) created World No Tobacco Day or Anti Tobacco Day(ATD) in 1987 to draw global attention to the tobacco epidemic and the preventable death and disease it causes. This year's theme ATD was "Commit to Quit". On the day pledge had been taken by the Officials of NWDA to never smoke & consume any type of tobacco products in their lives and motivate their family, colleagues and acquaintances not to smoke/ use any tobacco products.

4.4 International Yoga Day (21 June)

International Yoga Day was under the 16th week of Amrut Mahotsav Celebrations planned by NWDA. An age-old health care and wellness practice for holistic living and it ensures a balance of mind, body and soul. International Yoga Day has been celebrated annually on 21st June since 2015, following its inception in UN Assembly in 2014 and is originated in India.

Yoga Day has been celebrated in HQ as well as in field offices of NWDA with great enthusiasm. A virtual workshop on International Yoga Day was organised in NWDA on 21.6.21, with support of a Yoga Instructor. All the Officials of NWDA HQ offices (Saket and Palika Bhawan) participated in the workshop.The Yoga day was celebrated in various field offices of NWDA as well as shown below:

Yoga Day Organized in Investigation Division, NWDA, Nashik



Yoga Day Celebrations Held in NWDA, HQs through Virtual Platform

5. Involvement of NWDA in Pradhan Mantri Krishi Sinchayee Yojana

During 2015-16, Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was launched by the Central Government with an overarching vision to ensure access to protective irrigation for all agricultural farms in the country, and to produce 'per drop more crop', thus bringing much desired rural prosperity.

Accelerated Irrigation Benefits Programme: Central Government launched the Accelerated Irrigation Benefits Programme (AIBP) in the year 1996-97 to provide Central Assistance (CA) to Major/Medium Irrigation (MMI) projects in the country, with the objective to accelerate implementation of such projects which were in advanced stage of completion. After the launch of the PMKSY, the AIBP became a part of the PMKSY. Under PMKSY-AIBP, 99 projects have been prioritized for implementation. The progress of the projects in physical as well as financial terms is monitored through the field units of CWC and Nodal Officer nominated for each of the 99 priority projects regularly, using Management Information System (MIS) developed for this purpose.

NWDA has been identified to act as an agency for borrowing resources from Long Term Irrigation Fund (LTIF) and release Central Assistance (CA) received from NABARD to concerned State Government(s) to complete the PMKSY-AIBP projects in a time bound manner.

Release of Fund made by NWDA (Rs. in Crores) under PMKSY-AIBP to various States up to 30.06.2021

S.NO	Distribution of funds to different states	Fund released upto 2020-21	Fund released during year 2021-22	Total fund released upto 30.06.2021
1	Andhra pradesh	91.8100	0.00	91.8100
2	Assam	7.5500	0.00	7.5500
3	Bihar	146.0633	0.00	146.0633
4	Chhattisgarh	62.7896	0.00	62.7896
5	Goa	3.84	0.00	3.8400
6	Gujarat	5635.4553	0.00	5635.4553
7	J & K	46.2522	0.00	46.2522
8	Jharkhand	756.7300	0.00	756.7300
9	Karnataka	1183.3170	0.00	1183.3170
10	Kerala	2.69	0.00	2.6900
11	Madhya pradesh	811.1150	0.00	811.1150
12	Maharashtra	1796.7866	0.00	1796.7866
13	Manipur	228.3540	0.00	228.3540
14	Odisha	1340.8247	0.00	1340.8247
15	Punjab	277.9460	0.00	277.9460
16	Rajasthan	509.9450	0.00	509.9450
17	Telangana	673.8640	0.00	673.8640
18	Uttar pradesh	1553.9120	0.00	1553.9120
Projects Name				
19	Polavaram project	9898.3600	333.0000	10231.3600
20	North Koel project	721.2200	0.00	721.2200
	TOTAL	**25748.8247**	**333.0000**	**26081.8247**

Appointments, Promotions and Retirements of NWDA Officials

During the reporting period starting from 1st April 2021 to 30th June 2021:

Appointments:

Sl.No	Name & Designation	Deputation / Direct	Place of Posting
1	Shri Shiva Prakash, Chief Engineer (North)	Deputation w.e.f. 20.04.2021	O/o Chief Engineer (North), NWDA, Lucknow.
2.	Shri Subarta Halder, Director (Finance)	Deputation w.e.f. 01.06.2021	NWDA (HQs.) New Delhi.

