

**MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA  
REJUVENATION  
Achievements of four years (2014-15 to 2017-18)**

## **1. NATIONAL MISSION FOR CLEAN GANGA**

The objective of NMCG is to accomplish the mandate of National Ganga River Basin Authority of ensuring effective abatement of pollution and rejuvenation of the river Ganga by adopting a river basin approach, and to maintain minimum ecological flows in the river .Major activities under National Mission for Clean Ganga include

- A total 221 projects have been taken up under Namami Gange programme for various activities such as sewage infrastructure, ghats& crematoria, river front development, river surface cleaning, institutional development, biodiversity conservation, afforestation and rural sanitation at a total cost of Rs 22,238 crore, Out of these 221 projects, 58 projects have been completed and balance projects are at various stages of execution.

### **Sewerage Infrastructure Projects**

- 97 towns have been identified along main stem of river Ganga generating 3603 Mld (estimated for year 2035) of sewage. The existing sewage treatment capacity in these towns is 1651 Mld.
- In the first phase, 95 sewerage projects have been taken up in 61 of the 97 towns. These projects will create another 1940 Mld STP capacity at a cost of INR 14,458 Cr.
- Ten (10) major towns contribute almost 64% of present sewage generation of these 97 towns. The towns are: Haridwar, Kanpur, Allahabad, Farrukhabad, Varanasi, Patna, Bhagalpur, Kolkata, Howrah and Bally. All the requirements of sewage treatment infrastructure in these 10 towns have been fully addressed.
- Twenty Four (24) of the 95 projects undertaken have been completed, creating 186 mld STP capacity thereof, and presently in operation.
- Out of 95 Projects, Forty One(41) projects are under progress and other 30 projects are under various stages of tendering. This will create an additional sewage treatment capacity of 1754 mld.
- The projects taken up so far will take care of all the interventions required for all 5 states – Uttarakhand, Uttar Pradesh, Bihar Jharkhand and West Bengal in respect of sewage treatment requirement till year 2035 on the main stem of river Ganga.
- In addition, 10 projects have been taken up on Ganga tributaries, like Yamuna (Sonapat and Panipat in Haryana, Delhi, Mathura and Vrindavan in UP), Ramganga (Moradabad, UP), Saryu (Ayodhya, UP) and Kosi (Naugachia, Bihar). These projects are for creating 1353 Mld sewage treatment capacity at a cost of INR 3028 Cr. From these, two projects of Haryana 70 mld of new treatment capacity has been

created & operational apart from rehabilitation of another 75 mld treatment capacity.

- In the next phase, towns along major tributaries of river Ganga are being taken up. A comprehensive study is underway to identify the sewage treatment infrastructure related requirements in these towns.

### **Ghat Cleaning**

- Projects have been taken up for 24X7 cleaning of ghats at Varanasi, Bithoor, Kanpur, Allahabad, Mathura-Vrindavan and Haridwar to avoid solid waste disposal into river from ghats and also to improve public facilities and cleanliness. In consideration of the encouraging results from this project, ghat cleaning activity is being extended to ghats of other major towns along rivers Ganga and Yamuna.

### **Ghats & Crematoria**

- Development of Ghats & Crematoria works in select cities have been taken up and work on 151 Ghats and 54 Crematoria is in progress at various places and likely to be completed by March 2019. 24 ghats were completed in West Bengal from 2011 to 2014 which are under maintenance. The focus now is to complete the ghats and crematoria under construction.

### **River Surface Cleaning**

- 11 Trash Skimmers have been deployed in 11 cities i.e. Delhi, Haridwar, Mathura-Vrindavan, Garhmukteshwar, Kanpur, Allahabad, Varanasi, Patna, Sahibganj, Nabadwip and Kolkata to arrest floating material and to tackle river surface pollution.

### **Industrial Pollution Management**

- 952 Grossly Polluting Industries (GPIs) have been identified on main stem of river Ganga after reinventorisation exercise carried out by CPCB (2017-18) wherein permanently closed GPIs have been removed and new industries have been added in the list.
- Surprise inspection of GPIs (as on 15<sup>th</sup> June 2018), 253 are non-complying, 180 have been issued closure directions and 73 have been issued show cause notices.
- A preliminary estimate suggests a significant reduction of BOD discharge from 132 TPD in 2012-13 to 67 TPD in 2017 from industrial sources (~49 % reduction).
- As on 02.07.2018, 764 industries have been connected to CPCB server and directions have been issued to remaining GPIs for installation and connectivity to CPCB server.
- 12 Technical Institutes engaged for surprise inspections of 952 Grossly Polluting Industries w.e.f 2<sup>nd</sup> April 2018. As on 16<sup>th</sup> July, 2018, inspection of 929 GPIs has been completed by the TPIs.
- Out of 929 GPIs inspected by GPIs, 318 inspections reports have been processed by SPCBs. Action has been taken by SPCBs on 29 non-complying industries (25 Show cause issued and 4 letter issued for compliance).

### **Water Quality Monitoring**

- 138 locations (20 km interval) water quality monitoring carried out.
  - 94 Manual water quality stations

- 44 Real Time Water Quality stations
- Dissolved Oxygen levels improved at 33 locations, Biological Oxygen Demand (BOD) decreased at 26 locations and coliform bacteria count decreased at 30 locations (2016 vs 2017 data).

