



**JAL-Vikas**

April-2024

**जल विकास  
अप्रैल-2024**



**राष्ट्रीय जल विकास अभिकरण की आंतरिक पत्रिका**  
(Inhouse Bulletin of National Water Development Agency)

# Activities of NWDA at a Glance



केन्द्र एवं राज्य सरकार के वरिष्ठ अधिकारियों ने दिनांक 18.01.2024 को दौधन बांध स्थल का निरीक्षण तथा गंगऊ डेम का अवलोकन किया जिसमें सुश्री देबाश्री मुखर्जी, सचिव, जल शक्ति मंत्रालय; श्री सुबोध यादव, संयुक्त सचिव, भारत सरकार; एम केन बेतवा परियोजना से संबंधित अधिकारीगण उपस्थित रहे।



Glimpses of Republic Day Celebrations in the offices of National Water Development Agency



Geophysical investigations of DVG Link Project is being carried out by CWPRS scientists at the proposed Nilamatti dam site across Val stream in Damanganga basin on 30.01.2024.



Shri K.S.Naidu, EE, NWDA delivered guest lecture at NWA, Pune on 06.02.2024 on the subject "Inter state and international issues and challenges in ILR projects in India" as part of five day training program to officials of MoJS " Water Laws and River Valley Disputes"

## From DG's Desk



It gives me immense pleasure to place the quarterly issue of "Jal Vikas - April 2024", the in-house bulletin of NWDA which gives a recap of works, functions and activities of NWDA particularly with respect of ILR programme of DoWR, RD&GR of MoJS.

ILR program is now gaining momentum, as after the start of implementation of Ken-Betwa link, MoU for the implementation of Modified PKC-ERCP (integration of PKC with Eastern Rajasthan Canal Project of Rajasthan) link Project has also been signed amongst party States of MP, Rajasthan and MoJS, GoI during January 2024. This project will help in utilizing the available water resources of Chambal basin optimally and there shall be equal exchange of water in Kuno and Parbati between the two States. Godavari-Cauvery link project is also at matured stage and this year's target is to finalize the modified DPR of G-C link and MoU signing for its implementation.

Working DPR of Kosi-Mechi Intra-State link is under progress and work on System Studies of ILR projects for determining long-term effect of canal irrigation in the system and assessment of various possible scenarios is also going on. System Studies of MG link completed and for 04 more projects work is under progress.

Meetings of Steering Committee and SPV of KBLP were held on scheduled dates to deliberate the status/issues of the Ken Betwa Link Project, 5<sup>th</sup> meeting of "Sub-Committee for Comprehensive Evaluation and System Studies of ILR" was also held during the reporting period for discussing the progress of System Studies of ILR Projects.

In the inner pages of the magazine, you can find articles on "Water quality assessment of drinking water at different sites in Delhi" and "Bedti-Varda Link Project". Brief details on status/progress of studies are covered under Technical Digest. Other features of magazine include ILR in Parliament; Water Resources in Media; Glimpses of NWDA; Appointments, Promotion and Retirements of NWDA Officials; Family Corner Articles and Poems contributed by NWDA fraternity etc.

It is hoped that April 2024 issue of Jal Vikas will help to provide the information on ILR programme of NWDA and related activities happening in NWDA environs and in water sector.

**(Bhopal Singh)**  
**Director General**

## Editor's Message



Dear Reader,

On behalf of the Editorial Board, it is with great pride and sincere privilege that I am writing this message to present the quarterly Jal Vikas magazine. It would not have been possible without the contributions from the editorial and technical team. The support and well-timed contribution of content writers deserve special appreciation. Our team expects similar sort of sincere dedication from the writers in near future.

Water is the most important natural resource which needs to be managed sustainably for our well being and economic growth. Use of technology and building climate resilient water infrastructure is needed to achieve this aim. The April-2024 issue of Jal Vikas brings to you another round of new and interesting facts on Interlinking of Rivers.

The main objectives of NWDA are to undertake scientific studies for optimum utilization of water resources of India and to carry out surveys & Investigations work and prepare Detailed Project Reports (DPRs) of river linking proposals under National Perspective Plan (NPP) for Water Resources Development Components coming under both Peninsular and Himalayan Regions of India and thereafter approach concerned States for obtaining concurrence for implementation of the ILR Projects concerned to them.

On achieving the timely completions of these DPRs of both IBWT and ISWT Projects would ultimately play an important role in consensus building exercises and implementing ILR Projects and thereby leading to manage the water resources of our country optimally and sustainably. As you flip through the pages, you will not only find the article on Interlinking of Rivers, but also brief detailing on Technical Digest; ILR in Parliament; Water Resources in Media; and NWDA Activities. It is hoped that this issue of Jal Vikas will help to provide the information on ILR Programme of India and related activities happening in NWDA environs and in the water sector.

I hope the contents of this issue will motivate us all to renew our efforts in the field of water conservation and management. Happy reading to you all!

**(Dilip Kumar)**  
**Editor & Member Secretary**

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Shri Baleshwar Thakur, Chief Engineer (HQ), NWDA	: Chairman
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Dr. Dilip Kumar, Director (Multi-Disciplinary Unit), NWDA	: Editor & Member Secretary
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Smt. Vineeta Sharma, Deputy Director (Hydrology); Shri Amit Boora, Junior Engineer and Smt. Radha, Upper Division Clerk, Multi-Disciplinary Unit (MDU), NWDA, New Delhi.	

The views and opinions expressed by the Authors are their own 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 link proposals under the NPP for Water Resources Development and thereafter approach concerned States for obtaining concurrence for implementation of 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 the MoJS, DoWR, RD & GR) and to secure the repayment of any such borrowed funds/money received on deposits/loan etc. by way of mortgage, pledge, charge 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)\*.
- To support Ken-Betwa Link Project Authority (KBLPA) as specified in Memorandum of Agreement (MoA) signed on 22<sup>nd</sup> March, 2021 for implementation of KBLP.

\* Year of Gazette Notification



## Highlights of NWDA Activities during the Quarter

- DPR of Godavari-Cauvery Link Project for diversion of 4189 MCM has been prepared and circulated to the concerned States on 16.01.2024.
- 8<sup>th</sup> meeting of TEC for Daudhan Dam under Ken-Betwa Link Project was held on 16.01.2024 through VC.
- 5<sup>th</sup> meeting of Steering Committee of Ken-Betwa Link Project was held under the Chairmanship of Ms. Debashree Mukherjee, Secretary, DoWR, RD & GR, MoJS on 19.01.2024 at Khajuraho.
- Memorandum of Understanding (MoU) on Modified Parbati-Kalisindh-Chambal ERCP Link Project has been signed on 28.01.2024 amongst States of MP, Rajasthan and Govt. of India.
- Draft FR of Gandak-Ganga Link Project has been finalized.
- Agreement has been signed between NWDA and M/s Balaji Surveyor, New Delhi for Topographical and Hydrological of M-G Link Project.
- 7<sup>th</sup> meeting of TAG-KBLPA was held on 17.02.2024 at Lucknow under the Chairmanship of CEO, KBLPA in hybrid mode.
- 6<sup>th</sup> meeting of KBLPA was held on 27.02.2024 under the Chairmanship of CEO, KBLPA at Bhopal.
- Water Balance Study Report of Palar Sub-Basin of Cauvery basin was revised and circulated to concerned States on 29.02.2024.
- Meetings regarding preparation of DPR including Hydrology of Modified Parbati-Kalisindh-Chambal Link Project were convened by the Chairman, TFILR Ministry of Jal Shakti, DoWR, RD&GR on 01.03.2024, 04.03.2024 & 15.03.2024.
- 5<sup>th</sup> meeting of "Sub-Committee for Comprehensive Evaluation and System Studies on ILR" was held under the Chairmanship of Shri A.B. Pandya, Secretary General, ICID at New Delhi on 12.03.2024.
- Swachhta Pakhwada 2024 campaign was carried out at NWDA, HQ as well as Field Offices from 16.03.2024 to 31.03.2024.
- Draft MoA amongst Govt. of India and States of Telangana, Andhra Pradesh, Karnataka, Tamil Nadu and Puducherry (UT) has been prepared for implementation of Godavari (Inchampalli barrage)-Cauvery Link Project and circulated to concerned States/UT for perusal and observations.
- An agreement between GSI & NWDA was executed for consultancy work of Geological and Geotechnical Investigation for preparation of DPR of Kosi-Mechi Intra-State Link of Bihar on 27.03.2024.
- DG, NWDA held meeting with Senior Officials of Denmark Embassy regarding India Water Week-2024 on 27.03.2024 at Palika Bhawan, New Delhi. Country Minister, Denmark Embassy has expressed their willingness to join India Water Week- 2024.

## Water quality assessment of drinking water at different sites in Delhi

Dr. Dilip Kumar<sup>1</sup>  
Amit Rawat<sup>2</sup>

### Abstract

The present study aims to assess and compare the drinking water quality according to WHO Standards and then illustrate the resulted diseases. Eight samples have been taken from eight different locations of Delhi. The laboratory tests of the collected samples were performed to determine various physical (temperature, pH, electrical conductivity, etc.), chemical ( $\text{Ca}^{+2}$ ,  $\text{Cl}^-$ ,  $\text{Fe}$ ,  $\text{Mg}^{2+}$ ,  $\text{NO}_3$ ,  $\text{Na}^+$ ,  $\text{SO}_4^{2-}$ ), and microbial such as E. coli, coliform and non-coliform. The resulted water quality was compared with the standard limits. Each sample at different sites has different defect according to specific pollution existed.

**Key Words:** Water quality, sites, WHO standards, Water borne diseases.

### Introduction

The major purpose of monitoring drinking water quality is the protection of public health. Water with pure quality is essential to sustain life, and a satisfactory (adequate, safe and accessible) supply must be available to all. Improving access to safe drinking water can secure human health and even life. Every effort should be made to achieve a drinking water quality as safe as possible. Thus, pure drinking water, should not represent any significant risk to health over a lifetime of consumption. Infants and young children, people who are debilitated or living under unsanitary conditions and the elderly are always at water risk. This is widespread in many societies in low income. Safe drinking-water is suitable for all usual domestic purposes, including personal hygiene. Even though there is always attention for the drinking water quality in small communities; specifically, yet the majority of water quality problems is often related to bacteriological contamination.

### 3) Material and methods

#### 3.1) Study Area and data collection

In order to assess groundwater quality and its related diseases, water samples were collected from different locations of Delhi.

**Table 1: Sites of water samples**

Sample No	Location/Zone of Delhi	Source of water
S1	East	Tube Wells
S2	North East	Tap Water
S3	West	Tube Wells
S4	North West	Tube Wells
S5	Central 1	Tap Water
S6	Central 2	Tube Wells
S7	North West	Tube Wells
S8	South	Tube Wells

<sup>1</sup> Director (MDU), National Water Development Agency, Delhi, India.

<sup>2</sup> Department of Civil Engineering, G B Pant Institute of Engineering & Technology Pauri, (Vmsb Uttarakhand Technical University, Dehradun)



### 3.2) Analysis

#### 3.2.1) Water Quality

The investigated parameters directly related to the safety of the drinking water to human health. Hence, water quality is directly reflected on health of a water body. The following physical parameters were investigated using questionnaire;

#### 3.2.2) Water color

Pure water usually seems to be colorless liquid; however, it possesses some level of color. Unfavorable colors of groundwater can be originated from the decomposition of colored organic matter, humid substances, metals such as iron or manganese or leakage from sewages. The main reason for the change in water color was the over exploitation of water and lowering water table with passing time. Water color was simply and cheaply measured using a Spectrophotometer or simple colorimeter or using visual comparison with known standards. However, water collected from all sites was clear (i.e. colorless).

### 4) Results

#### Results of Physical Measures

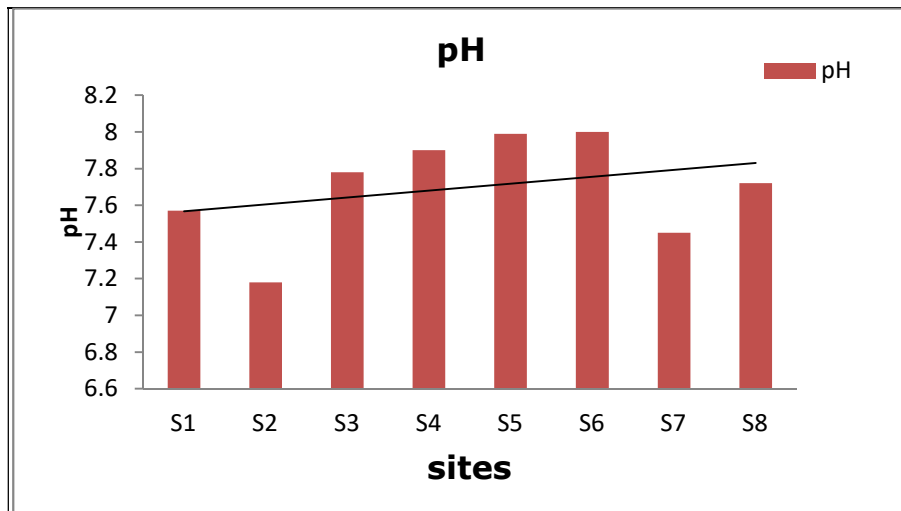
The resulted physical parameters concentrations in the samples of the study area were presented in Table.

**Table 2: Results of Physical Parameters of Samples**

Samples	pH	TDS (ppm)	EC ( $\mu$ s)	Salinity (ppm)
S1	7.57	610	884	450
S2	7.18	630	900	450
S3	7.78	580	848	400
S4	7.9	370	549	270
S5	7.99	270	418	490
S6	8	310	443	220
S7	7.45	6060	8.57 mS	4250
S8	7.72	370	534	260
<b>Standard limits WHO 2013</b>	6.5- 8.5	1000	1000	1 ppt

#### 4.1.1) pH

pH is a significant factor where it evidences water pollution. pH measures of the water samples were obtained between 7.18 and 8 in all sites as shown in Fig. (1). The results showed that water samples tend to be neutralized or little alkaline according to WHO standards.



**Figure 1: pH values from the selected sites**

**4.1.2) Total Dissolved Solids (TDS)**

The water of samples is gaining various compositions from feeding sources and access to discharge area due to exposure to multiple processes causing changes in the chemical composition, such as evaporation, increasing the concentration of elements and conveyed through the percolating water, and mixing processes.