Promotions:

Sl. No.	Name & Designation	Post and Date of Promotion	Place of Posting on Promotion
1.	Shri Niranjan Swain, Upper Division Clerk	Head Clerk w.e.f. 31.05.2021	ID, NWDA, Bhubaneswar.
2.	Smt. Bijendri Santriwal, Upper Division Clerk	Head Clerk w.e.f. 04.05.2021	NWDA (HQs.), New Delhi.
3.	Shri S.C. Choudhary Junior Engineer	Assistant Engineer w.e.f. 04.05.2021	CE(North), NWDA, Lucknow
4.	Shri Pramod Kumar Rathor, Junior Engineer	Assistant Engineer w.e.f. 05.05.2021	ID, NWDA, Bhopal
5.	Shri Ashok Kumar Shukla Lower Division Clerk	Upper Division Clerk w.e.f. 10.05.2021	ID, NWDA, Lucknow
6.	Shri Praveen Dixit Lower Division Clerk	Upper Division Clerk w.e.f. 07.05.2021	IC, NWDA, Gwalior
7.	Shri R.K. Gupta, Executive Engineer (HQs.)	Superintending Engineer w.e.f. 01.06.2021	IC, NWDA, Bhubaneswar
8.	Shri Rajendra Singh Nayal Lower Division Clerk	Upper Division Clerk w.e.f. 1.6.2021	O/o CE(North), NWDA. Lucknow
9.	Shri Vikram Singh, Lower Division Clerk	Upper Division Clerk w.e.f. 1.6.2021	NWDA (HQs.), New Delhi.
10.	Shri Mohemad Irfaan Lower Division Clerk	Upper Division Clerk w.e.f. 1.6.2021	NWDA (HQs.), New Delhi.
11.	Smt.Mithlesh Maurya Lower Division Clerk	Upper Division Clerk w.e.f. 1.6.2021	NWDA (HQs.), New Delhi.
12.	Smt. Radha, Lower Division Clerk	Upper Division Clerk w.e.f. 9.6.2021	NWDA (HQs.), New Delhi.

Retirements:

Sl. No.	Name & Designation	Date of Retirement
1	Shri Gyani Ram, Head Clerk, NWDA, HQs. New Delhi.	30.04.2021
2	Smt. Ravinder Sethi, Head Clerk, NWDA, ID, Gwalior	30.04.2021

3	Shri A.K. Rangare, Assistant Engineer, ID, NWDA, Bhopal	30.04.2021
4	Smt. R. Shyamala, MTS, ID, NWDA, Hyderabad	30.04.2021
5	Shri Ramkesh Meena, JE, ID, NWDA, Nasik.	06.05.2021 (Resigned)
6	Shri Hemendra Mishra, LDC, NWDA(HQs), New Delhi	12.05.2021 (Resigned)
7	Shri P.V. Rama Raju, SE, IC, NWDA, Hyderabad.	31.05.2021
8	Shri K.K. Ali, Assistant Engineer, NWDA(Hqs.) New Delhi.	31.05.2021
9	Shri N.K. Sexena, Head Clerk, ID, NWDA, Gwalior	31.05.2021
10	Shri G.P. Behuria, UDC, ID, NWDA, Kolkata.	31.05.2021
11	Shri T.R. Shyamala, UDC, IC, NWDA, Hyderabad.	31.05.2021
12	Shri A.C. Patel, Driver Gr.I, IC, NWDA, Valsad.	31.05.2021
13	Shri Manish Kumar, LDC, NWDA (HQs.), New Delhi	31.05.2021 (Resigned)
14	Shri Abhishek Sharma, Stenographer Gr.II	21.06.2021 (Resigned)
15	Shri Hari Krishan Pandey, EE, NWDA(HQs.), New Delhi.	30.06.2021
16	Shri R.K. Sahoo , Superintendent Gr.II, CE(North), Lucknow	30.06.2021
17	Smt. Saroj Bala Shiv Chandra Nath Sharma, Superintendent Gr.II, ID. NWDA, Valsad.	30.06.2021
18	Shri Sayed Rafique Mohammed, D'man Gr.I, ID-I. NWDA, Nasik.	30.06.2021
19	Shri Narender Kumar, D'man Gr.I,NWDA,(HQs.), New Delhi.	30.06.2021
20	Smt. B.L. Nayak, UDC, ID, NWDA, Kolkata.	30.06.2021
21	Shri C.N. Murali, MTS, ID, NWDA, Chennai	30.06.2021