### **Ganga Gram**

- Ministry of Drinking Water and Sanitation (MoDWS) identified 1707 Gram Panchayats situated on the bank of River Ganga in 5 State (Uttarakhand, Uttar Pradesh, Bihar, Jharkhand, and West Bengal).
- Rs. 578 Crores has been released to Ministry of Drinking Water and Sanitation (MoDWS) for construction of toilets in 1707 Gram Panchayats of 5 Ganga Basin States.
- Consortium of 7 IITs has been engaged in the preparation of Ganga River basin Plan and 65 villages have been adopted by 13 IITs to develop as model villages. UNDP has been engaged as the executing agency for rural sanitation programme and to develop Jharkhand as a model State at an estimated cost of Rs. 127 Crore.
- Gange Theme song was released widely and played on digital media to enhance the visibility of the programme. NMCG ensured presence at Social Media platforms like Facebook, Twitter, and YouTube etc.

### **Paradigm Shift in Project Implementation (HAM)**

- Prior to Namami Gange, projects used to be implemented through DBOT or EPC mode with 5 years of Operation & Maintenance. In these projects there were issues of sub-optimal design and lack of proper O&M support as there was no effective mechanism for linking the payment of O&M with the STP performance.
- To address these issues for the first time in India infrastructure projects for pollution abatement have been undertaken through Hybrid Annuity based Public Private Partnership (PPP) mode with 100% Central Government funding so as to ensure ownership and distinct accountability for continuous acceptable performance in long term.
- Under Hybrid Annuity Model (HAM), 40% of the capital cost is paid during construction period and balance 60% is paid as quarterly annuity, over a period of 15 years linked with STP performance. In addition, O&M cost is also paid for 15 years.
- Under HAM, 3 projects namely (i) 50 MLD STP at Varanasi, (ii) 82 MLD at Haridwar and (iii) 67.5 MLD at Mathura have been awarded and work has commenced.
- The second set of 11 STP projects are approved to be taken up under Hybrid Annuity Model:
  - 6 projects in UP namely, Naini, Jhusi, Phaphamau for 72.0 MLD, and STPs at Unnao, Shuklaganj, UP for 19 MLD; Farrukhabad for 35 MLD, Mirzapur for 17 MLD and Gazipur for 21 MLD.
  - 3 projects in Bihar, namely STPs at Digha and Kankarbagh at Patna, 150.0 MLD; and 65 MLD for Bhagalpur, Bihar.

- 7 projects in West Bengal in Kolkata for 128 MLD, Howrah for a capacity of 91.1 MLD, Bally for 40 MLD, Kamarhati & Baranagar for 60 MLD, Hoogly-Chinsurah for 29.3 MLD and Maheshtala for 28.3 MLD.

### **Clean Ganga Fund**

- Establishment of Clean Ganga Fund (CGF) as a trust under the Indian Trusts Act was approved by the Union Cabinet on 24 September 2014. CGF was established on 21st January 2015 as a Trust under Indian Trusts Act, 1882.
- The salient features of CGF are as follows:
  - Contribution to CGF is eligible for 100% income tax exemption under Section 80 G (1) (i) of the Income Tax Act, 1961.
  - CGF is administered by a Trust chaired by the Hon'ble Finance Minister and including up to 8 members from different fields, including NRIs, nominated by the Government.

### **State - wise / Work - wise details**

<b>National Mission for Clean Ganga</b>				
State	Target Group	Achievement (Since May 2014 to June 2018)		Before 2014
Uttarakhand	General Public	STP Capacity to be created in MLD	156	23.90
		Sanction Amount (Rs in Crores)	894.94	129.56
		Ghats & Crematoria (No)	44	0
		Sanction Amount (Rs in Crores)	175.08	0
Uttar Pradesh	General Public	STP Capacity to be created in MLD	899	187.0
		Sanction Amount (Rs in Crores)	5242.97	1295.63
		Ghats & Crematoria (No)	113	0
		Sanction Amount (Rs in Crores)	397.70	0
Bihar	General Public	STP Capacity to be created in MLD	538	16

		Sanction Amount (Rs in Crores)	4554.18	74.95
		Ghats & Crematoria (No)	15	0
		Sanction Amount (Rs in Crores)	40.86	0
Jharkhand	General Public	STP Capacity to be created in MLD	16	12
		Sanction Amount (Rs in Crores)	50.23	99.36
		Ghats & Crematoria (No)	14	0
		Sanction Amount (Rs in Crores)	62.07	0
West Bengal	General Public	STP Capacity to be created in MLD	496.5	76.23
		Sanction Amount (Rs in Crores)	1518.33	729.82
		Ghats & Crematoria (No)	19	24
		Sanction Amount (Rs in Crores)	44.24	204.39

A comparison of the work done before 2014 and from 2014-18 is given in the table below

	Before 2014	May 2014-March 18
<b>No of Projects</b>	Only 54 projects costing Rs 4495.71 crore sanctioned for sewage infrastructure, Ghats& Crematoria and River Front Development works only.	Since May 2014, a) 72 Sewerage Projects of Rs 12605 crores are sanctioned b) 37 Ghats & Crematoria projects of Rs 1216.41 crores are sanctioned c) 1 Ghats cleaning projects of Rs 15 crores is sanctioned d) 1 river surface cleaning project of Rs 55.24 crores is sanctioned.
<b>Sewage Treatment Capacity</b>	Projects for treating only 1410mld capacity of sewage sanctioned at a cost of Rs4020.77crores.	Sewerage Infrastructure projects for treating 1788 MLD sanctioned for Rs. 12605crores.