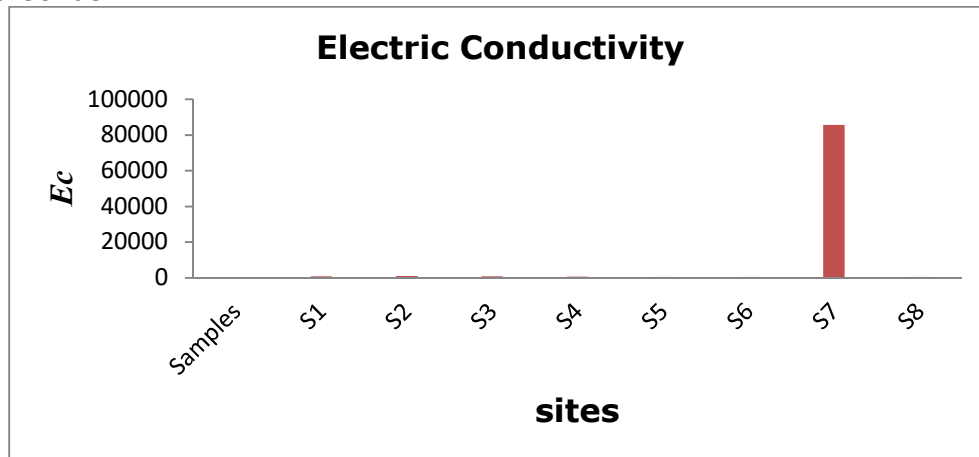
**Figure 2: Total Dissolved Solid**

TDS results were acceptable in all investigated sites (i.e. less than 1000 ppm) except in site S7. The concentration of TDS ranged from (370) ppm to (8000) ppm as shown in Fig. (2). The increased TDS concentration may be attributed to the geological formation where groundwater is stored, but in this case it is due to the direct reject of waste water or due to the precipitation of organic matter in canal.

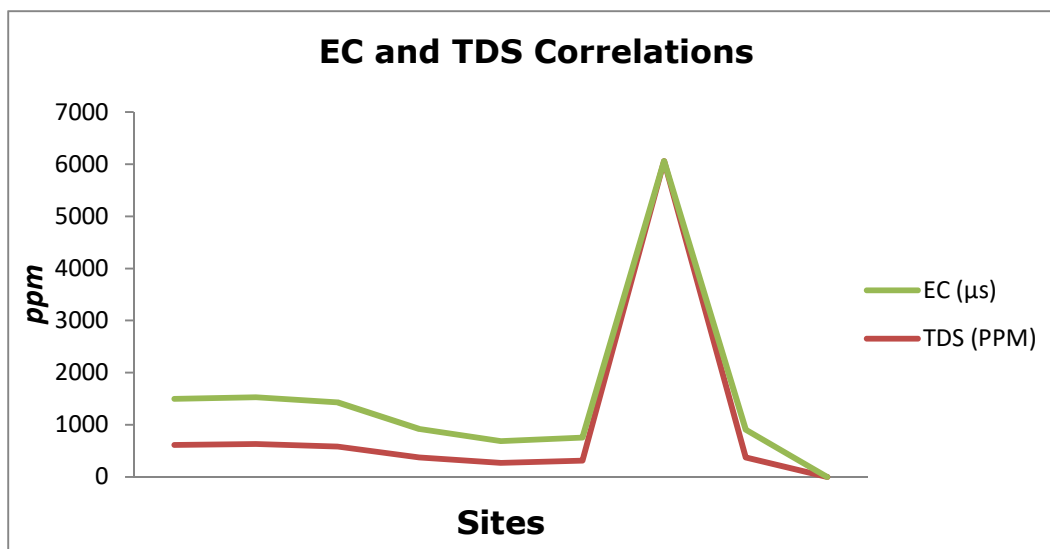
In Site S7, this value was found very high, and it is not acceptable for potable water. According to the standard for drinking purpose, water containing more than 1000 mg/L of TDS is not considered desirable for drinking water supply.

**4.1.3) Electric conductivity (EC)**

EC directly belongs to the total dissolved solid, because the ions coming up from the breakdown of compound (dissolved solids) are responsible for conducting electric current. WHO recommends maximum 1000  $\mu$ S per cm as favorable for drinking water. Therefore, all sites have acceptable EC value except site S7 where the value reached 8.57 mS. This value reveals high quantity of ions due to dissolved solids.



**Figure 3: Electric Conductivity Values**



**Figure 4: Correlation between TDS and EC**

**4.1.4) Salinity**

Salinity, as another measure for the amount of salt in water, being the result of the dissolved solids, which is usually found in drinking water 1 ppt. The results revealed from the samples are all non-saline, but there is remarkable higher value was detected also in site S7. This assures the remarkable saltiness in this potable water.

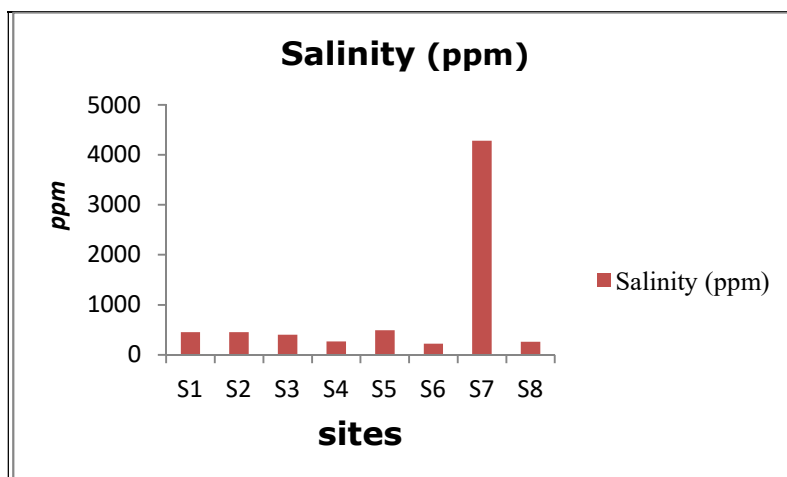


Figure 5: Values of salinity

#### 4.2) Results of Chemical Measures

##### 4.2.1) The Cation (metals) in water

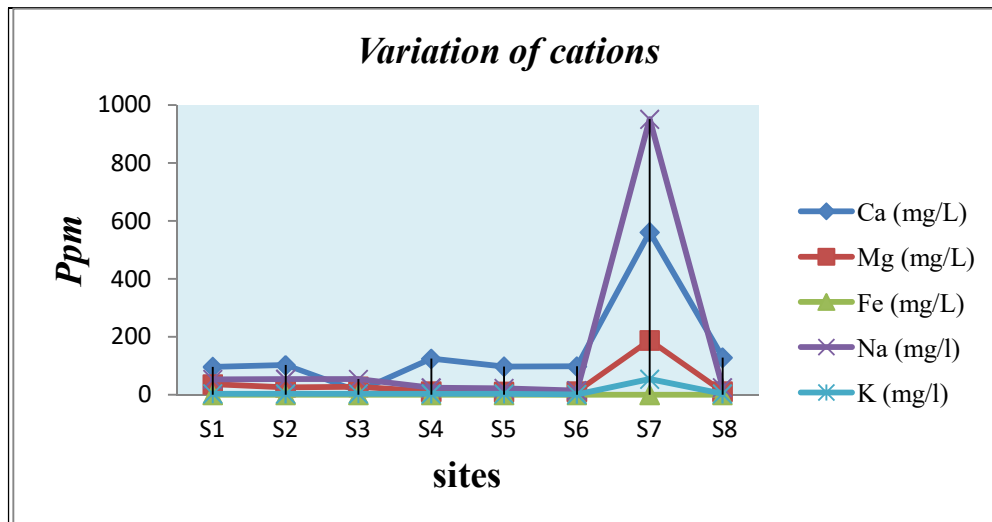
Table (3) shows the results of metals present in the water samples. Each sample was diluted until it reached a legible result.

Table 3: Results of Metal Analysis

Samples	Ca (mg/L)	Mg (mg/L)	Fe (mg/L)	Na (mg/l)	K (mg/l)
S1	4.82	0.36	0	53.3	3.9
S2	3.41	0.26	0	54.2	3.2
S3	3.93	0.28	0	53.9	3.9
S4	4.15	0.11	0	24.5	3.4
S5	3.26	0.1	0	22.5	3.3
S6	3.27	0.11	0	14.8	1.6
S7	5.61	0.47	0	951	54.1
S8	2.57	0.11	0	25	3.4
<b>Standard limits WHO 2013</b>	75	150	< 0.3	2	12

##### 4.2.2) Calcium ion Ca<sup>2+</sup>

The Ca<sup>2+</sup> levels of the various sampling were between 2.5 and 5.7 mg/l (Table 3). Therefore, all tested samples were within the WHO acceptable standard. The level of Ca<sup>2+</sup> concentration in the various samples may be attributed to the natural origin (i.e. geological origin) of calcium compounds in sediments and the related soil. Thus, no evidence of adverse health effects could be attributed to calcium and magnesium contents in drinking water has been found. However, undesirable effects due to the presence of calcium and magnesium in drinking water are often due to their sources or sometimes from ability to render water hard (Tay, 2004).



**Figure 6: Variation of Cations in the site's water samples**

### 5) Conclusion and Recommendations

Even though few sites use water treatment mechanisms, like boiling and water tabs, but the largest number do not do. Therefore, the lack of information on selection of treatment alternatives based on status of drinking water quality on basic parameters an antagonist and synergist effect were noticed. Moreover, poor sanitation and poor hygiene in sites were major influencing factors for the contamination of water during transportation and after storage at sites.

Also, the drinking water pipes having leakage problem which may cause potential hazard to contaminate of water by solid and liquid wastes due to poor management of waste by the community.

This study introduced a typical example on the understanding the physicochemical properties of water collected from different sites in Delhi. The analysis of the physical water quality parameters showed that all samples had a normal pH value ranging between 7.05 and 8. TDS value generally was acceptable except for sample S7 (6060 ppm). EC which is directly related to TDS, also they showed high value in the same sample (8.57 ppm), as well as the salinity value (4250 ppm).

Based on the resulted analysis; however, reducing fecal pollution of sites waters within the community must follow integrated approach. Developing pure water resource management programs is necessary. There is also need for people engagement in water management.

Regular inspection of sanitary and hygienic features and appropriate management of the water supply systems for prevention of contamination must be done and pipes along the supply system must be periodically maintained. Public awareness and involvement must be elaborated; to ensure pure water consumption and then clean water supply with sufficient quantity to the people of the town may not be enough. Also, water handling practice and sanitary must be improved. Therefore, all concerned stakeholders must be working cooperatively, and in participatory approaches for upgrading peoples to understand the causes of contaminants and how to treat water.

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## Bedti - Varada Link Project

\* K.C.Baghel

### Introduction

The Bedti - Varada Link Project envisages diversion of 524 MCM of water through the following two Components :

- I. Bedti (Pattanadahalla/ Shalamalahalla) - Varada (Link I) for diversion of 302 MCM
- II. Bedti (Suremane) - Dharma - Varada (Link II) for diversion of 222 MCM

The combined waters from both of the above links will reach Tungabhadra reservoir through Varada stream and will augment irrigation and other uses in Tungabhadra LBC in Raichur district.

### Objective of the project

In Karnataka, the coastal region i.e. the western part of the Western Ghats receives maximum rainfall. The west flowing rivers originating from the Western Ghats have abundant discharge during the monsoon months. Due to the steep slopes and short length of the rivers, the topography of the region does not allow utilization of the entire water within these basins. While on the eastern side of the Western Ghats, the State receives less rainfall as it falls in the rain shadow region and is prone to prolonged drought. Therefore, it is proposed to divert the available monsoon surplus water of the Bedti basin to the Pattanadahalla, Shamalhalla and Suremane diversion sites on the eastern side of the Western Ghats.

### Location of project area

The Link Project and its components (head works and conveyance system) are located in Sirsi and Yellapur taluks of Uttara Kannada district of Karnataka. The Pattandahalla and Shamalhalla dam sites and the transport system of Link - I are located in Sirsi taluka of Uttara Kannada district. The Suremane Barrage site and the transport system of Link-II are located in Yellapur and Sirsi talukas of Uttara Kannada district.

### Proposal

The Bedti-Varada Link Project envisages construction of the following components in Uttara Kannada district of Karnataka.

#### Link I: Bedti – Varada

- Weir of length of 145.0 m on Pattandahalla stream situated near Siralabail village in Sirsi taluk.
- Approach channel of 0.10 km from the foreshore of Pattanadahalla Weir to the proposed tunnel entry.
- 6.5 km long tunnel
- 0.30 km long canal to join the stream leading to Shalmalhalla stream.
- Weir of length 202.0 m across Shalamalahalla stream near Hulgol village in Sirsi taluk to transfer the combined surplus of 302 MCM available at both the weirs.
- Lifting arrangement to facilitate pumping of water from Shalamala weir.

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\*Assistant Engineer, ID, NWDA, Vadodara

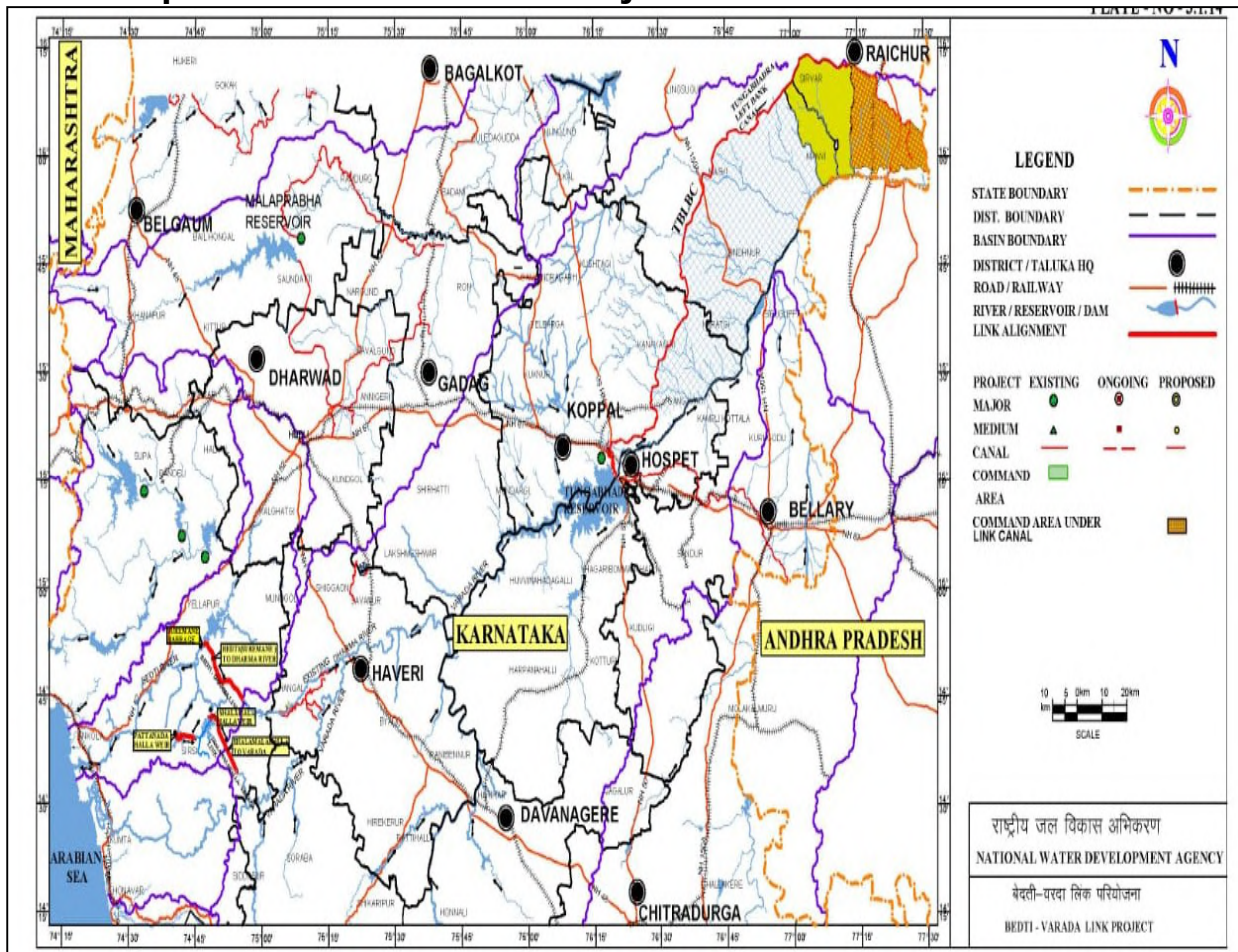


- The 10.15 km long main line originates from the pump house located on the banks of Shalmahalla pond.
- 6.7 km long tunnel taking off from the delivery cistern/chamber.
- Canal of length 1.73 km from tunnel exit to join the stream leading to Varada River.

