

**STANDING COMMITTEE ON WATER RESOURCES**

**(2017-18)**

**SIXTEENTH LOK SABHA**

**MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION**

**DEMANDS FOR GRANTS (2018-19)**

**TWENTIETH REPORT**



**LOK SABHA SECRETARIAT**

**NEW DELHI**

March, 2018 / Phalgun, 1939 (Saka)

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**MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT AND**  
**GANGA REJUVENATION**

**DEMANDS FOR GRANTS**  
**(2018-19)**

*Presented to Lok Sabha on 13.03.2018*

*Laid on the Table of Rajya Sabha on 13.03.2018*



**LOK SABHA SECRETARIAT**  
**NEW DELHI**

*March, 2018 / Phalguna, 1939 (Saka)*

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COMPOSITION OF THE STANDING COMMITTEE ON WATER RESOURCES  
(2017-18)

Shri Rajiv Pratap Rudy - *Chairperson*

**LOK SABHA**

2. Shri Radheshyam Biswas
3. Shri Devusinh Jesingbhai Chauhan
4. Shri Sudheer Gupta
5. Shri Prakash B. Hukkeri
6. Shri B. Vinod Kumar
7. Shri Mohanbhai Kundariya
8. Shri Maganti Murali Mohan
9. Shri Sidhant Mohapatra
10. Shri Abhijit Mukherjee
11. Shri Subhash Patel
12. Shri Sanjaykaka Ramchandra Patil
13. Shri Vijaysinh Mohite Patil
14. Smt. Aparupa Poddar
15. Shri Vishnu Dayal Ram
16. Shri S. P. Y. Reddy
17. Shri Ram Prasad Sarmah
18. Smt. V. Sathyabama
19. Shri Lallu Singh
20. Shri Liladharbhai Vaghela
21. Smt. Dimple Yadav

**RAJYA SABHA**

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23. Shri Harshvardhan Singh Dungarpur
24. Mir Mohammad Fayaz
25. Dr. Bhushan Lal Jangde
26. Shri Sanjiv Kumar
27. Shri Ananda Bhaskar Rapolu
28. Shri Dharmapuri Srinivas
29. Shri Pradeep Tamta
30. Vacant
31. Vacant

## SECRETARIAT

- |    |                      |   |                            |
|----|----------------------|---|----------------------------|
| 1. | Shri Shiv Kumar      | - | <i>Joint Secretary</i>     |
| 2. | Smt. Rita Jaikhani   | - | <i>Director</i>            |
| 3. | Shri Kushal Sarkar   | - | <i>Additional Director</i> |
| 4. | Smt. Shanta B. Datta | - | <i>Committee Officer</i>   |

## INTRODUCTION

I, the Chairperson, Standing Committee on Water Resources (2017-18) having been authorised by the Committee to submit the Report on their behalf, present the Twentieth Report on Demands for Grants (2018-19) of the Ministry of Water Resources, River Development & Ganga Rejuvenation.

2. The Demands for Grants have been examined by the Committee under Rule 331E(1)(a) of the Rules of Procedure and Conduct of Business in Lok Sabha.

3. The Committee took evidence of the representatives of the Ministry of Water Resources, River Development and Ganga Rejuvenation on 23 February, 2018.

4. The Report was considered and adopted by the Committee at their sitting held on 08 March, 2018.

5. The Committee wish to express their thanks to the representatives of the Ministry of Water Resources, River Development and Ganga Rejuvenation for providing them the requisite written material and also for making free and frank oral depositions before the Committee - in connection with the examination of the subject.

6. The Committee would also like to place on record their sense of deep appreciation for the assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

**NEW DELHI**  
**08 March, 2018**  
**17 Phalgun, 1939 (Saka)**

**RAJIV PRATAP RUDY,**  
***Chairperson,***  
***Standing Committee on Water Resources***

**PART I**  
**REPORT**  
**CHAPTER I**

1.1 Water is the most precious natural resource for the existence of life. Our country is endowed with a vast amount of this natural resource. However water resources are gradually diminishing due to increasing pressure of population, urbanization, industrialization and climate change, making it, a 'stressed' natural resource, in need of urgent action for its holistic management and conservation. The per capita availability of water in India has decreased from 2209 m<sup>3</sup>/year in 1991 to 1545 m<sup>3</sup>/year in 2011 and it is estimated to decline further upto 1140 m<sup>3</sup>/year in the year 2050. Demand for water from various sectors viz. irrigation, drinking water, industry, energy and others is expected to rise from 710 Billion Cubic Metre (BCM) in the year 2010 to 843 BCM in the year 2025 and further to 1180 BCM in the year 2050. The challenge of conservation and management of water requires immediate action on the part of the Government to save the country from the scarcity of the most precious natural resource.