<b>Provision for O&amp;M</b>	Till May 2014, Sewage Infrastructure projects sanctioned without any maintenance & operation resulting in sub-optimal performance.	Now Sewerage Infrastructure projects are sanctioned with 15 year O&M under Hybrid Annuity Mode.
<b>Funding</b>	Earlier project sanctioned with 85:15 ratio between Centre and State.	<p>i. 100% centrally funded</p> <p>ii. For the first time, works on two STP projects in Varanasi and Haridwar) have been started under <b>Hybrid Annuity PPP mode</b> . Other projects sanctioned under HAM are Naini, Jhusi, Phaphamau, Unnao, Shuklaganj and Farrukhabad in Uttar Pradesh, Digha, Kankarbagh and Bhagalpur in Bihar, Howrah, Bally and Tolly's Nallah in Kolkata.</p>
<b>Trash Skimmers</b>	-	Trash Skimmers have been deployed in 9 towns i.e. Haridwar, Garhmukteshwar, Kanpur, Allahabad, Varanasi, Patna, Sahibganj, Nabadwip and Kolkata to arrest floating material and to tackle river surface pollution.
<b>Polluting Industries</b>	-	938 Grossly Polluting Industries (GPIs) have been identified on main stem of river Ganga after re-inventorization exercise carried out during 2017-18 by removing permanently closed GPIs and adding new ones.

		Out of 538 non-complying, 358 have been issued closure directions and 180 have been issued show-cause notice.
<b>In situ drain treatment</b>	Only one in-situ drain treatment project was sanctioned.	For in situ drain treatment six projects have been approved one each at Bakarganj drain, Patna; Danapur drain, Patna, Rajapur drain, Patna; Dighaghat drain, Patna; Nehru drain, Allahabad and Laksar drain, Haridwar. Out of which demonstration project on Bakarganj drain, Patna has been completed
<b>Ghats &amp; Crematoria</b>	Only 24 Ghats / Crematoria were created in West Bengal only.	Development of Ghats & Crematoria works in select cities have been taken up and work on 152 Ghats and 54 Crematoria is in progress at various places and likely to be completed by December 2018.
<b>Average Spending</b>	Out of the total fund allocated only Rs. 454.89 Crore could be spent at a rate of approximately Rs 91 Crore per annum	Out of the total fund allocated, Rs. 3,461.51 Crore has been spent with an average of Rs. 865.38 crore per annum.

## 2. PRADHAN MANTRI KRISHI SINCHAYEE YOJANA (PMKSY)

This scheme has been formulated amalgamating ongoing schemes viz. Accelerated Irrigation Benefit Programme (AIBP) of the Ministry of Water Resources, River Development & Ganga Rejuvenation (MoWR, RD&GR), Integrated Watershed Management Programme (IWMP) of Department of Land Resources (DoLR) and the On Farm Water Management (OFWM) of Department of Agriculture and Cooperation (DAC).

- The Government, on 27.07.2016, approved establishment of a mission for implementation of 99 ongoing AIBP ( Accelerated Irrigation Benefit Projects) projects on a priority basis under PMKSY, along with their Command Area

Development & Water Management (CADWM) work having potential of 76.03 lakh ha. and estimated cost of Rs. 77595 cr. 145 Districts of the country would directly be benefitted from this. The projects have been identified in consultation with states and are to be completed in phases up to December, 2019. Funding mechanism through NABARD has been made by the Government for both central and state share for timely completion of 99 prioritized projects.

- Long Term Irrigation Fund (LTIF) has been arranged through NABARD on 27.7.2016 for smooth funding by the Centre to the State for the 99 AIBP Projects.
- Similarly, under this scheme, State Govt. can also borrow funds from NABARD for their share at more concessional rates. Total of Rs 9185 Crore has been released through this mechanism in FY 16-17 including that for Polavaram project.
- *The above is a new initiative by present Government for smooth and enhanced Central Assistance and also attractive funding by State Governments to the projects.*
- During 2017-18, an amount of Rs. 11352 cr has been released under LTIF by NABARD for 99 priority projects and Polavaram Project.
- AIBP works of 18 prioritized projects having total potential of 3.68 Lakh Ha. completed by June, 2017.
- 22 projects of Maharashtra, 6 projects of Odisha, 17 projects (including phases) of Madhya Pradesh (45 in all) have been put on fast track and likely to be completed in advance of the scheduled time.
- Cropped area during 2016 and 2017 in the completed portion of command of these 99 projects assessed through remote sensing to be 32.5 L Ha. and 40.6 L Ha. respectively.

**Funds released for AIBP component during 2016-2017 & 2017-18  
(upto 31.3.2018):**

Sr. No.	Item	Funds Released (Rs. In cr.)	
		2016-17	2017-18
1.	AIBP (C.A.)	3308	3593.6
2.	Polavaram Project	2514	2000
3	State Share from LTIF	3334	4717.3



### **3. PANCHESHWAR MULTIPURPOSE PROJECT**

- **This is a new initiative of the present Government**
- As a result of PM's initiative, Pancheshwar Development Authority (PDA) has been set up jointly by India and Nepal in 2014 for execution, operation and maintenance of the Pancheshwar Multipurpose Project on river Sharda. The draft final DPR of the project has been submitted to both governments in November, 2016.
- The project will generate 5040 MW of power and create an irrigation potential of 4.3 lakh hectares (2.6 lakh ha in India and 1.7 lakh ha in Nepal).
- MoWR, RD&GR and Ministry of Energy (MoEn), Government of Nepal, after appraisal of the draft DPR, submitted their consolidated observations/suggestions on the draft final DPR, to PDA in March 2017 and May 2017 respectively. The observations were thereafter compiled by the Executive Committee of PDA and circulated to both the Governments in the form of a "Synthesized Document".
- On the direction of the Governing Body of PDA, a Joint Team of Experts/Officials/ (ToE) was also constituted by both the countries to discuss and resolve the observations/ comments on DPR including issues raised by Nepal on the interpretation of Mahakali Treaty, sharing of the Mahakali waters and assessment of project benefits in order to finalize the DPR. Two meetings of ToE have been held so far, first meeting on 21-23 August 2017 at Kathmandu and second meeting on 5-6 September 2017 at New Delhi to resolve the aforesaid issues and finalize the DPR.
- Appraisal of the Environmental Impact Assessment Report of Pancheshwar Project was held at MoEF& CC on 24.10.2017
- Sub-Committee of EAC of MoEF& CC visited the site on 23<sup>rd</sup> and 24<sup>th</sup> Nov, 2017
- Environmental, Forest and Wildlife Clearance for Pancheshwar Project is in Progress.