**Link-II: Bedti – Dharma – Varada Link**

- 165.0 m long weir on river Bedti River near Suremane village in Yellapur taluk to transfer 222 MCM of surplus waters.
- Two stages lifting arrangements to pump waters from Suremane barrage to Dharma reservoir.
- Two stages of raising mains of length 22.30km (10.90 km+11.40 km) taking off from the pump houses on the foreshore of the Suremane barrage.
- 4.23 km long tunnel emerging from delivery chamber to facilitate further transfer of waters to a stream merging into Dharma River.

**Index map of Bedti – Varada Link Project**



**Command area and cropping pattern**

The proposed Bedti-Varada (Link -I) and Bedti – Dharma (Link II) provide augmentation to a total 104900 ha in drought prone Manvi, Sirwar, Devdurga and Raichur taluks of Raichur district of Karnataka State. The details of link-wise command area to be benefited under the Link Project are given below:

### Command area benefited from proposed link project

S.No.	Link	Annual Irrigation (hectares)	Usage (MCM)
1	Bedti-Varda (Link-I)	60300	274
2	Bedti-Dharma (Link II)	44600	202
<b>Total</b>		<b>104900</b>	<b>476</b>

The cropping pattern is adopted as per Tungabhadra LBC Command and is given below.

### Crop pattern in command area

Kharif	Link I		Link II	
	Hectares	%	Hectares	%
Rice	9045	15	6690	15
Jowar	8442	14	6244	14
Millet	4221	7	3122	7
Maize	4221	7	3122	7
Cotton	12663	21	9366	21
Fodder	4211	7	3122	7
Groundnut	9045	15	6690	15
Chili	4221	7	3122	7
Ragi	4221	7	3122	7
<b>Total</b>	<b>60300</b>	<b>100</b>	<b>44600</b>	<b>100</b>

### Water Planning

The proposed diversion of 524 MCM is planned to be utilized for priority areas like irrigation, domestic and industrial needs of the command area. Details are given below.

S.No.	Irrigation (MCM)	Domestic (MCM)	Industrial (MCM)	Transmission losses	Total (MCM)
<b>Link I</b>	274	8	14	6	302
<b>Link II</b>	202	6	10	4	222
<b>Total</b>	476	14	24	10	524

### Power

There is single stage pumping in Link I and two stage pumping in Link II. The details of lifting arrangements are furnished below.

Link/Component	Static Head (m)	Installed Capacity (MW)	Power Requirement (MU)
<b>Link I: Shalamalahalla to Varada</b>	107.50	122	137.90
<b>Link II: Suremane to Dharma</b>	185.50	276.90	181.30
<b>Total</b>		<b>399</b>	<b>319</b>

### Direct benefits

Direct benefits include irrigation of 104900 ha CCA under Tungabhadra LBC, domestic and industrial needs in the command area, fisheries, animal husbandry etc. Details are given below.

Link name	Irrigation (hectares)		Domestic		Industrial (MCM)
	Annual Irrigation	Usage (MCM)	Population (Nos)	Usage (MCM)	
<b>Link I</b>	60300	274	227238	8	14
<b>Link II</b>	44600	207	168134	6	10
<b>Total</b>	<b>104900</b>	<b>476</b>	<b>395372</b>	<b>14</b>	<b>24</b>

### Construction Equipment and Manpower Planning

The Link Project is proposed to be constructed in 5 years and construction equipment and manpower planning has been made accordingly.

### Environmental and ecological aspects

Construction of water resources projects increases water availability which leads to various developmental activities and prosperity in the area, but is also likely to have some adverse effects on the environment. In order to identify the potential environmental impacts, both positive and adverse, due to the proposed Bedti-Varada Link Project and to suggest measures to reduce or ameliorate the anticipated adverse impacts on the environment, a Comprehensive Environmental Impact Assessment Study of the Bedti- Varada Link Project is to be conducted. Department of Water Resources, Government of Karnataka submitted the draft Terms of Reference (ToR) to MoEF&CC, Govt. of India for approval to conduct the CEIA study. Since MoEF&CC desired the State Govt. to finalize the technical aspects of the project at DPR level to find out project specific TORs the Government of Karnataka requested NWDA to prepare DPR of Bedti- Varada Link Project to undertake CEIA study with approved ToR of MoEF&CC. Accordingly, preparation of DPR was taken up and once the CEIA study is completed, the findings and recommendations will be suitably incorporated in the DPR of the project at a later stage.

### Socio-Economic Aspects and R&R

The submergence area below the weir/barrage is limited to the banks of the river, no settlements or people will be affected. Thus, no major adverse impact is expected due to the Link Project from socio-economic point of view. For the implementation of the Bedti-Varada Link Project, 243 ha of forest land and 50 hectares of other land will have to be acquired. Of this, Link-I will require 132 ha of forest land and 30 ha of other land, while Link-II will require 111 ha of forest land and 20 ha of other land.

There is no wildlife sanctuary or national park located in the project area. However, the EAC of MoEF&CC found during scoping that the 'Shalamala Riparian Ecosystem Conservation Reserve' is part of the proposed Shalamalahalla Reservoir and Bedati conservation. On the other hand, this link will provide irrigation to about 104900 ha of drought affected area of Raichur district under TBLBC. This will improve the social condition of farmers etc. There will be a general improvement in the socio-economic condition of the people living in the command area as well as around the project.

### Cost estimate

The estimated cost of the Bedti-Varada Link Project is Rs 2817.62 Crore, out of which the Link-I component will cost Rs. 946.26 Crore while cost of Link-II component is Rs. 1871.36 Crores. Details are given below.

### Summary of cost of Bedti-Varada Link Project

S.No.	Item	Estimated Cost (Rs. Lakhs)		
		Link I	Link II	Total
1.	Unit-I Head Works	4894	10206	15100
2.	Unit-II Transportation System	55972	100183	156155
3.	Unit-III Lifting Mechanism	33760	76747	110507
	<b>Total cost of the project</b>	<b>94626</b>	<b>187136</b>	<b>281762</b>

The annual cost of the project including maintenance cost of main works, depreciation, interest on capital cost etc. for the Link Project is Rs. 451.87 Crores. Whereas the annual cost in respect of Link-I is Rs. 161.48 Crore and the same in respect of Link-II is Rs. 290.40 Crores. Details are presented below.

#### Annual cost of the project

S.No.	Component	Annual Cost (Rs. Lakh)		
		Link I	Link II	Total
1	Interest at the rate of 10% on capital (estimated total cost of the project including cost of land development)	9463	18714	28176
2	Project depreciation	946	1871	2818
3	Depreciation of pumping system @ 8.33% (12 years)	2812	6393	9205
4	Electricity charges at Rs 1.80 per unit for a total of 181.30 MU	1973	1291	3263
5	Maintenance of head works @ 1%	49	102	151
6	Annual operation and maintenance charges at Rs.1500/- per ha for 104900 ha (CCA)	905	669	1574
	<b>Total Annual Cost (1 to 6)</b>	<b>16148</b>	<b>29040</b>	<b>45187</b>

#### Sources of Revenue

Benefits from the proposed Bedti-Varada Link Project include revenue from agricultural produce, irrigation service charges, domestic and industrial water supply, fisheries and animal husbandry. These are the direct benefits which are the regular and expected net benefits due to the implementation of the link project. Details are given below.

#### Annual benefits from Link System

S.No.	Component	Annual Profit (Rs. Lakh) AI: 104900 ha		
		Link I	Link II	Total
1	Irrigation	48364	35772	84136
2	M&I	15736	11248	26984
3	Irrigation cess	995	736	1731
4	Fisheries	6356	4623	10980
5	Animal husbandry	708	545	1252
	<b>Total</b>	<b>72159</b>	<b>52923</b>	<b>125083</b>

#### Benefit Cost Ratio (BCR) and Internal Rate of Return (IRR)

The benefit - cost ratio (BCR) of the Bedti - Varada Link Project is worked out considering the annual cost of the Link Project and the annual likely benefits from

the Link Project at 2020-21 price level. The economic parameters of various options are given below.

**Economic parameters of link system**

<b>Link Project Name</b>	<b>BCR</b>	<b>IRR</b>
Link I	4.47	38.65
Link II	1.82	18.85
Project as a whole	2.77	26.45

**Conclusion:**

1. The link projects are located in Sirsi and Yellapur taluks of Uttara Kannada district of Karnataka.
2. Benefits from the Bedti-Varda Link Project include agricultural produce, irrigation service charges, domestic and industrial water supply, fisheries and animal husbandry.
3. This will improve the social condition of farmers in command area as well as around the project. There will be a general improvement in the socio-economic condition of the people living there.
4. Construction of water resource projects increases water availability which helps in improving the health, developmental activities and prosperity.
5. Bedti-Varada (Link-I) and Bedti-Dharma (Link-II) envisages irrigation augmentation in the drought-prone Raichur district of Karnataka State and provide a total increase of 104900 ha of land.
6. The proposed diversion of 524 MCM will be used for irrigation, domestic and industrial purposes in the command area.
7. The available monsoon surplus water of Bedti Basin is diverted to Pattanadhalla, on the eastern side of the Western Ghats. Diversion is proposed at Shalmalhalla and Suremane diversion points.

## Technical Digest

The technical work program of NWDA mainly consists of preparation of DPR/FR/PFR of various link projects coming under the NPP as well as Intra-State links as proposed by State Governments of India; post DPR activities; modifications and scrutiny of FRs; System Studies of links and Revision of Water Balance Studies (WBS) of River Basins/Sub-Basins and at Diversion Sites as per the requirement. Details of present status and the progress achieved on the above-cited works during the reporting period starting from 01.01.2024 to 31.03.2024 are as follows:

### I. Present Status of Preparation of DPRs

Sl. No.	Name of Link Project	Present Status of Preparation of DPRs
1.	Krishna (Srisailam)-Pennar	Draft report of the link project has been approved by HQ in Feb 2024 and will be circulated shortly.
2.	Godavari (Sitarama LIS) - Krishna (Pulichintala) [renamed as Godavari (SSMPP) - Krishna (Pulichintala)]	The revised draft report is completed and submitted to HQ on 26.02.2024.
3.	Bedti -Varda	Draft Report of Bedti-Varda Link Project has been completed and submitted to Govt. of Karnataka for their comments/Observations.
4.	Krishna (Almatti) - Pennar	Modification of the draft report based on comments of HQ, NWDA is under progress.
5.	Damanganga (Ekdare) - Godavari (Waghad) (Intra-State Link Project)	DPR of Damanganga (Ekdare) - Godavari Link Project was completed and submitted to Govt. of Maharashtra on 15.03.2023. It was revised as per the comments of Maharashtra and submitted to them during June 2023. Further comments were received from WRD, Govt. of Maharashtra which are under compliance. NWDA officials attended the meeting with CE, NMR; SE, CADA; EE, MID Nashik to review the status of report. Updation of report is under progress.
6.	Damanganga-Sabarmati-Chorwad Intra-State link Project	Work of DPR will start after signing of MoU with Govt. of Gujarat. Presently preliminary work such as data collection and study of alternate alignments are under progress.
7.	Damanganga (Val/Vagh) -Vaitarna - Godavari (Kadva Dev) (Intra-State Link Project)	Final DPR of Damanganga-Vaitarna-Godavari link project has been submitted in soft copy to WRD, Govt. of Maharashtra on 28.03.2024.

Sl. No.	Name of Link Project	Present Status of Preparation of DPRs
8.	Subarnarekha-Mahanadi	Preparation of chapters of DPR; Field work for diamond core drilling at Subarnarekha barrage; topographical and strip survey of S-M link Canal and Strip & Reservoir area survey of Singlijhor reservoir are under progress. Officers of CWC and NWDA made joint visit to the major river crossing and reservoir of link project led by Member(RM), CWC on 07.01.2024.
9.	Mahanadi (Barmul)-Godavari (Dowlaiswaram) (MG)	Agreement has been signed between NWDA and M/s. Balaji Surveyors Pvt. Ltd towards carrying out the topographical survey including hydrographic survey of M-G link project (Reach-I). Technical team of NWDA, Bhubaneswar visited the survey site from 17.01.2024 to 19.01.2024, 28.01.2024 to 30.01.2024 and from 15.02.2024 to 19.02.2024 to inspect the ongoing survey work and fixing/casting of TBM Pillars. Preparation of draft chapters of DPR are under progress.
10.	Manas-Sankosh-Tista-Ganga (MSTG)	Field survey of Mahananda (Fulahar) river has been completed. Officials from NWDA visited the survey site for final inspection. A meeting was held jointly chaired by Secretary, D/o WR, RD&GR, MoJS and Secretary, Ministry of Power on 12.03.2024 on issues relating to implementation of Sankosh Hydro-Electric Project. Preparation of draft chapters of DPR are under progress.
11.	Ganga-Damodar-Subarnarekha (GDS)	Alignment for DPR has been modified based on topographical condition of site and also considering views of CWC on Subarnarekha-Mahanadi link canal project. Tender document and estimate for topographical survey of GDS link is submitted by Field Office on 30.11.2023 for AA&TS and is under scrutiny in Circle office.
12.	Sarda-Yamuna	Topographical survey of the link alignment is completed by M/s Root Design Engineers & Technocrats Pvt. Ltd., Mysore. 2 <sup>nd</sup> draft report has been received from the firm and is under scrutiny. Preparation of draft chapters of DPR are under progress.
13.	Modified Parbati-Kalisindh-Chambal	MoU has been signed among the States of MP, UP and Ministry of Jal Shakti (MoJS), Govt. of India (GoI) on 28.01.2024 in New Delhi for preparation of DPR of Modified PKC link and on broad planning of the link project. Now the DPR of Modified PKC link is under preparation primarily by both the States. The hydrology has been finalized by CWC and NWDA. A draft MoA for the

Sl. No.	Name of Link Project	Present Status of Preparation of DPRs
		implementation of the link project has also been shared with both the States on 13.03.2024. DPRs of 8 projects Sonpura, Pawa, Nainagrah, Dhanwari, Kateela Dam, Kumbhraj, Sonchiri and Bachora Dam received from WRD, MP. Draft hydrology is shared with both the States after assessing the water balance in Upper Chambal projects & Kuno sub-basin projects after incorporating the U/S utilization received from both the States.