1.2 The Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR,RD&GR), Government of India, is responsible for the conservation, management and development of water as a national resource; overall national perspective of water planning and coordination in relation to diverse uses of water; general policy, technical assistance, Research and Development, training and matters relating to Irrigation and Multi-purpose Projects, Ground Water Management; Conjunctive use of surface and ground water, Command Area Development, Flood Management including Drainage, Flood-proofing, Water logging, Sea Erosion and Dam Safety. The Ministry has also been allocated the subject of regulation and development of inter-State rivers, implementation of awards of Tribunals, water quality assessment, bilateral and external assistance and cooperation programmes in the field of Water Resources and matters relating to rivers common to India and the neighboring countries.



1.3 In view of the impending challenges posed by the climate change and global warming, a query was raised by the Committee about the action plan initiated by the Ministry to address the problems of irrigation, drinking water and depletion in underground water. In reply, the Ministry in its written submission informed the Committee as follows:

“Ministry of Water Resources has adopted a multi-pronged approach to address this issue.

- a. Ground water irrigation scheme under Prime Minister Krishi Sinchai Yojna (PMKSY) - Har Khet ko Pani will be taken up in 96 deprived irrigation districts where less than 30% of the land holdings gets assured irrigation presently. This is expected to provide assured irrigation to small and marginal farmers. by tapping available ground water resources, which they are unable to undertake due to lack of technical know-how and resources.
- b. Incentivization Scheme for Bridging Irrigation Gap (ISBIG) has been conceived as a new scheme flowing from Cabinet approval to the PMKSY to address irrigation potential utilisation for projects other than 99 priority projects under PMKSY. Also, the funding is proposed from Long Term Irrigation Fund (LTIF).
- c. Atal Bhujal Yojna (ABHY) is posed as a new scheme at an estimated cost of Rs.6000 Cr., with Rs.3000 crore as loan from World Bank and the remaining Rs. 3000 Cr. through budgetary support from Government of India (only token provision has been kept at BE level pending approval of the scheme).

The scheme would be implemented in select over-exploited and ground water stressed areas in identified priority States in seven States, viz., Haryana, Gujarat, Rajasthan, Maharashtra, Karnataka, Uttar Pradesh (Bundelkhand region and parts of Western UP) and Madhya Pradesh (Bundelkhand region) through implementation of various interventions with community participation.

- d. State Water Budgeting initiative of National Water Mission

One of the major reasons for steep decline in per capita availability of Water in India from 5177 m<sup>3</sup> in 1951 to 1545m<sup>3</sup> in 2011 is lack of effective control on annual water consumption (demand) exceeding the annual water availability (supply). The annual water consumption (demand) by various sectors should be ensured to be within the limits of water availability (supply) for any water security and sustainability. Presently, water consuming (demand) sectors are not concerned about water availability nor is there any State level single agency which oversees and coordinates to hold any sector or entity accountable for over exploitation and excessive use (demand). It is this governance deficit that is majorly responsible for the steep fall in per capita availability. National Water

Mission has taken up an initiative to bridge this critical water governance gap through an institutional mechanism of State Water Budgeting, on the lines similar to that of Financial budgeting.

Under National Water Mission, 11 State Governments- Andhra Pradesh, Arunachal Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, Uttarakhand and West Bengal 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 and help in achieving Water Security, Safety and Sustainability through 5 strategic interventions viz.,

- Water Governance- improvement
- Supply Management
- Demand Management
- Technology for improved Water Use Efficiency
- Water Quality management .”