### **4. COMPLETION OF BALANCE WORKS OF NORTH KOEL RESERVOIR PROJECT, BIHAR AND JHARKHAND**

- **New Initiative of Present Government.**
- The Ministry of Water Resources, RD & GR has taken up the long pending project for completion of balance works of North Koel Reservoir Project, Bihar and Jharkhand.
- The construction was originally started in the year 1972 The work on dam is at a standstill since 1993 due to objection of Forest Department, Govt. of Bihar. The Union Cabinet has approved the proposal at an estimated cost of Rs

1622.27 crore during three financial years from the start of the project. The Cabinet also approved execution of balance works of the project on turnkey basis by M/s WAPCOS Ltd., a CPSU under MoWR, RD & GR as Project Management Consultant (PMC). The work is to be completed in 30 months from the start of works.

- M/s WAPCOS Ltd has awarded the tender for execution of balance works on the dam and barrage. Survey works of Main canals, distributaries and minors completed. Works on the barrage has been started.
- During 2017-18, an amount of Rs. 8.05 crore has been released to M/s WAPCOS Ltd by NABAR under Long Term Irrigation Fund(LTIF).

## 5. POLAVARAM MULTIPURPOSE PROJECT ON RIVER GODAVARI

- Polavaram Project (AP) – to irrigate 2.9 Lakh ha. & generate 960 MW of power, put on a fast track.
- An expenditure of Rs 5135.87 crore has been incurred upto 31.03.2014 including Central Assistance of Rs 562.469 crore provided under AIBP
- Since May 2014, an amount of Rs. 4343.52 Crores has been released to State Government of Andhra Pradesh for early completion of Polavaram Irrigation Project, a multi-purpose project on the river Godavari.
- The Govt in September 2014 agreed to provide 100% of the remaining cost of the irrigation component of the project for the period starting from 01.04.2014. The Government of India has also agreed for the execution of the project by the State Government on behalf of the Government of India.

## 6. INTERLINKING OF RIVERS (ILRS)

The Inter-Linking of River (ILR) programme has been taken up on high priority. The Government is pursuing the Interlinking of Rivers program in a consultative manner.

- Four priority links under Peninsular Rivers Component have been identified for preparation of Detailed Project Reports (DPR) viz; Ken-Betwa link project (KBLP), Damanganga-Pinjal link project, Par-Tapi-Narmada link project and Mahanadi-Godavari link project.
- **Ken-Betwa Link Project (KBLP)** is likely to be rolled out in 2018.
- The Ken-Betwa Project will benefit large number of people/farmers resulting in additional irrigation benefits of about 8.98 lakh hectares annually.
- Benefits shall accrue in drought prone Bundelkhand region of Madhya Pradesh & Uttar Pradesh and other places covering the districts of Chhattarpur (MP), Tikamgarh (MP), Panna (MP), Shivpuri (MP), Mahoba (UP), Banda (UP) Jhansi (UP), Lalitpur (UP), Datia(MP), Sagar(MP) and Vidisha(MP).
- The project will also provide drinking water to about 15 lakh people and generate 78 MW of hydropower.
- Hon'ble Minister(WR,RD&GR) convened a meeting of representatives of Govt of UP and MP and reviewed the status of the project on 16.01.2018 and sorted out various issues.

- Hon'ble Minister held a meeting on 13.02.2018 with Hon'ble Chief Minister of Madhya Pradesh for implementation of the project.
- Combined DPR merging Phase-I &II together is under preparation.
- Draft MoA for Implementation of KBLP is under final stage.
- **Damanganga –Pinjal** project in Gujarat/ Maharashtra will provide 895 million cubic meters(including 316 MCM from Pinjal dam) of water annually to augment the drinking water supply of Mumbai alongwith 5 megawatt of hydro power.
- **Par-Tapi-Narmada** project in Gujarat/ Maharashtra will provide irrigation to a total area of 2.32 lakh hectare annually which includes 1.57 lakh hectare in tribal areas, provide drinking water to 27.5 lakh population in Valsad, Navsari, Dang, Tapi, Bharuch, Vadodra and Narmada Districts of Gujarat and fill up 2226 village tanks. The project also proposes to generate 22 MW hydro power.
- Combined draft MoA for Implementation of Damanganga-Pinal and Par-Tapi-Narmada link projects sent to Govt of Gujarat and Maharashtra which is under final stage.