## II. Present Status of Post DPR Activities

Sl. No.	Name of Link Project	Present Status of Post DPR Activities
1.	Ken-Betwa	Various works in respect of implementation of KBLP is under progress which includes Land Acquisition work, S&I works of 2 new barrages across Ken river, Stage-II Forest clearances & persuasion for clearance from CEC of Supreme Court, Model study of Daudhan dam, procurement of Project Management Consultancy Services for Ken-Betwa Link Project etc. During the reporting period 5 <sup>th</sup> meeting of SC-KBLP; 6 <sup>th</sup> meeting of KBLPA; 7 <sup>th</sup> meeting of TAG-KBLPA; 12 <sup>th</sup> meeting of CEC for engagement of Project Management Consultancy for KBLPA and 8 <sup>th</sup> meeting of TEC for EPC execution of Daudhan Dam, Upper and Lower level tunnel were held and related works/issues were deliberated. Ms. Debashree Mukherjee, Secretary, DoWR, RD&GR along with officials of NWDA and KBLPA visited Daudhan Dam site under KBLPA on 18.01.2024.
2.	Godavari (Inchampalli Barrage) - Cauvery (Grand Anicut)	As per the decision of 3 <sup>rd</sup> Consultation meeting held on 18.02.2022 a TFR was prepared to recast the proposal limiting the transfer to 4000 MCM from Godavari alongwith combining the proposal for supplementation in Krishna basin through Bedti-Varda link and circulated to party States and it is further modified suitably in consultation with States. A meeting between the officials of I&CAD, Govt. of Telangana, CWC and NWDA was held on 01.02.2024 for review the issues of Capacity of Water conductor System from Sammakka barrage, Submergence issues on River Godavari and offtake of link alignment with respect to the DPR of GC link project. The modified proposal comprises of Godavari



Sl. No.	Name of Link Project	Present Status of Post DPR Activities
		(Inchampalli)-Cauvery with diversion of 4189 MCM and Bedti-Varda link with diversion of 524 MCM. The modified DPR as per the above proposal for transfer of about 4189 MCM of water in the interim phase has been circulated to Party States. A Draft Memorandum of Agreement (MoA) for implementation of link project has been prepared and circulated to concerned States/UT for perusal and observations. Efforts are being made for expediting the consensus building for implementation of the link project.
3.	Par-Tapi-Narmada and Damanganga-Pinjal	Draft MoU was sent to Govt. of Maharashtra and Govt. of Gujarat on sharing of water and clearances of project for concurrence. The issue is being pursued to get consensus on the MoU. Modification of the DPR incorporating the hydrological study is being carried out by ID, Valsad and updation of cost estimate as per the revised rate analysis is under progress.
4.	Kosi-Mechi (Intra-State Link Project)	MoU was signed between NWDA and Govt. of Bihar for preparation of working DPR of the link project. Work of S&I and preparation of working DPR is under progress. A PIB note for Central Support and implementation mechanism is under consideration in the Ministry. Cost estimate of the project has been updated and approved by TAC of MoJS. Joint meeting of CWC, NWDA, CSMRS and WRD, Govt. of Bihar for design aspects and various issues related to link project was held on 13.03.2024. An agreement between GSI&NWDA was executed for consultancy work of Geological and Geotechnical Investigation for preparation of the DPR.
5.	Wainganga (Gosikhurd)-Nalganga (PurnaTapi) Intra-State Link Project	CE(S), NWDA visited the W-N link project alignment and discussed with WRD officials of Govt. of Maharashtra in connection with extension of W-N link upto Pentakali dam and about status of modification of W-N link report with EE, WRD, Akola during July 2023. Further work will be taken up subject to consent of the Govt. of Maharashtra for bearing the cost.

### III. Present Status of Preparation/Modifications of FRs/PFRs of Link Projects

Sl. No.	Name of Link Project	Present Status of Modification of FRs/PFRs
1.	Chunar-Sone Barrage	Draft FR of link project is completed and presently under modification as per the comments of HQ/CE(North) office & based on RWBS of Ganga basin up to Chunar.
2.	Sone Dam-STG	Report of topographical survey submitted by the M/s Excelinnova, New Delhi is under modification as per the comments/observations of higher offices. Other investigation works and preparation of draft chapters are under progress.
3.	PFR of Bedti-Hirevaddati Link Project	PFR of the link project considering alternatives I&II is completed by IC, Hyderabad and is under scrutiny in CE(S).
4.	PFR of Godavari (Sammakka Sagar Barrage) - Cauvery (Grand Anicut) link project with a diversion of 15600 MCM water	Preparation of PFR is under progress.
5.	Ghaghara-Yamuna	Draft FR of G-Y link has been submitted by field office to HQ on 28.03.2024.
6.	Gandak-Ganga	Draft FR of link project has been finalised and submitted to HQ by CE(N) office on 12.01.2024 for observation/comments.

### IV. System Studies of Link Project

Sl. No.	Name of Link Project	Present Status of System Studies
1.	System Study of Mahanadi (Barmul)-Godavari (Dowlaiswaram) (MG) (By NIH, Roorkee)	NIH has submitted the final report of System Studies of MG link to NWDA.
2.	System Study of Ganga-Damodar-Subarnarekha (By NIT, Patna)	Work is under progress at NIT, Patna. Its progress was discussed in the review meeting taken by DG, NWDA on 15.02.2024 and also in the 5 <sup>th</sup> meeting of Sub-Committee for Comprehensive Evaluation and System Studies on ILR, held on 12.03.2024.

Sl. No.	Name of Link Project	Present Status of System Studies
3.	System Study of Manas-Sankosh-Tista-Ganga (MSTG) (By IIT, Guwahati)	Work is under progress by IIT Guwahati. Requested data/information are being provided to them as and when requested. Officials of IIT, Guwahati visited the BBSR office, NWDA during July, 2023 and discussed about progress of the work. Progress of the study was also discussed in the 5 <sup>th</sup> meeting of Sub-Committee for Comprehensive Evaluation and System Studies on ILR which was held on 12.03.2024.
4.	System Study of Farakka - Sundarban (By NIH, Roorkee)	Work is under progress by NIH Roorkee and requested data/information are being provided to them as and when requested. A brief discussion was held with NIH, Roorkee regarding data of rain gauge stations, discharge data of rivers etc. A bilateral meeting was also held on 16.02.2024 for finalization of GCA&CCA boundary of proposed F-S link project and this boundary has been prepared and sent to the NIH, Roorkee. Geodatabase containing the project area details such as GCA, CCA, delineated branch canals have been received from the NIH, Roorkee. Progress of the study was discussed in the review meeting taken by DG, NWDA on 15.02.2024 and also during 5 <sup>th</sup> meeting of Sub-Committee for Comprehensive Evaluation and System Studies on ILR held on 12.03.2024.
5.	System study of Subarnarekha-Mahanadi (By NIT, Warangal)	Work is under progress by NIT, Warangal and its progress has been discussed in the review meeting taken by DG, NWDA on 15.02.2024 and during 5 <sup>th</sup> meeting of Sub-Committee for Comprehensive Evaluation and System Studies on ILR which was held on 12.03.2024. Requested data/information are being provided by NIT, Warangal as and when requested.
6.	System Studies of Godavari-Krishna-Pennar-Cauvery-Vaigai-Gundar Link system.	EoIs received so far for this work have been deliberated in 5 <sup>th</sup> meeting of Sub-Committee on Comprehensive Evaluation and System Studies on ILR and Chairman of the Sub-Committee suggested that before taking up this study, scenarios of MSTG link should be well understood as it is the mother link of other related southern links.

## V. Revision of Water Balance Studies (WBS)

During the reporting period, WBS of Palar Sub Basin of Cauvery Basin was revised & circulated and revision of 10 WBS are under progress, out of which 04 WBS are at finalization stage. Model Water Balance Study using System Studies and modelling techniques of Godavari basin between SRSP & Polavaram was completed by IIT, Roorkee and final study report of 8 sub-basins of Godavari basin between SRSP and Polavaram have been received.

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## ILR in Parliament

Here, the ILR issues raised and were discussed in both the houses of Parliament during the Budget session of the Parliament held from 31.01.2024 to 10.02.2024 and projected on the Parliament of India website (Lok Sabha and Rajya Sabha) are incorporated for information to our readers/stakeholders.

### Lok Sabha

- 1.1 Whether the Government is contemplating on any special scheme to inter-link rivers of the country particularly in Bihar; if so, the details along with the current status thereof; whether any shortcomings have been reported in the earlier schemes of inter-linking of rivers and if so, the details thereof; the details of timeline fixed for completion of inter-linking of rivers; whether it is a fact that on one side the northern Bihar region gets devastated by catastrophic floods every year and on the other side the Southern Bihar region is compelled to face drought; if so, the details thereof and the concrete efforts being made so far towards preventing the impending devastation due to delay in inter-linking of the rivers; and whether Bihar has to face fury of floods due to the excess water released in rivers every year from the upper catchment area and if so, the details thereof?**

A National Perspective Plan (NPP) was prepared in the year 1980, for water resources development through inter basin transfer of water, from water surplus basins to water-deficit basins/ regions. Under the NPP, the National Water Development Agency (NWDA) has identified 30 inter-linking of rivers (ILR) projects (16 under Peninsular Component and 14 under Himalayan Component) for preparation of Feasibility Reports (FRs). Out of the 30 ILR projects identified under the NPP, Pre-Feasibility Reports (PFRs) of all the 30 projects have been completed, while FRs of 24 projects and Detailed Project Reports (DPRs) of 11 projects have been completed. Under the NPP, 6 ILR projects, inter alia, benefit the State of Bihar, details of which are given at **Annexure-I**. Details and current status of the ILR projects under the NPP are given at **Annexure-II**.

Planning of any ILR project is improved and modified progressively at every stage of study in consultation with the concerned States. However, for an ILR project to reach implementation stage, consensus building amongst the party States remains the biggest challenge.

Government of India is pursuing the ILR programme in a consultative manner and has accorded top priority to it. Concerted efforts at various levels have been made to build necessary consensus amongst the party States, for implementation of various ILR projects. A "Special Committee on Inter-linking of Rivers" has been constituted in September, 2014 for the implementation of ILR programme. 21 meetings of the Special Committee have been held so far. Further, a Task Force for Inter-linking of Rivers has been constituted in April, 2015 for expediting the works under the ILR programme and 18 meetings of the Task Force have been held so far. States have wide representation and active participation in these meetings. The implementation of the ILR projects depends on the party States to reach a consensus.

Further, as per information provided by the Government of Bihar, the State of Bihar is prone to floods in its northern regions, having flood prone area of 68.80 lakh hectares. Predominantly, northern part of Bihar gets affected by floods every year due to heavy rainfall in the upper catchment areas, which mainly lie in Nepal. The southern part of Bihar faces problems of flash floods as well as drought. As intimated by the Government of Bihar, 3800 kilometres of flood-protection embankment has been constructed by the State Government to mitigate floods.

### Annexure-I

#### Details of ILR projects benefitting the State of Bihar

Sl. No	Name	States / Countries benefited	Annual Irrigation (Lakh hectares)	Domestic & Industrial (MCM)	Hydro power (Mega watt)	Status
1.	Kosi-Mechi link	Bihar & Nepal	4.74 (2.99+1.75)	24	3180	PFR completed
2.	Kosi-Ghaghra link	Bihar, Uttar Pradesh (UP) & Nepal	8.35 (6.05+1.20+1.10)	0	--	FR completed
3.	Chunar-Sone Barrage link	Bihar & UP	0.67 (0.13 + 0.54)	--	--	PFR completed
4.	Sone Dam - Southern Tributaries of Ganga link	Bihar & Jharkhand	3.07 (2.39 + 0.68)	360	95(90 Dam PH) & 5 (Canal PH)	PFR completed
5.	Manas-Sankosh-Tista-Ganga (M-S-T-G) link	Assam, West Bengal (WB) & Bihar	3.41 (2.05 + 1.00 + 0.36)	--	--	FR completed
6.	Jogighopa-Tista-Farakka link (Alternative to M-S-T-G)	Assam, WB & Bihar	3.559 (0.975+1.564+1.02)	265	360	PFR completed (The proposal has been dropped)

**Annexure-II**
**Details and current status of the ILR Projects under the NPP  
Peninsular Component**

Sl. No	Name	States benefited	Status
1	a) Mahanadi (Manibhadra) – Godavari(Dowlaiswaram) link	Andhra Pradesh & Odisha	FR completed
	b) Alternate Mahanadi (Barmul) - Rushikulya – Godavari (Dowlaiswaram) link	Andhra Pradesh & Odisha	FR completed
2	Godavari (Polavaram) - Krishna (Vijayawada) link	Andhra Pradesh	FR completed
3	a) Godavari (Inchampalli) - Krishna (Nagarjunasagar) link	Telangana	FR completed
	b) Alternate Godavari (Inchampalli) -Krishna (Nagarjunasagar) link *	Telangana	DPR completed
4	Godavari (Inchampalli/ SSMPP) – Krishna (Pulichintala) link	Telangana & Andhra Pradesh	DPR completed
5	a) Krishna (Nagarjunasagar) – Pennar (Somasila ) link	Andhra Pradesh	FR completed
	b) Alternate Krishna (Nagarjunasagar) - Pennar (Somasila ) link *	Andhra Pradesh	DPR completed
6	Krishna (Srisailem) – Pennar link	Andhra Pradesh	Draft DPR completed
7	Krishna (Almatti) – Pennar link	Andhra Pradesh & Karnataka	Draft DPR completed
8	a) Pennar (Somasila) - Cauvery (Grand Anicut) link	Andhra Pradesh, Tamil Nadu & Puducherry	FR completed
	b) Alternate Pennar (Somasila) – Cauvery (Grand Anicut) link *	Andhra Pradesh, Tamil Nadu & Puducherry	DPR completed
9	Cauvery (Kattalai) - Vaigai -Gundar link	Tamil Nadu	DPR completed
10	a) Parbati –Kalisindh - Chambal link	Madhya Pradesh & Rajasthan	FR completed
	b) Modified Parbati – Kalisindh- Chambal link (duly integrated with ERCP)	Madhya Pradesh & Rajasthan	Draft PFR completed
11	Damanganga - Pinjal link(As per DPR)	Maharashtra (only water supply to Mumbai)	DPR completed
12	Par-Tapi-Narmada link (As per DPR)	Gujarat & Maharashtra	DPR completed
13	Ken-Betwa link	Uttar Pradesh & Madhya Pradesh	DPR completed & Project is under implementation

14	Pamba - Achankovil - Vaippar link	Tamil Nadu & Kerala	FR completed
15	Bedti - Varda link	Karnataka	DPR completed
16	Netravati - Hemavati link **	Karnataka	PFR completed

\*Due to pending consensus on Manibhadra and Inchampalli dams, alternate study to divert unutilized waters of Godavari river was carried out and DPR of Godavari (Inchampalli) - Krishna(Nagarjunasagar) - Pennar (Somasila) - Cauvery (Grand Anicut) Link Projects completed. Godavari-Cauvery (Grand Anicut) Link Project has been prepared, comprising of Godavari (Inchampalli / Janampet) - Krishna (Nagarjunasagar), Krishna (Nagarjunasagar)-Pennar (Somasila) and Pennar (Somasila)-Cauvery (Grand Anicut) Link Projects.