Participation of NWDA Officials in Trainings/ Seminars/ Conferences

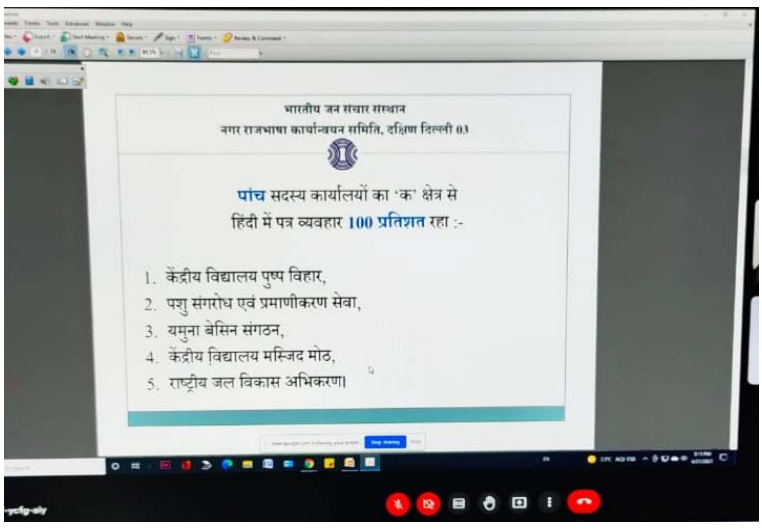
During the reporting period starting from 1st April 2021 to 30th June 2021, the number of trainings / seminars/ workshops etc. organized was 4.

Details of events in which the officials participated were as per the list shown below:

- Technical Officers of NWDA, HQ attended the 25th Water Talk on "Catch the Rain, importance of water literacy" on 16.4.21 being organised by National Water Mission, MoJS on 16.04.2021
- 235th Meeting of CBIP Executive Committee was attended by CE (HQ) on behalf of DG, NWDA. The meeting was held on 28.04.2021 through virtual platform under the chairmanship of Sh.P.S.Mhaske, President, CBIP.
- Technical Officers of NWDA, HQ attended the 26th Water Talk on "Raising Water Table : Prerequisite to Jal Jeevan Mission" on 21.05.21 being organised by National Water Mission, MoJS.
- Technical Officers of NWDA, HQ attended the 27th Water Talk on "Women Water Champions from the grassroots" on 18.06.21 being organised by National Water Mission, MoJS.

हिन्दी- के बढ़ते कदम

1. दिनांक 21.06.2021 को नगर राजभाषा कार्यान्वसयन समिति की बैठक वीडियो कॉन्फ्रेसिंग द्वारा महानिदेशक,भारतीय जन संचार संस्थाकन, आई आई एम सी , अरूणा आसफ अली मार्ग, न्यू जेएनयू कैंपस, नई दिल्ली-110067 में आयोजित की गई। इस बैठक में महानिदेशक महोदय ने भाग लिया। इस बैठक में राजभाषा कार्यान्वेयन के संबंध में गहन चर्चा की गई।



बैठक में पिछले छह महीनों के राजभाषा संबंधी कार्यों की छमाही रिपोर्ट के आधार पर समीक्षा की गई और पत्राचार का लक्ष्यो 100 प्रतिशत तथा हिन्दी में पत्र व्यछवहार 100 प्रतिशत होने के लिए राष्ट्रीय जल विकास अभिकरण की सराहना की गई। नोडल कार्यालय होने के नाते रा.ज.वि.अ. ने सदस्य् कार्यालयों की समीक्षा करके नराकास को उपलब्ध भी करवाई।