## 7. NATIONAL HYDROLOGY PROJECT

- This is a new initiative of the present Government.
- National Hydrology Project (NHP) was approved by the cabinet in 2016 as a central sector scheme with a total outlay of Rs.3679.7674 crore [Rs.3,640 crore for National Hydrology Project (NHP) and Rs.39.7674 crore for establishment of National Water informatics Centre (NWIC) as a repository of nation-wide water resources data].
- NHP is a Central Sector Scheme, with 100% grant to the States with World Bank Assistance to the tune of 50% of the project cost. It has pan India coverage with 49 Implementing Agencies (IAs) (including 10 from Central Government and 39 from States). The project has a total duration of 8 years from 2016-17 to 2023-24.
- The project objective of NHP is to improve the extent, quality, and accessibility of water resources information, decision support system for floods and basin level resource assessment/planning and to strengthen the capacity of targeted water resources professionals and management institutions in India.
- New Initiatives under NHP include
  - i. Standardization of Real Time Data Acquisition System;
  - ii. Single window for water resources data through establishment of NWIC;
  - iii. Introduction of state Water Resources Information System(WRIS) chapters;
  - iv. To improve accessibility of validated data and knowledge projects for public and decision makers;
  - v. To minimize duplicity and efforts to collect spatial and temporal data;
  - vi. Integrated Water Resources Management;
  - vii. Flood forecasting & Inundation Modeling;

- The total grant released to the IAs till March 2018 is 201.98 Cr (2016-17: ₹47.84cr and 2017-18: ₹154.14cr) and the total Expenditure till date: 225.16 Cr (2016-17: ₹51.77cr and 2017-18: ₹173.39cr) including the Grant release to IAs.
- A total 109 trainings (both National & International) have been organised with a participation of 1622 participants. Regular workshop/ WB Mission are being organised for review, support & hand holding.
- In-house Management Information System (MIS) for Physical monitoring developed and being used for regular update by NPMU as well as SPMUs.
- A Technical Assistance and Management Consultancy for the project is in place since Nov, 2017
- Project Implementation Plans and Annual Work Plans for 2016-17 & 2017-18 has already been approved for all the IAs and the submission and review of the AWP 2018-19 is in progress.
- For optimisation of observation stations, the Surface and Ground Water Network for all the IAs has been finalised and the Bid documents for the installation of RTDAS is under finalization.
- 'In-house' development of Flood forecasting system (1-D models) for the flood prone area has been completed.
- Preparation of 10m DEM by Survey of India (Sol) has been completed and is ready to be used by the IAs.

## 8. GROUND WATER MANAGEMENT AND REGULATION

- A. National Aquifer Mapping And Management Programme (NAQUIM)** has been planned with an aim to enhance the capacity of states in Ground Water Management and Development.
- Under the program, 8.67 lakh Sq. Km by till the end of March 2018 against total target of about 13 lakh SQ Km till March, 2020.
  - Aquifer maps and Management plans being prepared by CGWB are shared with the State Agencies for implementation. Implementation of the management plans by the State agencies is expected to improve the groundwater situation.
  - Work done under National Aquifer Mapping Program has been utilized for following successful activities which will reduce dependence on monsoon:
    - i. Project on Tapi Mega Recharge has been initiated as an outcome of Aquifer mapping study. This project envisages to recharge ground water to the tune of 358.92 million m<sup>3</sup>/ year benefiting an area of 2.3 lakh hectare.
    - ii. Multilayered aquifers identified in intensely irrigated water stressed areas of Haryana.
    - iii. Managed Aquifer Recharge plans for Chhatarpur Basin in Delhi has been prepared.
    - iv. Govt of Kerala has initiated preparation of Panchayat Water Security Plans from NAQUIM outputs.

- v. Successful wells (18 nos) were drilled in water scarce villages in Tikamgarh district of Bundelkhand region for State PHED.
- vi. In Latur, Maharashtra, 25 wells drilled for drought mitigation in Year 2016 and handed over to state agency for water supply

**B Arsenic Mitigation Through Construction Of Wells** with state of the art techniques tapping arsenic free water, one block in Ballia district and ten blocks in Ghazipur district, U.P; one block in Buxar District, Bihar; three blocks in Sahebganj district, Jharkhand and one block in Hugli district, West Bengal have been targeted. So far 72 well have been constructed in Balia & Gazipur district, U.P , while 62 wells in Hugli district, West Bengal.

**C. Two mobile apps “Jal Sanchayan” and “Mera Bhujal”** launched in this period to facilitate and enhance citizen's knowledge for taking up water conservation ,ground water recharge and quality measures.

## **9. COMMAND AREA DEVELOPMENT (CAD SCHEMES- FUND)**

- Since May 2014, Rs. 3129.79 crores (Approx) of Central Assistance has been released to States, as against Rs. 1901 crores(Approx) were released from April 2009 to April, 2014.
- A New Incentivisation Scheme for Bridging Irrigation Gap (ISBIG) has been proposed. Meeting for Expenditure Finance Committee has been held on 27.3.2018.

## **10. RRR & SMI Schemes**

- Under the SMI scheme, the amount of Rs. 2123.9 crores (Approx) have been released as CA from 2014 -15 to 2017-18 to the states and as per the information received from State Governments, irrigation potential of 2.74 lakh hectares has been created. Total CA released to state Govt. under SMI scheme was Rs. 4637 Cr. (Approx) during the period 2012-13 to 2013-14
- Under the RRR scheme, the amount of Rs. 371.3 crores (Approx) have been released as CA from 2014 -15 to 2017-18 to the states and as per the information received from State Governments, irrigation potential of 0.78 lakh hectares has been created. Total CA released to state Govt. under RRR scheme was Rs. 78 Cr. (Approx) during the period 2012-13 to 2013-14

## **11. FLOOD MANAGEMENT PROGRAM**

- As per constitutional provisions, the subject of Flood Management including erosion control falls within the purview of the states. The flood management & anti-erosion schemes are planned, investigated and implemented by the State Governments with own resources and priority. The Union Government only renders assistance to States which is technical, advisory, catalytic and promotional in nature.