\*\* Further studies are not taken up since after implementation of Yettinhol project by Govt. of Karnataka, no surplus water is available in Netravati basin for diversion through this link.

### Himalayan Component

Sl. No.	Name of the Link	Country/ States benefited	Status
1.	Kosi - Mechi link	Bihar & Nepal	PFR completed
2.	Kosi - Ghaghra link	Bihar, Uttar Pradesh & Nepal	FR completed
3.	Gandak - Ganga link	Uttar Pradesh & Nepal	FR completed (Indian portion)
4.	Ghaghra - Yamuna link	Uttar Pradesh & Nepal	FR completed (Indian portion)
5.	Sarda - Yamuna link	Uttar Pradesh & Uttarakhand	FR completed
6.	Yamuna - Rajasthan link	Haryana & Rajasthan	FR completed
7.	Rajasthan - Sabarmati link	Rajasthan & Gujarat	FR completed
8.	Chunar - Sone Barrage link	Bihar & Uttar Pradesh	PFR completed
9.	Sone Dam - Southern Tributaries of Ganga link	Bihar & Jharkhand	PFR completed
10.	Manas - Sankosh - Tista - Ganga (M-ST-G) link	Assam, West Bengal & Bihar	FR completed
11.	Jogighopa - Tista - Farakka link(Alternative to M-S-T-G)	Assam, West Bengal & Bihar	PFR completed (The proposal has been dropped)
12.	Farakka-Sundarbans link	West Bengal	FR completed
13.	Ganga (Farakka) - Damodar - Subarnarekha link	West Bengal, Odisha & Jharkhand	FR completed
14.	Subarnarekha - Mahanadi link	West Bengal & Odisha	FR completed



**1.2 Whether the Government proposes to inter-link the Bisalpur-Brahmani river with the Bisalpur Dam by way of external assistance to overcome the shortage of drinking water in the said Dam which is the main drinking water source for Jaipur, Ajmer and Tonk districts and partly for Nagaur district as well; if so, the time by which such inter-linking is likely to be completed and if not, the reasons therefor; whether the Government proposes to implement Eastern Rajasthan Canal Project (ERCP) through external assistance to provide water for drinking and irrigation purposes in the districts of the eastern region of Rajasthan facing the shortage of drinking water; and if so, the time by which it is likely to be implemented and if not, the reasons therefor?**

The Government of India formulated a National Perspective Plan (NPP) in 1980 for transferring water from water surplus basins to water deficit basins / areas. National Water Development Agency (NWDA) has identified 30 links (16 under Peninsular Component and 14 under Himalayan Component) under the NPP. NWDA has also studied 49 proposals of Intra-State link projects, as received from the various State Governments.

There is no such proposal of inter-linking of the Bisalpur-Brahmani River with the Bisalpur Dam under the NPP. Also, no such proposal under Intra-State link has been received from the State Government of Rajasthan. However, the supplementation of Bisalpur dam is envisaged under the Modified Parbati-Kalisindh-Chambal (PKC) link duly integrated with the Eastern Rajasthan Canal Project (ERCP), which has been identified as one of the priority links under the NPP.

The draft Pre-Feasibility Report (PFR) of the Modified PKC link was circulated to the States of Madhya Pradesh and Rajasthan, in January, 2023. After consistent efforts made by the Government of India at various levels, to build consensus between the two States, for taking the Link Project forward for implementation, a Memorandum of Understanding (MoU) on broad planning of the Link Project and preparation of its Detailed Project Report (DPR) has been signed amongst the States of Rajasthan and Madhya Pradesh and the Government of India.

The Modified PKC Link Project envisages to provide drinking and industrial water in 13 districts of eastern Rajasthan, inter alia, including Jaipur, Ajmer and Tonk districts as well as Malwa and Chambal regions of Madhya Pradesh, apart from providing irrigation in 5.6 lakh hectare (ha) area or more in both the States, including supplementation of en-route tanks in the States. The Modified PKC Link Project would help in utilizing the available water resources of Chambal basin optimally and economically.

However, it is for the State Governments of Madhya Pradesh and Rajasthan, to finalize the DPR of various components of the link project. Subsequent to this, the time period for implementation of the project, funding pattern etc shall be evaluated.

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Water Resources in Media

सीएम ने कैबिनेट बैठक में दी जानकारी

केन-बेतवा प्रोजेक्ट की फरवरी में ही रखी जा सकती है आधारशिला

भोपाल लोकसभा चुनाव की आचार संहिता लगने से पहले देश की पहली नदी जोड़ी परियोजना केन-बेतवा लिंक के प्रधानमंत्री नरेंद्र मोदी फरवरी माह में दौधन डेम की आधारशिला रख सकते हैं। मुख्यमंत्री डॉ. मोहन यादव ने बुधवार को हुई मंत्रिमंडल की बैठक में इसकी जानकारी देते हुए बताया कि फरवरी 2024 में केन-बेतवा लिंक का भूमिपूजन किया जाएगा। विधानसभा चुनाव से ठीक पहले पीएमओ के निर्देश पर 5 अक्टूबर को भी इसके भूमिपूजन की सारी तैयारियां पूरी कर ली गई थीं, लेकिन अचानक

इसे टाल दिया गया था। केन-बेतवा लिंक प्रोजेक्ट अर्थांरिटी ने हाल ही 11 निर्माण कंपनियों की मांग पर दौधन डेम के टेंडर की बिड जमा करने की तारीख 5 मार्च तक बढ़ाई थी। गुरुवार को भोपाल में टेंडर प्रक्रिया जल्द पूरी करने के लिए निर्माण कंपनियों के साथ एक बैठक भी रखी गई है। इससे पहले केंद्र सरकार की ओर से केन-बेतवा लिंक प्रोजेक्ट के लिए गठित स्टीयरिंग कमेटी की बैठक हाल ही में 17 से 19 जनवरी के बीच खजुराहो में आयोजित की गई थी।

हाथ जुड़े, अब नदियां जुड़ेंगी • केंद्रीय जलसंचित मंत्री, मप्र और राजस्थान के सीएम ने त्रिपक्षीय समझौते पर किए हस्ताक्षर

मप्र-राजस्थान के बीच 75 हजार करोड़ की नई नदी जोड़ी परियोजना, जुड़ेंगी चंबल-पार्वती-कालीसिंध व 6 नदियां



2004 में बना था ब्रह्मा, 20 साल बाद बनी यह सहमति

5 साल में अक्टूबर परियोजना • गंगा नदी के तट पर 5 साल में 1.5 करोड़ लोगों को लाभ पहुंचाने का लक्ष्य है।

मजदूरी के लिए यह योजना • मजदूरों को रोजगार देने के लिए यह योजना है।

दैनिक भास्कर, छत्तरपुर, दिनांक : 20-01-2024

पार्वती, कालीसिंध परियोजना विवाद खत्म

राज्य ब्यूरो, भोपाल : राजस्थान और मध्य प्रदेश के बीच पार्वती, कालीसिंध और चंबल परियोजना को लेकर लंबे समय से चल रहे विवाद का रविवार को पटाक्षेप हो गया। मध्य प्रदेश के मुख्यमंत्री डा. मोहन यादव ने राजस्थान के मुख्यमंत्री भजनलाल शर्मा के साथ बैठक की और दोनों मुख्यमंत्री दिल्ली पहुंचे। वहां केंद्रीय जल शक्ति मंत्री गजेंद्र सिंह शेखावत की उपस्थिति में जल शक्ति मंत्रालय के श्रम शक्ति भवन स्थित कार्यालय में दोनों राज्य और केंद्र सरकार के बीच त्रिपक्षीय समझौता ज्ञापन हो गया। इसके अंतर्गत अब एकीकृत पार्वती, कालीसिंध और चंबल-इंआरसीपी लिंक परियोजना का विस्तृत परियोजना प्रतिवेदन बनाया जाएगा। मध्य प्रदेश में सात सिंचाई परियोजनाओं का

संधीय संघवाद का स्वर्णिम उदाहरण

इस अवसर पर केंद्रीय जल शक्ति मंत्री गजेंद्र सिंह शेखावत ने कहा कि यह दिन मध्य प्रदेश और राजस्थान के पानी की कमी वाले 26 जिलों के लिए स्वर्णिम सूर्योदय का दिन है। परियोजना से लगभग 5.60 लाख हेक्टेयर क्षेत्र में सिंचाई के साथ ही बांधों और बड़े तालाबों में पानी का संवय कर जल-स्तर उठाने में सफलता प्राप्त होगी। यह परियोजना संधीय संघवाद का स्वर्णिम उदाहरण है। राजस्थान के मुख्यमंत्री भजन लाल शर्मा ने कहा कि भविष्य में दोनों राज्यों के रिश्ते और प्रगाढ़ होंगे।

निर्माण होगा। इससे 13 जिलों में 3.37 लाख हेक्टेयर क्षेत्र में सिंचाई सुविधा उपलब्ध होगी। राजस्थान के सीएम के साथ बैठक के बाद मुख्यमंत्री मोहन यादव ने कहा कि पार्वती, कालीसिंध व चंबल नदियों के जल बंटवारे को लेकर लिए जा रहे निर्णय से दोनों राज्यों के किसानों का जीवन बदलेगा। यह था विवाद : ईस्ट राजस्थान केनाल प्रोजेक्ट (इंआरसीपी) के लिए बांध बनाने व पानी बंटवारे को लेकर मप्र व राजस्थान के बीच विवाद हो गया था। राजस्थान सरकार का आरोप था कि 2005 में हुए समझौते के अनुसार बांध बनना था, लेकिन मप्र सरकार ने एनओसी नहीं दी। राजस्थान सरकार ने इंआरसीपी को पूरा करने का निर्णय लिया और बांध बनाना शुरू हुआ तो मप्र सरकार सुप्रीम कोर्ट में याचिका लगा दी थी।

दैनिक भास्कर, भोपाल, दिनांक 29-01-2024

चार नदियों की लिंक परियोजना वरदान चंबल और मालवा अंचल के 13 जिलों को मिलेगा सिंचाई का लाभ

नवभारत न्यूज भोपाल, 31 जनवरी: लगभग दो दशकों से लंबित पार्वती, कालीसिंध, चंबल और इंआरसीपी लिंक परियोजना अब मृत रूप ले सकेगी। इस परियोजना से चंबल और मालवा अंचल के 13 जिलों को सिंचाई का लाभ मिलेगा।



यह जानकारी जल संसाधन मंत्री तुलसीधर सिंह सिलावट ने दी। उन्होंने बताया कि प्रदेश के इर्द गिर्द बरसे जिलों जैसे मुर्गा, प्यारिलार, तिरापुरी, गुना, फिंड और स्यापुर में पानी की उपलब्धता बढ़ेगी, यही औद्योगिक क्लस्टर वाले जिलों जैसे इंदौर, ऊज्जैन, भार, आगरा-मालवा, शाजपुर, देवास और राजगढ़ के औद्योगिकरण को और बढ़ावा मिलेगा। इससे प्रदेश के मालवा और चंबल अंचल में लगभग 03 लाख हेक्टेयर का सिंचाई रकबा बढ़ेगा।

लिंक परियोजना के लिए किया एमओयू

सिलावट बृहदार को सीएम यादव से मंत्रालय में मुलाकात कर उक्त त्रिपक्षीय परियोजना के एमओयू पर मध्य प्रदेश, राजस्थान और केंद्र सरकार के दरवाजे खोलें पर आभार व्यक्त किया। मध्य प्रदेश, राजस्थान और केंद्र सरकार के बीच त्रिपक्षीय भवन स्थित जल शक्ति मंत्रालय के कार्यालय में संशोधित पार्वती, कालीसिंध, चंबल और इंआरसीपी लिंक परियोजना के त्रिपक्षीय समझौता ज्ञापन पर हस्ताक्षर हुए।

दैनिक भास्कर, नई दिल्ली, दिनांक 30-01-2024

केन-बेतवा लिंक परियोजना के लिए जमीन अधिग्रहण की प्रक्रिया को तेज किया जाएगा

पन्ना टाइगर रिजर्व के लैंड स्केप प्लान की प्रगति की भी समीक्षा की

भारत संकायदाता। छत्तरपुर

केन-बेतवा लिंक परियोजना की स्वर्णिम कमेटी की बैठक एकूबर को छत्तरपुर के निजी होटल में हुई। बैठक को अध्यक्षता जल शक्ति मंत्रालय के सचिव देवाशी मुखर्जी ने की। बैठक में परियोजना के तहत बौद्ध शिव मठ के बने वाले डेम के लिए शेष जमीन का अधिग्रहण पूरा करने और लिंक नहर के लिए तेजी से भू अधिग्रहण करने के निर्देश दिए हैं।