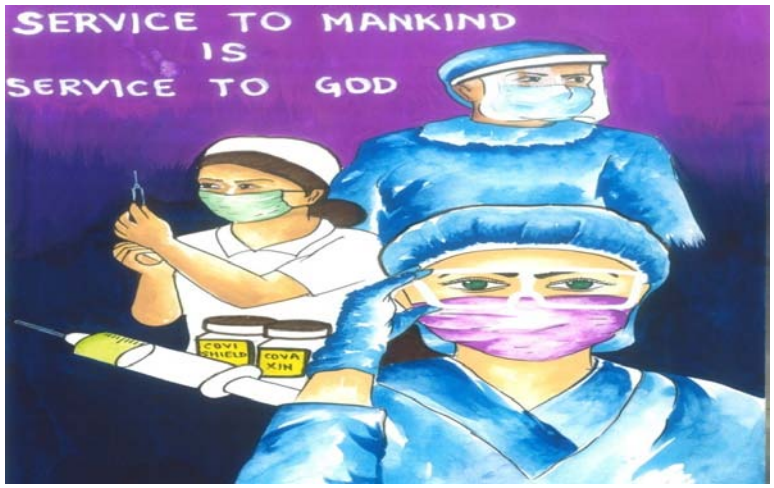
2. दिनांक 29.06.2021 को महानिदेशक महोदय की अध्यंक्षता में वीडियो कॉन्फ्रेसिंग द्वारा राजभाषा कार्यान्वनयन समिति की तिमाही बैठक आयोजित की गई। पिछली बैठक के निर्णयों की अनुवर्ती कार्रवाई और पत्राचार की स्थिति पर विचार किया गया। इस बैठक के विचारणीय विषयों पर विस्ताकर से चर्चा की गई एवं उन पर निर्णय लिए गए।

WORLD ENVIRONMENT DAY

World Environment Day [WED] is celebrated annually on 5 June and is the United Nations' principal vehicle for encouraging awareness and action for the protection of the environment. In 1974 the first WED was held with the theme "Only One Earth". This day remind us that we are not alone on this planet. There is a huge biological ecosystem that exists and human survives healthly because of the upport receive from the ecosystem. Hence, duty of each one is there to preserve and restore them when the life cycle proceeds.

The theme for the WED 2021 was “Ecosystem Restoration” and will see the planned activites of the UN Decade on Ecosystem Restoration in the next coming 10 years, the UN with the support of its Member Countries, Partners and People want to focus on preventing and reversing the losses of degraded natural ecosystems to fight the impacts of climate change and go with the aim for Ecosystem Restoration; and thereby witnessing the co-existance of various ecosystems and its communities in an healthy and wealthy manner for the overall wellbeing of humanbeing.

World Health Day-2021



April 7 of each year marks the celebration of World Health Day (WHD). From its inception at the First Health Assembly in 1948 and since its effect in 1950, the celebration has aimed to create awareness of a specific health theme to highlight a priority area of concern for the WHO. “Building a fairer, healthier world”, was the theme of the WHD 2021. COVID-19 has hit all countries hard, but its impact has been harshest on those communities which were already vulnerable, who are more exposed to the disease, less likely to have access to quality health care services and had undercut recent health gains, pushed more people into poverty and food insecurity, and amplified gender, social and health inequities in many regions. Health inequities are preventable with efficacious strategies by placing greater attention and services to improving health equity.

The drawings depicted here above and below are respectively contributed by Kumar Shubham Samantaray; and Kumari Shreya Samantaray; son and daughter of Shri. Lalit Kumar Samantaray, Administrative Officer, NWDA, New Delhi.