- Government of India launched a Flood Management Programme during XI Plan with an outlay of Rs. 8000 crore for providing central assistance to the State Governments for taking up works related to river management, flood control, anti-erosion, drainage development, flood proofing works, restoration of damaged flood management works and anti-sea erosion

works. The Government of India approved the continuation of “Flood Management Programme” during XII Plan (2012-17) with an outlay of Rs. 10,000.00 Crore.

- Rs. 572.85 crores (Approx) Central Assistance released to different states Since during 2012-13 & 2013-14 under Flood Management Program to states.
- Since May 2014, Central Assistance of approximately Rs. 1296.89 crores has been released for Flood Management to the States.

## **12. RIVER MANAGEMENT ACTIVITIES & WORKS RELATED TO BORDER AREAS (RMBA)**

- Rs. 25.53 crores (Approx) Central Assistance released to different states during 2012-13 & 2013-14 under this scheme.
- As against the above Rs.356.9236 crores (Approx) Central Assistance released to different states Since April, 2014 under River Management Activities & Works related to Border Areas.

## **13. FARRAKA BARRAGE PROJECT**

- Successful operation of Farakka Barrage is crucial for keeping river Bhagirathi / Hoogli live particularly in lean season and also helps in flushing the silt for proper operation of Calcutta Port besides providing for the Navigation in National Water Way.
- FBP gates are very old and they have never been replaced since commissioning of the Project since 1975.
- Before year 2014, only 6 gates of FBP were replaced.
- In the last three years, 34 old Gates of the FBP which has been crucial in smooth operation of Farraka Barrage have been replaced, out of its total 123 gates.
- Work for replacement of another 35 old gates in Phase-II has been awarded in February, 2017 and started.
- Development of Tourism potential and repair of PSC road bridge over Farakka Barrage is being taken up.
- Navigational Lock under Farakka Barrage Project has been transferred to MoS/IWAI with the approval of Hon'ble Minister (WR, RD & GR)

## **14. NATIONAL WATER MISSION**

- Water is a State subject. Governance of Water is so distributed across various Departments that there is no coordination on supply & demand side and quality

challenges. NWM was envisaged for better demand- supply management of water . It envisages preparation of State Specific Action Plan for water sector (SSAP-Water) of each State/UT aligning with the State Action Plans on Climate Change already prepared by the States/UTs. The SSAP for water sector needs to be formulated based on scientific assessment of the supply and demand side of water resources, quality challenges and vulnerability to climate change.

- NWM was conceptualized during 2011-12, but no progress was made till 2014 except administrative approval.
- Under National Water Mission, 14 State Governments- Andhra Pradesh, Arunachal Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, Uttarakhand, West Bengal, Meghalaya, Sikkim and Nagaland are being supported to formulate **State Water Budgeting for Water Security, Safety and Sustainability** as an innovative strategic intervention to check over-exploitation, water deficit and contamination by building a convergence and synergy model aimed at performance based water governance. The initiative is being expanded across all the States and UTs. It is expected that the model gets matured in 3-5 years. Like financial budget, the **water budget too is expected to be undertaken on an annual basis.**
- To support the initiative NWM has allocated Rs.50 lakhs to Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, West Bengal States and Rs.30 Lakhs to Arunachal Pradesh, Uttarakhand, Nagaland, Sikkim and Meghalaya states in a phased manner since 2015 to be released in 3 installments to complete all the 3 parts of SSAP-Water.
- Accordingly Rs.20 lakhs was released to Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, West Bengal States and Rs.12 lakhs has been released to Arunachal Pradesh, Uttarakhand, Nagaland, Sikkim and Meghalaya states as a first installment.
- Three National Level Workshops and a number of brainstorming sessions were conducted during 2017-18 to prepare templates for SSAP-Water. States are provided with SSAP-Water template in October, 2017 and requested to complete State Water Budget in the current Financial Year.
- NWM has focused on improving water use efficiency. Since May 2014, 26 Baseline Studies for improving water use efficiency for irrigation projects have been taken up in Major and Minor Irrigation projects located in six states as follows:
  - i. Assam-4 Nos
  - ii. Manipur-1 No.
  - iii. Telangana-5 No.
  - iv. Andhra Pradesh-5 Nos
  - v. Maharashtra-6 Nos
  - vi. Kerala-5 Nos
- National Water Mission has awarded a bench marking **Study to “The Energy & Resources Institute (TERI)”, New Delhi to ascertain the bench marks in water**

**use efficiency in industrial sector.** The study would focus on two industrial sectors viz. thermal power plants & textile industries in phase-I and scoping exercise, preliminary baseline assessment & comprehensive water audit in Pulp & Paper and Steel Industries in the phase-II.

## **15. DAM REHABILITATION AND IMPROVEMENT PROJECTS (DRIP):-**

- The Project has been taken up with loan assistance from the World Bank for rehabilitation and improvement of about 223 dams in seven States (namely Jharkhand, Karnataka, Kerala, Madhya Pradesh, Odisha, Tamil Nadu, and Uttarakhand) and Institutional Strengthening of Central Water Commission (CWC) and other Implementing Agencies.
- DRIP was originally planned to be implemented over a period of six-years starting from 18th April, 2012. The project has now been extended for two additional years with extended completion date to be 30<sup>th</sup> June 2020.
- **DRIP-II** -In order to cover all States of India under the umbrella of DRIP, CWC has submitted a proposal for new DRIP (DRIP-II), which is under consideration of the Ministry. So far 19 States and 2 Central Agencies have submitted the proposal.