देश की पहली नदी जोड़ी परियोजना को निर्माण के लिए भारत सरकार की ओर से जल शक्ति मंत्रालय की सचिव की अध्यक्षता में स्वर्णिम कमेटी का गठन किया गया है। इस कमेटी में जल शक्ति मंत्रालय के साथ ही केंद्रीय वन एवं पर्यटन मंत्रालय भारत सरकार, उम सरकार, मप्र सरकार और पना टाइगर रिजर्व के साथ प्रोजेक्ट से जुड़ी एसीआर के अधिकारी शामिल हैं। देवाशी मुखर्जी ने बैठक में भूमि के अधिग्रहण को तेजी करने पर जोर दिया। सचिव ने कहा कि डेम के निर्माण और विस्थापितों को बसाने के लिए जमीन का अधिग्रहण जल्द से जल्द पूरा करने की दिशा में है। इसके साथ ही केन नदी से केनाल नदी तक लिंक केनाल के लिए जमीन का अधिग्रहण शुरू करने के निर्देश दिए हैं। साथ ही उन्होंने कहा कि प्रोजेक्ट भारत सरकार की ओर से जल शक्ति मंत्रालय की सह-संचालन और विधानसभा चुनाव से ठीक पहले पीएमओ के निर्देश पर 5 अक्टूबर को भी इसके भूमिपूजन की सारी तैयारियां पूरी कर ली गई थीं, लेकिन अचानक

नवभारत भोपाल, दिनांक 01-02-2024

'देश भर में भूजल संरक्षण के लिए उठाए जा रहे हैं कदम'

जासं, नई दिल्ली: भूजल दोहन के विरुद्ध दायर एक आवेदन पर केंद्रीय भूजल प्राधिकरण ने नेशनल ग्रीन ट्रिब्यूनल में रिपोर्ट दाखिल कर कहा कि भूजल की गुणवत्ता बढ़ाने के साथ ही संरक्षण एवं प्रबंधन के लिए जरूरी कदम उठाए जा रहे हैं। यह भी कहा कि जल शक्ति मंत्रालय के साथ काम करते हुए व्यापक कार्य किए जा रहे हैं। सीजीडब्ल्यू ने स्थिति रिपोर्ट में यह भी कहा कि दिल्ली में भूजल के प्रबंधन व विनियमन के लिए समय-समय पर दिल्ली सरकार को जरूरी निर्देश पर एडवाइजरी जारी की जाती है। इतना ही नहीं अवैध भूजल से जुड़ी शिकायतों के तेजी से निस्तारण के संबंध में राज्य सरकारों को निर्देश दिया गया है। सीजीडब्ल्यू ने स्थिति रिपोर्ट में अपने अधिकार और शक्तियों के संबंध में भी जवाब दाखिल किया। एनजीटी ने आवेदनकर्ता वरुण के आवेदन पर सुनवाई करते हुए पिछली सुनवाई पर सीजीडब्ल्यू को भूजल संरक्षण के संबंध में उठाए गए कठमों के साथ ही अपने अधिकार के संबंध में जवाब दाखिल करने का निर्देश दिया था।

दैनिक भास्कर, भोपाल, दिनांक 01-02-2024

दैनिक जागरण, नई दिल्ली, दिनांक 05-02-2024



## Glimpses of NWDA

### I. 5<sup>th</sup> Meeting of Steering Committee of Ken Betwa Link Project (SC-KBLP)

5<sup>th</sup> meeting of the SC-KBLP was held on 19.01.2024 under the Chairpersonship of Ms. Debashree Mukharjee, Secretary (DOWR, RD&GR) at Khajuraho, MP. Meeting was attended by the Principal Secretary, WRD, MP; JS (A,IC&GW); Collector & DM of Panna and Chhatarpur with the representative from I&WRD, UP; Forest Department of UP, MP; Field Director, PTR; NITI Ayog; MOEF&CC; WII; NWDA; CWC; KBLPA.

During the meeting, Chairperson highlighted the importance of the project for Bundelkhand region and stressed for best practices in construction, safeguarding the interest of environment, biodiversity alongwith the community development. Special emphasis for timely land acquisition for Daudhan Dam and Link Canal was highlighted. Directed to timely completion of all the left out DPR's, Secretary told all the partners to work in unison to have timely and projected benefits in all quarter.



5<sup>th</sup> Meeting of Steering Committee KBLPA on 19.01.2024

Secretary (DOWR, RD&GR) also visited Panna Tiger Reserve and discussed with the Field Director. She directed to have implementation of Integrated Landscape Management Plan with the coordination of all the stakeholders and all the measures shall be taken in a timely manner.

### II. Signing of Memorandum of Understanding (MoU) on modified Parbati-Kalisindh-Chambal-ERCPC (PKC-ERCPC) Link Project amongst States of Madhya Pradesh & Rajasthan and Govt. of India

The MoU for Modified PKC-ERCPC link project was signed on 28.01.2024 by ACS, WRD, Govt. of MP; ACS, WRD, Govt. of Rajasthan and Secretary, DoWR, RD&GR, MoJS, GoI on broad planning of the PKC link duly integrated with ERCPC and preparation of its DPR. The Union Minister of MoJS, Hon'ble Chief Minister of MP and Hon'ble Chief Minister of Rajasthan graced the occasion. Shri Shriram Vedire, Chairman of the TFILR and other officials of MoJS and MP and Rajasthan were



Signing of MoU of PKC-ERCPC on 28.01.2024

present on the occasion.

The FR of PKC Link Project under NPP was prepared and circulated to the concerned State Governments in February-2004. In the year 2019, Rajasthan came up with the proposal of ERCP. With a view to utilize the water resources optimally, the integration of the PKC link of NPP with ERCP was discussed in 11<sup>th</sup> and 12<sup>th</sup> meetings of the TFILR in year 2019. Thereafter, the issue of integration of ERCP with PKC link has been deliberated regularly with States at various platforms. Looking at the importance and utility of the Modified PKC link project, SCILR, in its 20<sup>th</sup> meeting held on 13.12.2022 has approved the Modified PKC-ERCP link as the part of the NPP of ILR in the country and also declared it as one of the priority link projects in the country.

The Modified PKC Link Project will help in utilizing the available water resources of Chambal basin optimally and economically. Various components of Modified PKC link including areas of benefit shall be firmed up at DPR stage in consultation with both the States.

### III. 7<sup>th</sup> Meeting of TAG-KBLPA

The 7<sup>th</sup> meeting of TAG-KBLPA was held on 11.02.2024 at Lucknow under the Chairmanship of Shri D. P. Bhargava, former Director (Technical), NHPC, Faridabad. CE, Design (NW&S), CWC; CEO, KBLPA; and other officers of KBLPA and I&WRD, UP were present in the meeting. During the meeting deliberations were held on restoration of Ken Canal System under KBLP and on Repair / Strengthening / Remodelling of Bariyarpur PUW, Parichha weir and Barwa Sagar Dam including appurtenant structures.



7<sup>th</sup> Meeting of TAG-KBLPA held on 11.02.2024

ACEO (HQ/P), KBLPA intimated that the DPR of restoration of Ken Canal system submitted, by the I&WRD, UP was examined with reference to the suggestions made by TAG and the same was circulated to all the TAG members. CE, Designs (NW&S), CWC intimated that the detailed design of Main Canal and sample structures had not been submitted by the I&WRD, UP. Detailed discussion was held on the design issues, canal and its structures. I&WRD, UP intimated that these are simple structures and they are having dedicated design wing and submit the CDO certificate to CWC.

The TAG in its 6<sup>th</sup> meeting, considering the dilapidated condition of gates observed during the site visit, had suggested for its renovation/ modification/ replacement for Bariyarpur PUW and Parichha weir. In this regard, various alternatives have been explored and it was considered that "Top Hinged Float Gates" could be an option. The proposal of M/s Universal Hydro Structure Pvt. Ltd. to replace existing gates with the latest, state-of-the-art, unique, innovative Top Hinged Float Gates at Bariyarpur PUW and Parichha Weir was discussed. The firm gave presentation, during which various issues were discussed. It was decided to

compile all the queries and submit it to the firm and final decision on Self-Operating Top Hinged Float Gates shall be taken after the reply received from the firm.

A presentation on the design of Parichha weir was made by I&WRD, UP and it was informed that the design was carried out based on observed flow. CE, CWC said that the design is to be carried out on the basis of design flood study instead of observed flow. I&WRD, UP agreed to conduct the same in consultation with CWC.

It was desired by the Chairman that the next meeting may be convened after the clarification on various issues regarding Self-Operating Top Hinged Float Gates received.

#### **IV. 6<sup>th</sup> meeting of Ken-Betwa Link Project Authority (KBLPA)**

6<sup>th</sup> meeting of KBLPA was held under the Chairmanship of CEO, KBLPA on 27.02.2024 at Bhopal.

During the meeting current status of KBLPA and SC-KBLP was briefed by Member Secretary, KBLPA and then deliberation was done on agenda items covering status of Land Acquisition for Daudhan Dam and Transfer of Land to PTR; Status of R&R of 22 villages; Tender for Daudhan Dam; Manpower, Office planning for implementation of Unit-I of component –I ; Land Acquisition for link Canal; Preparation of Tender Document for Link Canal; Environmental Clearance of Lower Orr Dam Project; Status of hiring Project Management Consultancy (PMC) Services; Compliance to



6<sup>th</sup> Meeting of KBLPA held on 27.02.2024

Environmental, Forest, MoTA etc. clearances of projects under KBLP; Implementation of ILMP and EMP; Organization Chart of KBLPA and defining role, reporting system etc.; Financial powers of KBLPA; Reimbursement on expenditure made by MP in Phase-II; Physical and Financial Progress under Phase-II; Monitoring of Projects under KBLPA; Status of State specific projects- S&I, Preparation of DPR; Opening of SNA account; Protection of Salaries of ACEOs; Physical Model of Daudhan Dam; Engagement of Legal Advisor for KBLPA; Work Plan of 2024-25 and Opening of CWC design unit at Bhopal etc.

Important deliberations are as follows:

Member-Secretary intimated about the status of land acquisition works for Daudhan Dam. CEO, KBLPA requested Field Director, Panna, Govt. of MP to confirm the figures. Figures were confirmed by FD, Panna and he informed the final acceptance will be made after field verification. Detailed deliberation was done on land acquisition issues. Chairman suggested WRD, Govt. of MP to send weekly

report on progress of land acquisition, R&R and asked Field Director, Panna to propose suitable land for transfer to the PTR and suggested that State Forest Department and PTR shall frequently interact with each other and shall work together to meet the deadline of land acquisition.

Member-Secretary apprised that status of R&R was discussed in the 5<sup>th</sup> meeting of SC-KBLP and in the meeting held with JS, RD&PP, DoWR, RD&GR. It was informed by WRD, MP that Rs.50 Crore has been disbursed as compensation to Private Land of Chhatarpur district. CEO, KBLPA desired that the progress report on the land acquisition works shall also include details of land identified for R&R and the status of R&R.

Regarding Land Acquisition of link canal, Member-Secretary informed that the alignment passes through Chhatarpur, Tikamgarh and Niwari districts in MP and Jhansi district in UP and gave the details of land to be acquired. Various issues regarding land acquisition of link canal were discussed and CEO, KBLPA suggested that joint visit of the canal alignment may be taken up in association with KBLPA by I&WRD, UP and WRD, MP to have uniformity in alignment and to avoid any gap and submit the progress report of land acquisition works for link canal on weekly basis. Preparation of tender document for link canal was also discussed.

Regarding Environmental clearance of Lower Orr Dam project, it was decided that WRD, MP in association with NWDA and WAPCOS to take necessary action on priority with MoEF&CC and sort out the issue in the best possible way, as agreed in the 5<sup>th</sup> meeting of SC-KBLP.

ACEO (HQ/P), KBLPA intimated the Rs. 80.56 Crore has been deposited in State CAMPA towards implementation/ management of revenue / non-forest land and also informed about the physical and financial progress of project under Phase-II by the Govt. of MP. Chairman informed the members that the monitoring of projects under KBLP has to be done in line with PMKSY and asked to submit the reports and progress of works in the prescribed format by both States before release of future payment.

The status of State specific projects – Survey and Investigation, preparation of DPR were also discussed.

After this, ACEO (HQ/P) informed about the revised estimate for 2023-24 and budget estimate for 2024-25. He informed that expenditure of Rs. 563.348 Crore has been incurred till 31.01.2024 during 2023-24. Rs. 826.06 Crore released to MP in February 2024. ACEO also apprised the Authority about details of expenditure on KBLP by KBLPA, Govt. of UP & MP. Issues related to Power House – I & II and pumping station for Upper Tunnel were also discussed.

## V. 5<sup>th</sup> Meeting of the Sub-Committee for Comprehensive Evaluation and System Studies on ILR

5<sup>th</sup> meeting of the "Sub Committee for Comprehensive Evaluation and System Studies on ILR" was held under the chairmanship of Shri A.B Pandya, Secretary General, ICID on 12.03.2024 at NWDA, New Delhi in hybrid mode.

Resignation of Prof. P.P Majumdar and Shri A.C Tyagi from the membership of Sub-Committee was informed, on which Chairman, suggested to initiate the process of reconstitution after obtaining views/suitable nominations of new members.

After the discussion on minutes of previous meeting and follow up action, Chairman Sub-Committee suggested few modifications in ToRs and asked NWDA to send these modified ToRs to MoJS.

Then system studies of Godavari-Krishna, Krishna-Pennar-Cauvery and Cauvery-Vaigai-Gundar link system was discussed. Member Secretary informed about EOIs received for the study and that the financial bids have been sought from 10 institutes. Chairman, Sub-Committee told that before taking up system studies for southern linkage system scenarios of MSTG Link should be well understood. Information on surplus water available through MSTG Link is very important and has to be provided to the institutes carrying out system studies of southern linkage system. After this the progress of work done by 4 institutes on system studies of MSTG, Ganga-Damodar-Subernarekha, Subernarekh-Mahanadi and Farraka-Sunderban link projects was discussed and it was informed that all the institutes have been requested to submit the draft final report by 30.04.2024.

Further, Sh. M.K Sinha suggested that NWDA shall give a brief presentation on latest status of all link projects under NPP along with a water balance data at every stage and also suggested that after reviewing the status of link projects, Sub-Committee shall decide which link project shall be taken forward on priority basis. Chairman, Sub-Committee requested NWDA to present the status of link projects in light of latest modifications and developments.

Regarding constitution of System Study cell, Chairman asked about the working of separate System Study cell in NWDA and to create a documentation/ user manual for running the system study models for various studies being carried out under the scheme. Such a documentation and manual will have to be prepared for each of the study as there are unique features in each, which are not replicated elsewhere. The System Study cell becomes capable of handling such requirements and will have to continually update themselves about the models and will have to hand over the skills from time to time as the personnel in the cell undergo change in normal administrative course of action.