Obituary and Rememberance of NWDA Officials,who Expired due to Covid-19 Pandemic	
	Shri K.P. Gupta retired from the post of Chief Engineer (North), Lucknow, NWDA on 28.02.2021. He expired on 28.05.2021. He served NWDA with effect from 22.05.1984 to 28.02.2021
	Shri P Anjaneyulu was serving in the Investigation Division, Hyderabad, NWDA as Assistant Executive Engineer, when he succumbed to Covid Pandemic. He served in NWDA with effect from 27.02.1984 to 26.08.2020.
	Shri S.M. Basha was working as Assistant Engineer in the Investigation Division, Chennai, NWDA and succumbed to Covid-19. He worked in NWDA during the period starting from 04.06.1984 to 10.07.2020.
	The demise of Shri Rajiv Nigam was happened when he was serving in NWDA (HQ), Palika Bhawan, New Delhi as Junior Engineer. He served in NWDA with effect from 28.06.1993 to 23.05.2021.
	Shri Ramesh Kamatagi retired from the post of Superintendent Grade-II from Investigation Division, Valsad, NWDA. He gave his service to NWDA with effect from 08.06.1984 to 31.05.2020.
	Smt. V. Kalavathi had opted for Valuntary Retirement from NWDA from the post of Steno Grade-II when she was in the Investigation Division, Bengaluru, NWDA. She served in NWDA with effect from 04.10.1989 to 07.03.2014.
	Shri K.K. Dhokia, retired from the post of Draftsman Grade-II from the Investigation Division, Valsad, NWDA. He served in NWDA during the period starting from 16.04.1984 to 31.08.2020.
	Shri Nanak Chand was serving as Upper Division Clerk at NWDA (HQ), Palika Bhawan, New Delhi. He expired 30.04.2021. He served in NWDA with effect from 01.07.1988 to 30.04.2021.
	Shri N.M. Bhutia retired from Investigation Division, Bhubaneshwar from the post of Driver Grade-I on 30.04.2019. His demise happened on 07.10.2020. He gave his service to NWDA with effect from 21.02.1984 to 30.04.2019.
	Shri C. Muniyappa retired from the post of Driver Grade-I, Investigation Division, Bengaluru, NWDA. He served in NWDA with effect from 25.10.1983 to 31.03.2011.
Honouring the Services of the Officials of NWDA, Who expired during the Covid-19 Pandemic; ***Let Us Pray for the Departed Soul to Rest In Peace and have Eternal Life***	

कविता

मोल पानी का

* ललित कुमार स्यानियॉ

जनसंख्याल के बोझ ने मार दिए तालाब।
मटका ले अब खोजते, घाट-घाट पर आब।।

मानव रग-रग रक्ते सा, धरती भीतर नीर।
बिन इसके बस मौत ही, है सबकी तकदीर।।

जब तक जल है जान है, बिन जल काया ढोल।
गोल-गोल धरती कहे, बूंद-बूंद अनमोल।।

सूखी नदियां देखकर, करे प्रकृति संताप।
बढ़ा प्रदूषण इस कदर, घटा श्वासस का चाप।।

बच्चों को तालीम दें करें न जल बर्बाद।
बिन पानी जीवन नहीं, रखें हमेशा याद।।

बिगड़ा वर्षा संतुलन, लाता है तूफान।
कहीं-कहीं सूखा पड़े, कहीं बाढ़ ले जान।।

नीर जलाशय में नहीं, जंगल डाले काट।
छाया पाएं किस डगर, प्याजस बुझे किस घाट।।

अति दोहन हमने किया, देकर कष्टा तमाम।
किए कार्य का फल मिला, प्रकृति हुई है वाम।।

काटे पादप पल्लवित फैला तभी प्रकोप।
प्रकृति कहे यह सत्यख ही मानव पर आरोप।।

गर्मी में रखना सभी, भरा सकोरा नीर।
प्यासे से व्याकुल हैं विहग गिद्ध-कबूतर-कीर।।

* कनिष्ठस अभियन्ता, रा.ज.वि.अ., मुख्यालय, नई दिल्ली

The Jal Vikas Issue can also be accessed at www.nwda.gov.in

राष्ट्रीय जल विकास अभिकरण, 18–20 सामुदायिक केंद्र, साकेत
नई दिल्ली – 110017 द्वारा प्रकाशित