## **16. IMPORTANT PROJECTS OF WAPCOS**

### **International Projects**

The following important projects completed successfully by WAPCOS, MoWR, RD&GR:-

- 1) Afghan-India Friendship Dam Project, Herat Province, Afghanistan
- 2) Development of Six Irrigation Schemes in Champassack Province, Lao PDR
- 3) Project Management for Augmentation of Water Supply Scheme in Dar-Es-Salaam and Chalinze, Tanzania
- 4) Stung Tasal Dam Project, Cambodia
- 5) 230kV Transmission Line Project, Cambodia
- 6) 230 kV & 115 kV Transmission Line project and its associated substations at Thabok, Nabong and Khoksa in Lao PDR.
- 7) Extension of Thabok and Nabong Substations at 230 kV Rating & Extension of one no. of 115 kV Line Bay at Thasala 115/22 kV Substation, 115 kV Single Circuit Transmission Line from Nam Gnuang (Thasla) to Laksao, 115/22 kV Substation at Laksao, in Lao PDR
- 8) Rural electrification project (Phase II) in Republic of Togo

### **National Projects**

- 1) Preparation of Feasibility Report and Detailed Project Report on Sewerage and Sewage Treatment for Bhopal City
- 2) Project Management Consultancy for Madhya Pradesh Urban Development Project, Bhopal (World Bank Funded)
- 3) Project Development and Management Consultant (PDMC) for Atal Mission for Rejuvenation and Urban Transformation including Project Management of other Notified Schemes in Project- Package-II, Madhya Pradesh



- 4) Project Development and Management Consultant (PDMC) for Atal Mission for Rejuvenation and Urban Transformation including Project Management of Haryana
- 5) Providing Third party Technical Consultancy Services for supervision of Refurbishing, Restoring and installation of radial gate parts and other appurtenant parts to its full performance for main dam of Sardar Sarovar Project along with other associated hydro mechanical works, Gujarat

## **17. MINOR IRRIGATION CENSUS**

Ministry has conducted 5th Minor Irrigation (MI) Census in order to create a sound and reliable database on ground water and surface water Minor Irrigation Schemes in the country. Ministry provides 100% financial assistance and technical guidance to States/UTs for conduct of the Census.

- Field work of 5th Minor Irrigation Census has been completed by all the 33 States/UTs which participated in the Census.
- Online web portal for data processing of 5th MI Census was developed at the central level for the first time. All the 33 States/UTs completed data entry & data validation of 5th MI Census using this online portal.
- National Level Report of 5th MI Census covering 33 States/UTs has been released on the website of the Ministry in November, 2017.
- 6th Minor Irrigation Census & Census of Water Bodies - Ministry has already initiated the process of conduct of Census of Water Bodies for the first time in convergence with 6th MI Census in order to build up a database on Water Bodies. Preparatory work like drafting of schedules, instruction manual, operational guidelines etc. has been completed and the same have been approved by the Steering Committee in January, 2018.
- All India Training Workshops for 6th MI Census & Census of Water Bodies was organized on 16th March, 2018. Representatives from most of the States/UTs attended the training workshop. This has paved the way to organize six Regional Workshops in coming two/ three month's time.

## **18. PROTECTION OF MAJULI ISLAND FROM FLOOD AND EROSION:**

- The project "Protection of Majuli island from flood and erosion" was approved by the Ministry for a value of Rs. 233.57 crores. Out of the total amount, funding of Rs 207 crores has been provided by DONER. Brahmaputra Board has awarded the work which is presently in progress. Successful conclusion of this project will provide succour to Majuli, which is the largest river island in the world, from flood and erosion.
- Hon'ble Minister has laid the foundation stone for the stated flood management and erosion protection work at Majuli on 29th December 2017
- The protection work of Majuli will be carried out in 3 (three) years by Brahmaputra Board.

## **19. UPPER YAMUNA RIVER BOARD (UYRB)**

## **Lakhwar Project**

- A Memorandum of Understanding (MoU) was signed on August 28, 2018 between Union Minister for Water Resources, River Development and Ganga Rejuvenation Shri Nitin Gadkari and Chief Minister of Uttar Pradesh Shri Yogi Adityanath, C.M. of Uttarakhand, Shri Trivendra Singh Rawat, C.M. of Delhi Shri Arvind Kejriwal, C.M. of Rajasthan Smt. Vasundhara Raje, C.M. of Himachal Pradesh Shri Jai Ram Thakur and C.M. of Haryana Shri Manohar Lal for Lakhwar Multi-Purpose project at an estimated cost of Rs. 3966.51 crore. The Lakhwar project envisages construction of a 204 m high concrete dam across river Yamuna near Lohari village in Dehradun district of Uttarakhand with a live storage capacity of 330.66 MCM. From this storage, about 33,780 hectare land will be irrigated and 78.83 MCM water will be available for domestic, drinking and industrial use. The installed power capacity of 300 MW will be generated from this project.

## **SHAHPUR KANDI DAM PROJECT**

- In a historic agreement, Jammu & Kashmir and Punjab governments signed an agreement for implementation of the Shahpur Kandi dam project, which was being delayed for several years. The agreement was signed between J&K chief secretary BVR Subrahmanyam and his Punjab counterpart Karan Avtar Singh in the presence of J&K Governor Satya Pal Malik and Punjab Water Resources Minister Sukhbinder Sarkaria. The project on River Ravi is a major irrigation project which will benefit both J&K and Punjab. J&K is entitled to 0.69 MAF of water from Ravi and it is utilizing only 0.215 MAF. The construction of 79.5 km of Ravi canal and 493 km of distribution network in J&K has been completed. The project will irrigate 32,000 hectares of agricultural land in the Kandi areas, upstream and downstream along the Jammu-Pathankot national highway in Samba and Kathua districts.