5<sup>th</sup> Meeting of Sub-Committee for Comprehensive Evaluation and System Studies on ILR held on 12.03.2024



- **Other Activities**

## I. International Women's Day 2024

The International Women's Day (IWD) is celebrated on 8<sup>th</sup> March every year. This day is devoted to celebrating the achievement of women and seeking gender equality. This year the theme was "Invest in Women: Accelerate Progress". IWD was celebrated in NWDA also on 08-03-2024 at Palika Bhawan, New Delhi, under the Chairmanship of the DG, NWDA. CE (HQ) and Dir (T) were also present during the occasion. After the address of Senior Officers, all the women employees were asked to share their experiences/issues/suggestions that are to be taken care of. Many good suggestions were emerged during the discussion. Then cake cutting took place followed by other interesting programmes.



Here, it is pertinent to inform that Smt. Vineeta Sharma, Deputy Director (H), NWDA (HQ) had been shortlisted as a second prize winner based on her submission in Online Experience Sharing Competition held by Delhi Metro Rail Corporation (DMRC). She received a Cash Award of Rs. 3000/- and Certificate of Appreciation from DMRC on 07.03.2024. Congratulations to Smt. Sharma on her achievement and making the challenge to a success.

## II. Swachhta Pakhwada 2024

Swachhata Pakhwada is being organized since April 2016 with the objective to bring a fortnight of intense focus on the issues and practices of Swachhata everywhere. Swachhata Pakhwada was observed in NWDA and all its Field Offices from 16<sup>th</sup> to 31<sup>st</sup> March 2024 and various activities were conducted in NWDA (HQ) and Field Offices.

Some of the activities carried out during Pakhwada are as follows:

- Swachhta Pledge was administered in NWDA, HQ and Field Offices on 18.03.2024
- Cleanliness drive was carried out near office premises and nearby Park by NWDA, HQ and KBLPA on 19.03.2024
- Cleaning was done at Dhigha, Janardan Ghat, Marine Drive and near the bank of Ganga river by NWDA, Patna on 20.03.2024
- Beautification/Plantation of office was also done during the Campaign on 21.03.2024
- Swachhta rallies for creating awareness were organized by NWDA, HQ and Field Offices on 22.03.2024
- A workshop was also organized in NWDA, HQ on 26.03.2024 for creating awareness on cleanliness
- Drawing competition was organised in the Primary School, Gomti Nagar, Lucknow, Uttar Pradesh by NWDA, Lucknow on 27.03.2024

## Glimpses of Swachhata Pakhwada Activities



राजविअ, मुख्यालय व क्षेत्रीय कार्यालयों में दिनांक 18.03.2024 को स्वच्छता पखवाड़ा 2024 का शुभारंभ किया गया।



दिनांक 19.03.2024 को राष्ट्रीय जल विकास अभिकरण (मुख्यालय), साकेत एवं केन बेतवा लिंक परियोजना प्राधिकरण, भोपाल द्वारा कार्यालय के आस पास तथा निकटतम पार्क की साफ-सफाई की गई जिसमें सभी अधिकारियों व कर्मचारियों ने भाग लिया।



दिनांक 20.03.2024 को राजविअ के अन्वेषण वृत् एवं अन्वेषण प्रभाग, पटना द्वारा दीघा, जनार्दन घाट, मरीन ड्राइव और गंगा नदी के किनारों की साफ-सफाई की गई।



Plantation at NWDA, HQ on 21.03.2024



दिनांक 26.03.2024 को राजविअ (मुख्यालय) में स्वच्छता से संबंधित कार्यशाला का आयोजन किया गया।

Drawing competition organised in the Primary School, Gomti Nagar, Lucknow, Uttar Pradesh by NWDA, Lucknow on 27.03.2024.

### III. World Water Day 2024

World Water Day, held on 22<sup>nd</sup> March every year since 1993, focuses on the importance of freshwater. The theme for this year is "Water for Peace".

On the occasion of the World Water Day-2024, a pledge was administered in the HQ and Field Offices of NWDA. Awareness rallies were organized on this occasion by HQ and Field Offices of NWDA as well as offices of KBLPA. Signature campaign for saving water was also carried out by Chennai and Patna Offices of NWDA.



Administration of Pledge on the occasion of World Water Day 2024



Awareness rallies by HQ, Vadodara, Kolkata offices of NWDA and Panna Office of KBLPA held on 22.03.2024



Signature campaign for saving water carried out by NWDA, Chennai and Patna on 28.03.2024

#### IV. Interaction with State Governments/Important Field Visits

- Officers of CWC and NWDA made joint visit to the major river crossings and reservoirs of S-M link led by member (RM), CWC on 07.01.2024.
- Ms. Debashree Mukherjee, Secretary, DoWR, RD&GR along with officials of NWDA and KBLPA visited Daudhan Dam site under KBLPA on 18.01.2024 at Khajuraho.
- A meeting was held with the officials of I & CAD, Govt. of Telangana and CWC on 01.02.2024 at Jal Soudha, Errum Manzil, Hyderabad to review the issue of Capacity of Water Conductor System from Sammakka Barrage, Submergence issues on river Godavari and offtake of link alignment with respect to the DPR of Godavari-Cauvery link project.
- SE, IC, Valsad along with other officials of NWDA inspected geophysical investigation works being carried out for DVG link project by CWPRS, Pune on 03.02.2024.
- Members of TAG-KBLPA along with the officials of NWDA/KBLPA visited the Top Hinge Gate installed over Ramial river, Kamakhya Nagar, Dhenkanal, Odisha on 10.02.2024.
- DG, NWDA held discussion with Additional Chief Secretary and his team in WRD, Maharashtra at Mumbai on 06.03.2024 in connection with peninsular as well as intra-state links in Maharashtra.
- The technical team of ID, NWDA, Bhubaneswar visited the proposed M-G link (Reach-I) to check the accuracy of levelling and determine the closing error with respect to the permissible limit in connection to the ongoing survey from 05.03.2024 to 08.03.2024 and again visited from 16.03.2024 to 19.03.2024 to inspect ongoing topographic & hydrographic survey work and to discuss the subject matter with DFO, Mahanadi wildlife Division, Nayagarh for obtaining necessary permission for S&I work in forest area. The team also visited site of Reach-II of M-G link from 21.03.2024 to 24.03.2024.
- Senior officials of NWDA visited the Kosi river drilling site under Kosi-Mechi Intra-State Link Project of Bihar on 16.03.2024



Geophysical investigations of DVG Link Project by CWPRS scientists at Nilamatti dam site in Damanganga basin on 30.01.2024



Ms. Debashree Mukherjee, Secretary, DoWR, RD&GR along with officials of NWDA and KBLPA visited Daudhan Dam site under KBLPA on 18.01.2024 at Khajuraho

## Appointments, Promotions and Retirements of NWDA Officials

During the reporting period starting from 1<sup>st</sup> January 2024 to 31<sup>st</sup> March 2024:

### Appointments:

Sl. No.	Name & Designation	Deputation/Direct Recruitment (DR)	Place of Posting
1.	Shri Ajay Kumar Barnwal Administrative Officer	Deputation w.e.f. 25.01.2024	NWDA (HQ), New Delhi
2.	Shri Rahul Dwivedi Director (Admn.)	Deputation w.e.f. 01.02.2024	NWDA (HQ), New Delhi

### Promotions:

Sl. No.	Name & Designation	Post and Date of Promotion	Place of Posting on Promotion
1.	Smt. Vineeta Sharma AD(H)	Dy. Director (Hydro.) w.e.f. 01.01.2024	HQ, NWDA, New Delhi
2.	Shri Ram Kishan, Assistant Engineer	Asstt. Ex. Engineer w.e.f. 01.01.2024	KBLPA/NWDA Bhopal
3.	Shri J.D. Pande, Assistant Director	Deputy Director w.e.f. 01.01.2024	NWDA (HQ), New Delhi
4.	Shri T. Mahendran Assistant Engineer	Asstt. Ex. Engineer w.e.f. 01.01.2024	ID, NWDA, Nagpur
5.	Shri R.R. Hedao, AEE	Executive Engineer w.e.f. 01.01.2024	KBLPA/NWDA Bhopal
6.	Smt. Deepika Sharma Assistant Director	Dy. Director w.e.f. 01.01.2024	CE(North), Lucknow
7.	Shri S.P. Tomar , Assistant Engineer	Assistant Director w.e.f. 01.01.2024	HQ, NWDA, New Delhi
8.	Shri R.S. Lal, Programme Assistant	Assistant Director (H) w.e.f. 01.01.2024	HQ, NWDA, New Delhi
9.	Smt. Reeta Kashyap Steno. Gr.I	Private Secretary w.e.f. 01.01.2024	HQ, NWDA, New Delhi
10.	Smt. Indu Jaiswal, Assistant Engineer	Assistant Director w.e.f. 01.01.2024	HQ, NWDA, New Delhi
11.	Shri G. Narasimha Rao, Head Clerk	Superintendent Gr.II w.e.f. 01.01.2024	ID, NWDA, Hyderabad
12.	Smt. S. Durgabai, Head Clerk	Superintendent Gr.II w.e.f. 01.01.2024	ID, NWDA, Chennai
13.	Shri R. Pandurangan, UDC	Head Clerk w.e.f. 01.01.2024	ID, NWDA, Chennai
14.	Smt. Kalpana Ashok Kumar Parmar, UDC	Head Clerk w.e.f. 01.01.2024	ID, NWDA, Valsad
15.	Shri Rajeev Kanaujia Assistant Engineer	Asstt. Ex. Engineer w.e.f. 01.01.2024	IC, NWDA, Patna
16.	Shri Biswajit Mohanty Assistant Engineer	Asstt. Ex. Engineer w.e.f. 01.01.2024	IC, NWDA, Bhubaneswar
17.	Shri Promod Kumar Roy, Assistant Engineer	Asstt. Ex. Engineer w.e.f. 01.01.2024	ID, NWDA, Gwalior

Sl. No.	Name & Designation	Post and Date of Promotion	Place of Posting on Promotion
18.	Shri M. Kondanda Ram, Assistant Engineer	Asstt. Ex. Engineer w.e.f. 01.01.2024	IC, NWDA, Hyderabad
19.	Shri K.H. Ur. Rehman Assistant Engineer	Asstt. Ex. Engineer w.e.f. 01.01.2024	ISD, NWDA, Jaipur
20.	Shri S.C. Parui Assistant Engineer	Asstt. Ex. Engineer w.e.f. 01.01.2024	IC, NWDA, Bhubaneswar
21.	Shri K.S. Naidu, AEE	Executive Engineer w.e.f. 01.01.2024	ID, NWDA, Nasik
22.	Shri Sharanappa B. Mundaragi, AEE	Executive Engineer w.e.f. 01.01.2024	ID, NWDA, Chennai
23.	Shri M.P. Krishnamurthy, AEE	Executive Engineer w.e.f. 01.01.2024	ID, NWDA, Bengaluru
24.	Smt. Jaswinder Kaur, Assistant Director	Deputy Director w.e.f. 01.01.2024	NWDA (HQ), New Delhi
25.	Shri B.K. Singh, AEE	Deputy Director w.e.f. 01.01.2024	ID, NWDA, Bhubaneswar
26.	Shri Aheesh Kumar, Junior Engineer	Assistant Engineer 01.01.2024	CE(North), Lucknow
27.	Shri S. James, AEE	Executive Engineer w.e.f. 08.01.2024	NWDA (HQ), New Delhi
28.	Shri Ishwar Lal Maurya Draftsman-III	Draftsman-II w.e.f. 01.02.2024	NWDA (HQ), New Delhi

### Retirements/Resignation/Repatriation:

Sl. No.	Name & Designation	Date of Retirement/ Repatriation
1.	Shri N. C. Ashra, D'Man Gr.II, ID, NWDA Valsad	31.01.2024 <b>(Retired)</b>
2.	Shri R. Prakash Babu, Head Clerk, ID, NWDA, Hyderabad	31.01.2024 <b>(Retired)</b>
3.	Shri S.K. Champati, MTS, ID, NWDA, Bhubaneswar	31.01.2024 <b>(Retired)</b>
4.	Shri Ch. Y. Subrahmanyam, SE, IC, NWDA, Valsad	31.01.2024 <b>(Retired)</b>
5.	Shri A. Rajeshwara Rao, EE, ID, NWDA, Bengaluru	31.01.2024 <b>(Retired)</b>
6.	Shri R. Balakrishnan, EE, ID, NWDA, Chennai.	31.01.2024 <b>(Retired)</b>
7.	Shri G. Narshima Rao, Superintendent Gr.II	31.01.2024 <b>(Voluntary Retirement)</b>
8.	Shri S. James, Dy. Director, NWDA (HQ), New Delhi	29.02.2024 <b>(Retired)</b>
9.	Shri K.R. Patel, AEE, ID, NWDA, Valsad	29.02.2024 <b>(Retired)</b>
10.	Shri Krishna Kumari Mohanty , D'Man Gr.II, ID, NWDA, Bengaluru	29.02.2024 <b>(Retired)</b>
11.	Shri P.K. Acharya, MTS, ID, NWDA, Bhubaneswar	29.02.2024 <b>(Retired)</b>
12.	Shri Krishna Paresh Desai, Head Clerk, IC, NWDA, Valsad	29.02.2024 <b>(Retired)</b>

Sl. No.	Name & Designation	Date of Retirement/ Repatriation
13.	Smt. Sandhya Kulkarni, D'Man Gr. II, ID, NWDA, Bengaluru	31.03.2024 <b>(Retired)</b>
14.	Shri S.N. Gauda, MTS, IC, NWDA, Bhubaneswar	31.03.2024 <b>(Retired)</b>
15.	Shri G. Rajanna, MTS, ID. NWDA. Bengaluru	31.03.2024 <b>(Retired)</b>
16.	Shri Yogesh Kumar Jayantilal Vyas, D'Man Gr.II, ID, NWDA, Vadodara	31.03.2024 <b>(Retired)</b>
17.	Shri Rajpal Arora, Steno.Gr.I, NWDA, New Delhi	31.03.2024 <b>(Retired)</b>

## Participation of NWDA Officials in Trainings/ Seminars/ Conferences

Details of events in which NWDA officials participated are as per the list shown:

Sl. No.	Trainings/ Seminars/ Workshops/ Conferences etc.	Period	Venue	Officials who attended
1.	Invitation for the Final Workshop of Morphological Studies of Kosi, Bagmati, and Yamuna Rivers using Remote Sensing Techniques	15.01.24	IIT Delhi	Shri Bhopal Singh, DG, NWDA
2.	International Conference-Future of Water Resources	18.01.24 to 20.01.24	IIT Roorkee	Shri Shajatnan K.H., Director (Tech.), NWDA attended on 19.01.24
3.	Invitation: CEEW - IWMI Launch of National Report under NPS initiative on Evaluating Policy Coherence in the Food, Land, and Water Systems: Evidence from India	23.01.24	Tamarind Hall, India Habitat Centre, Delhi	Dr. Dilip Kumar, Director (MDU), NWDA
4.	UKPSC Workshop	05.02.24 to 09.02.24	Haridwar	Dr. Dilip Kumar, Director (MDU), NWDA
5.	Water Laws and River Valley Disputes	05.02.24 to 09.02.24	NWA, CWC, Pune	Shri K.S. Naidu, EE, ID, NWDA, Nashik
6.	International Water Conclave 2024	09.02.24 to 10.02.24	Shillong, Meghalaya	Shri Shajatnan K.H., Director (Tech.), NWDA
7.	Water EX world Conference, 2024	06.03.24	Bombay Exhibition Centre, Mumbai	Shri K.S. Naidu, EE, ID, NWDA, Nashik
8.	National Workshop on Dam, Repair & Rehabilitation — Deciding, Design & Safety Criteria	29.02.24 to 01.03.24	CBIP Conference Hall, New Delhi	Shri Baleshwar Thakur, Chief Engineer (HQ), NWDA
9.	Tools and Techniques for Hydrological Investigations	11.03.24 to 15.03.24	NIH Roorkee	Shri Shubham Kumar, JE, O/o CE(N), NWDA, Lucknow
10.	Hydrological Applications of Microwave Remote Sensing	18.03.24 to 22.03.24	NHP at NWA, Pune	1 . Shri Krishna Gurjar, JE, SE(S), NWDA, New Delhi 2. Smt. Gopika Balgopal PC, JE, ID, NWDA, Bengaluru



## हिन्दी के बढ़ते कदम

जनवरी से मार्च 2024 के दौरान आयोजित गतिविधियां इस प्रकार हैं:

- दिनांक 21.03.2024 को राजविअ, अन्वेषण प्रभाग, नागपुर में हिंदी कार्यशाला का आयोजन किया गया और कार्यशाला के तहत परीक्षा आयोजित की गई।
- दिनांक 26.03.2024 को राजविअ मुख्यालय की राजभाषा कार्यान्वयन समिति की बैठक महानिदेशक महोदय की अध्यक्षता में ऑनलाइन माध्यम से आयोजित की गई। इस बैठक में सभी सदस्यों ने भाग लिया और हिंदी में कार्यों को और आगे कैसे बढ़ाया जाए इस पर सभी सदस्यों के साथ विचार विमर्श किया गया।
- श्री परमजीत यादव, सहायक निदेशक, कृषि मंत्रालय, नई दिल्ली ने दिनांक 27.03.2024 को राजविअ में राजभाषा नीति पर कार्यशाला में व्याख्यान दिया और कर्मचारियों को कार्यशाला के माध्यम से व्यावहारिक प्रशिक्षण दिया। व्यावहारिक प्रशिक्षण के बाद सभी प्रतिभागियों में लिखित परीक्षा ली गई जिसमें उत्तीर्ण प्रतिभागियों को पुरस्कृत किया गया।



दिनांक 21.03.2024 को राजविअ, अन्वेषण प्रभाग, नागपुर में हिंदी कार्यशाला



दिनांक 27.03.2024 को राजविअ, दिल्ली में राजभाषा नीति पर कार्यशाला

## Family Corner

### Bengaluru Water Crises! Alarm to other cities too

\*Vineeta Sharma

Bengaluru is facing one of its worst water crises in decades. Residents are struggling to get water for their basic needs, parents want the schools to declare holidays, techies are demanding work from home, and some are even mulling moving to their native places till the crisis abates.

The city is reliant primarily on water sourced from the Cauvery River and groundwater, supplemented by recycled water from sewage treatment plants for non-potable uses. Now

its resources severely depleted due to a prolonged absence of rainfall. Of the nearly 13,900 borewells in Bengaluru, nearly 7,000 have dried up. As around 30-40 per cent of the State's water needs are met through borewells, the areas where water sources are predominantly groundwater are the worst hit. At the core of this unprecedented water crisis in Bengaluru is the over-exploitation



Once a city of lakes now facing severe water crises

of groundwater. According to the Central government's groundwater assessment 2023, all groundwater units in Bengaluru (Urban) and Bengaluru (Rural) are over-exploited. The theme of World Water Day 2022 was 'Groundwater: Making the Invisible Visible'. The city is witness to the havoc that can be caused by the mismanagement of this invisible but precious natural resource. Bengaluru Water Supply and Sewerage Board has now mandated online approvals before digging any borewell and prohibited the use of potable water for non-essential purposes. However, such steps should not be limited to the times when "such extremities hit us."

"India is one of the most borewell-intensive countries in the world," said Arun Krishnamurthy of Environmentalist Foundation of India, a Tamil Nadu-based organisation. As per new statistics, India has around 40 million borewells and open wells and 250-260 cubic-km of groundwater is drawn every year, which is more than the USA and China combined. Groundwater provides 80 per cent of country's drinking water and fulfils two-thirds of irrigation needs. "Water usage in India is not regulated.

\*Deputy Director (H), NWDA, Saket, New Delhi

We are all the time tapping into freshwater resources, especially groundwater. There is no proper mechanism of water reuse. In Bengaluru, the reserves have gone so low that a situation of ground zero has now emerged," observed Krishnamurthy.

S. Vishwanath, a water warrior from Bengaluru said, "The ongoing water crisis in Bengaluru is out and out a groundwater crisis. The borewells and lakes in Bengaluru have dried up. No doubt the situation is exacerbated by insufficient rainfall last year, but the proliferation of unscientifically drilled borewells is the main cause of this situation."

This year, climate change is already showing us a glimpse of what the future holds not only for Bengaluru but other cities too. Bengaluru's water crisis is, of course, a climate crisis, but it is also a crisis of profound local mismanagement. We have destroyed our lakes and wetlands, lavished scarce water on manicured lawns and swimming pools, refused to reuse grey water, and paid lip service to the Govt rule on rain water harvesting.

Another Expert says Bengaluru has forgotten its history, and broken its concept to live within its means — its ecological means. She told in her research which is based on ancient stone inscriptions, oral histories, archives, maps and satellite images ; shows how early residents systematically transformed this dry and barren region into a richly productive landscape with lakes and trees over several centuries. Then, in just a few decades, we decimated centuries of effort by flooding the city with concrete. She added several hundred years ago, the Bengaluru plateau was semi-arid, with sparse rainfall. As new settlers moved in, they created keres, irrigation tanks which have now become urban lakes. The Cholas were especially fond of constructing keres, giving them the appellation 'samudra' or 'sandra', meaning a large body of water. These settlers didn't just create lakes, they engineered landscapes. The wetlands upstream of the lake cleaned up the incoming water, recharging the ground. Large open wells surrounded lakes, providing a plentiful supply of water even in dry summer months. Lakes were connected across a topographical gradient, and excess water flowed through the kaluves (which we now call 'drains') from higher to lower lakes. When lakes overflowed, the village rejoiced with a festival, celebrating Duggamma, Goddess of the lake. From Kempegowda and his descendants to the Mysore kings and even the British, each new community and ruler expanded the city by creating new keres. This continued until 1892 when the last of these — Sankey tank — was built. Then, drunk on technological prowess, the city decided to stop relying on local water, and to import water from the Arkavathy basin. Until then, residents worshipped the lake Goddess Duggamma, and assiduously maintained the wells, wetlands, grassy greens and orchards that surrounded the lake. But once we got used to water coming from a pipe, we started to destroy our lakes, calling them cesspools of malaria and filth, filling them in to build malls, bus stands and housing complexes.

Social media and newspapers are now filled with alarm about water scarcity. Need of the hour is to break the cycle of alarm, and look at what we can actually do. We can't bring back Sampangi lake and Shoolay tank, neither Bengaluru can depend only on water from the distant Cauvery, especially when the city is projected to grow from 12 million to 20 million in the next few years. It is needed to return to our traditional history of ecological wisdom by protecting lakes and wetlands surrounding

the city, bringing back old traditions of prudent water usage and rain water harvesting – with a modern twist.

It is now desired to promote rainwater harvesting on large scale and to increase greywater reuse including rationing of water. Implementing rainwater harvesting structures at various scales ensures a reliable and sustainable water source for all types of buildings and can significantly reduce reliance on piped water. A decentralised system of capturing and storing rainwater may be planned, water supply can be augmented while also mitigating waterlogging in the city. Some human activities have exacerbated the water crisis, a multitude of conservation methods can be adopted such as discontinuing the use of showers for bathing and refraining from running water to clean vehicles, efficient utilization of RO reject water by storing it for alternative household purposes etc.

In addition to these solutions to addressing water shortages also include dams and reservoirs, aqueducts, desalination, cleaning and linking stormwater drains to Sewage Treatment Plants (STPs), thus enabling the reuse of treated water for various purposes. Exploration of innovative methods such as extracting moisture from the air to create drinking water can also be probed.

### Drawing Depicting Importance of Water

Here is the drawing contributed by Master Chirag Rajput on Water Conservation.



Master Chirag Rajput, Son of Smt. Radha, UDC, MDU (Unit), NWDA, New Delhi

## कविताएं

### जल की महिमा

अनुराग

जल ही जीवन, जल सा जीवन, जल्दी ही जल जाओगे,  
अगर न बची जल की बूंदें, कैसे प्यास बूझाओगे।  
नाती-पोते खड़े रहेंगे जल राशन की कतारों में,  
पानी पर से बिछेंगी लाशें, लाखों और हजारों में।

रिश्ते-नाते पीछे होंगे, जल की होगी मारामारी,  
रुपयों में भी जल न मिलेगा, जल की होगी पहरेदारी।  
हनन करेंगे शक्तिशाली, नदियों के अधिकारों का,  
सारे जल पर कब्जा होगा, बाहुबली, मक्कारों का।

मालूम हो जल के बिना, जीवन संभव ही नहीं,  
हो अगर सहमति राज्यों में, तो जल संकट नहीं।  
नदियाँ तो बहुत हैं, पर साल भर वे बहती नहीं,  
जल तो हैं, किन्तु बाँध के बिना रुकता नहीं।

बढ़े पैदावार देश में, विदेशियों पर निर्भरता नहीं,  
वृद्धि हो समृद्धि की, जनसंख्या की नहीं।  
ज्ञान रूपी नदियाँ जुड़ें, आपसी टकराव नहीं,  
जरूरत है शिष्टाचार की, भ्रष्टाचार की नहीं।

रोजगार देश में ही हो, विदेशों में नहीं,  
निर्यात हो वस्तुओं का, मानवों का नहीं।  
बनाएँ विकसित देश, पिछड़ापन रहे नहीं,  
पड़ोसियों से सम्बन्ध सुधारे, रहे दुश्मनी नहीं।

नदियाँ आपस में जुड़ने से, जल की कमी रहेगी नहीं,  
खुशहाली हो मन में, उमंग की कमी नहीं।  
अभी नदियाँ मिलती हैं नदियों से, नहरों से नहीं,  
नदियों का बहता हुआ जल, उपयोग हेतु रूकता नहीं,  
राजविअ के बिना, नदी जोड़ परियोजना संभव नहीं।।

राजविअ के अध्ययनों की, कोई मिसाल नहीं,  
वरिष्ठ अधिकारियों के बिना, यह सम्भव नहीं,  
उनके अनुभव मेहनत हमारी, के बिना मंजिल नहीं,  
राजविअ को तराशने में, उनका कोई सानी नहीं।।

नदियों को नदियों से मिलाकर,  
देश का कोई कोना सूखा, बाढ़ग्रस्त रहेगा नहीं।।

आशुलिपिक.राजविअ, नई दिल्ली

## भैया पानी नहीं ... बहाना

कार्तिक बघेल

भैया पानी नहीं बहाना,  
अब घंटे भर नहीं नहाना,  
पानी बहुत हुआ है महँगा,  
बडा कठिन है पानी लाना,  
हम सबको है बड़ा जरूरी,  
धरती का पर्यावरण बचाना,  
पानी गंदा आया नल में,  
पिया बीमार हुआ दो पल में,  
उसको उल्टी दस्त हो गए,  
हाथ पैर भी लस्त हो गए,  
पानी सदा साफ पीना है,  
स्वस्थ रहो लंबा जीना है,  
गंदा है तो रोज उबालो,  
थोड़ा जरा फिटकरी डालो।

पुत्र श्री के सी बघेल, सहायक अभियंता, अन्वेषण प्रभाग,  
वडोदरा

## जल

पूजा मीणा

हमें बचाना है, बचाना है,  
जल को दूषित होने से बचाना है  
कूड़ें कचरे को रखें नदियों से दूर  
हमें जल गंदा होने से बचाना है।

स्वच्छ नदियों को हमने इतना गंदा बना दिया  
कारखानो की गंदगी को नदियों में ले जाकर  
मिला दिया  
हे मानव, तू क्यों बन गया इतना क्रूर  
तूने क्यों पीने के पानी को ही जहर बना दिया।

जब जल ही दूषित हो जाएगा,  
तो बीमारी तो घर में आएगी  
घर-घर में मलेरिया, डेंगू का वार होगा  
फिर मनुष्य तो बीमार होगा।

जब हवाएँ ही हो जाएंगी जहरीली  
तब, बादल दूषित वर्षा बरसाएँगे  
खेतों में लहराती हरी-भरी फसलें,  
दूषित पानी से मूर्छित हो जाएंगी।

सूझ-बूझ कर जल को दूषित होने से बचाना है  
जल ही जीवन है ये सबको समझाना है  
जल से ही अमरत्व मिल जाए,  
इसे हमें सबको समझाना है।  
हमें बचाना है, बचाना है,  
जल को दूषित होने से बचाना है।

आशुलिपिक ग्रेड- 2, राजविअ, नई दिल्ली

# Activities of NWDA at a Glance



2nd Pre-Bid meeting for EPC Contract of Daudhan Dam under Ken-Betwa Link Project held on 01.02.2024 under the Chairmanship of CEO, KBLPA at Bhopal



Discussions held on 22.02.2024 with Dy.Chief Engineer North Coastal Region , WRD, Visakhapatnam, Govt. of AP in respect of proposed command areas under AP portion of MG Link reach-II at Visakhapatnam



6th meeting of KBLPA held on 27.02.2024 at Bhopal



DG, NWDA held discussion with ACS and team in WRD, Maharashtra at Mumbai on 06.03.2024 in connection with peninsular as well as intra state links in Maharashtra



Senior officials of NWDA visited the Kosi river drilling site on 16.03.2024

Jal Vikas can also be accessed at [www.nwda.gov.in](http://www.nwda.gov.in)  
राष्ट्रीय जल विकास अभिकरण, 18-20 सामुदायिक केन्द्र, साकेत  
नई दिल्ली-110017 द्वारा प्रकाशित