## **20. PROPOSED SCHEMES UNDER CONSIDERTION OF MINISTRY**

### **1. Atal Bhujal Yojana (ABHY)**

- National Groundwater Management Improvement Scheme (NGMIS) formulated in response to Budget announcement of 2016-17 (Para 20).
- EFC of NGMIS held on 31.05.2017. EFC recommended to recast the Scheme and come with a composite proposal with due convergence.
- Scheme recasted and renamed as Atal Bhujal Yojana.
- Scheme for sustainable Groundwater management with emphasis on demand side interventions with community participation.
- Estimated cost: Rs.6000 Cr. World Bank Assistance of Rs.3000 crore. Rs.3000 crore through budgetary support from Govt. of India.
- Duration : 5 Years( 2018-19 to 2022-23 )

- Water stressed areas in Gujarat, Maharashtra, Haryana, Karnataka, Rajasthan, Uttar Pradesh and Madhya Pradesh covering 78 districts, 193 blocks and about 8353 GPs.
- To be implemented as a Hybrid Programme for Results (PforR) scheme, wherein part of the funds would be released as 'investments' and part would be released as 'incentives'.
- Two components
  - ✓ Investment Component: for strengthening institutional arrangements by providing strong data base, scientific approach and community participation in the States to enable them in sustainable management of ground water resources; and
  - ✓ Incentive Component: for incentivizing the States for convergence amongst various schemes of the Central and State Governments and achievement of pre-defined results as a measure of ground water management.
- Will encourage behavioural changes and community engagement in ground water management at Gram Panchayat level, crucial for addressing ground water challenges in the long term.

Status: The scheme presented to EFC on 27th March, 2018 and further communication awaited.

## **2. Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)- Har Khet ko Pani (HKKP) – Ground Water**

- Scheme formulated in response to Hon'ble Prime Minister's commitment to Har Khet Ko Pani with a goal of doubling the farmer incomes by 2022.
- The scheme of PMKSY approved in 2015 envisaged ground water development through tube well/ dug well etc. to cover 2.5 lakh hectare during 2015-16 to 2019-20.
- Current proposal proposes to expand the scope of PMKSY- Har Khet Ko Pani-Ground Water to about 21.35 lakh hectare.
- 96 prioritized most 'deprived irrigation districts' in 12 states, namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Uttar Pradesh and West Bengal identified.
- In these 96 districts, irrigation facilities will be created through tube wells, dug wells, bore wells and Dug cum Bore wells. Districts are characterised by
  - Less than 30 per cent of the land holdings are under irrigation;
  - Less than 60 per cent of the annual replenishable groundwater resources have been developed i.e. there is scope for further groundwater development without endangering groundwater sustainability.
  - average annual rainfall of 750 mm and more and
  - shallow groundwater levels.
- Proposed to construct 9.49 lakh groundwater abstraction structures (dug wells/dug-cum bore wells/ tubewells/ bore wells).
- Envisages convergence with PMKSY-Watershed Component and MGNREGA for supporting water harvesting and groundwater recharge interventions for sustaining long term groundwater development.
- Following components are proposed to be funded:

- Construction cost of well with material
- Cost of Pump (Solar/ Electric/ Diesel)
- Cost of 200 m canvas pipe for water distribution
- Cost of investigation for site selection.
- Cost of the Scheme- Rs. 39476.33 crore. Central State share : 90:10 for Assam & 60:40 for other States. Central share is Rs.25391.48 crore and state share is Rs.14084.85 crore.
- Status : Draft EFC has been uploaded on site of Ministry of Finance in First week of March 2018 for circulation and comments.

### **3. . Proposal for Diversion of Godavari waters upto Cauvery basin:**

- As per the planning of the Peninsular Component of the National Perspective Plan (NPP) about 20,796 MCM of water from Mahanadi and Godavari rivers is to be transferred through the nine link system namely (i) Mahanadi – Godavari link (ii) Inchampalli – Nagarjunasagar link (iii) Inchampalli – Pulichintala link (iv) Polavaram – Vijayawada link (implemented by Government of Andhra Pradesh) (v) Almatti – Pennar link (vi) Srisaïlam – Pennar Link (vii) Nagarjunasagar – Somasila link (viii) Somasila – Grand Anicut link and (ix) Cauvery – Vaigai – Gundar link to Krishna, Pennar, Cauvery, Vaigai and Gundar basins.
- It is now proposed to take up this nine link system in two phases. The Phase-I will comprise of transferring unutilised waters from Indravati sub-basin of Godavari basin to Cauvery basin through three links namely Godavari (Akinapalli) – Krishna (Nagarjunasagar) link, Krishna (Nagarjunasagar) – Pennar (Somasila) link and Pennar (Somasila) – Cauvery (Grand Anicut link). The Technical Feasibility Note of the Godavari(Akinapalli)-Cauvery(Grand Anicut) link project has been submitted to party States during December 2017. Draft MoA for preparation of DPR has also been sent to party States during February 2018.
- In Phase-II, the water from Polavaram dam will be transferred to Pennar basin (Proposal of Government of Andhra Pradesh) and further to Cauvery basin. Once the Mahanadi – Godavari link materializes, these two phases will further be supplemented and the remaining links in the nine link system will be taken up.

\*\*\*\*\*