## BUDGET ALLOCATIONS

1.4 The detailed Demands for Grants in Demand No. 97 of the MoWR, RD&GR were laid on the Table of Lok Sabha on 08 February, 2018. A total Budgetary Provision of Rs. 8,860 crore (net) has been made for the year 2018-19. The following table shows the allocation of Budget for the MoWR, RD and GR for the last four years:-

**Table 1: Budgetary Allocation including Extra Budgetary Resources and Actual Expenditure**

(Rs. in crore)

Year	BE	RE	Actuals	Releases through Long Term Irrigation Fund (LTIF)
2015-16	4232	7032.43	6862	-
2016-17	6201	4755.50	4714	5751

2017-18	6887	7660.00	3003*	5650**
2018-19	8860	-	-	8000

\* Up to 20.02.2018

\*\* Anticipated upto 31/03/2018

1.5 The total Budgetary Allocation for the MoWR, RD and GR is Rs. 8,860 crore. Further there is a provision of loan of Rs. 8,000 crore from NABARD. Thus the total Budget of the Ministry is Rs. 16,860 crore. The Extra Budgetary resources arranged through Long Term Irrigation Fund (LTIF) has been increasing. While the total Budgetary Allocation for the Ministry has increased, its dependence on loans from NABARD has gone up very high. Further, it is seen that there is a huge gap between utilization of funds during the last three years. The scheme wise Budget Allocation and Actual Expenditure during the years 2017-18 and 2018-19 is stated below:

**Table 2: Scheme-wise Allocation and Expenditure under Central Sector Schemes of the Ministry of Water Resources, River Development and Ganga Rejuvenation**

(Rs. in crore)

S.No.	Name of the Scheme	BE 2017-18	RE 2017-18	Expenditure*	BE 2018-19
1.	Namami Gange	2550	3023	224	3070
	a) National Ganga Plan (NGP)	2250	2250	0	2250
	b) Ghat Beautification Works	50	50	0	50
	c) National River Conservation Programme (NRCP)	250	723	224	770

2.	Ground Water Management & Regulation	500	275	180	450
3.	National Hydrology Project	300	185	173	250
4.	River basin Management	200	200	147	225
5.	Farakka Barrage Project	155	135	96	195
6.	Development of Water Resources Information System	210	115	84	211
7.	Dam Rehabilitation & Improvement Project	160	95	50	124
8.	Research & Development & NWM	55	65	33	95
9.	HRD & Capacity Building	25	29	18	63
10.	Infrastructure Development	45	50	31	88

\*Up to 23.02.2018

**Table 3: Scheme-wise Allocation and Expenditure under Centrally Sponsored Schemes of the Ministry of Water Resources, River Development and Ganga Rejuvenation**

(Rs. in crore)

S.No.	Name of the Scheme	BE 2017-18	RE 2017-18	Expenditure*	BE 2018-19
1.	PMKSY – Har Khet Ko Pani (HKKP )	1450	1888	985	2600
	a. Debt Servicing to NABARD	1000	1143	549	2300
	b. RRR & SMI	450	695	436	300
2.	Flood Management & Border Areas Program	350	766	269	527
3.	Irrigation Census	25	15	15	50

\* Up to 23.02.2018

It is further seen that in all the Central Schemes and Centrally Sponsored Schemes, the utilization of funds has been lower as compared to Revised Estimate during 2017-18.

1.6 The salient features of the Union Budget (2018-19) with regard to Water Management, as furnished by the Ministry (scheme-wise) are as follows:

“Government has recognised the need for higher investment in water resources sector and accordingly, budget allocations have been increased from Rs.6887 crore to Rs.8860 crore, an increase of Rs.1973 crore. Higher allocations have been

provided under the flagship scheme of Namami Gange (increase by Rs.520 crore from Rs.2550 crore to Rs.3070 crore). Similarly allocations under flood management have been increased by Rs.177 crore. The Government is also increasing institutional capacity through Infrastructure Development scheme (increase of Rs.43 crore) and HRD & Capacity Building Scheme (Rs.38 crore).

The Government identifies the need for research and development in the sector and allocations under the R&D scheme, which now would include National Water Mission also, has been increased by Rs.40 crore, doubling the allocations. Further, higher provisions of Rs 40 crore have been made for replacement of old gate in Farakka Barrage.

Ministry has also proposed three new schemes, out of which two would be funded through Long Term Irrigation Fund (LTIF), though debt servicing would be from budgetary resources.

1.7 The overall Budgetary Allocations in respect of the Ministry of Water Resources, River Development and Ganga Rejuvenation has been increasing consecutively during the last three years. It has been increased by Rs. 1,973 crore in the year 2018-19 as against the Budgetary Allocation for the year 2017-18. The Allocation at Revised Estimate (RE) stage was increased by Rs. 773 crore in the year 2017-18.

1.8 In response to a query by the Committee on the details of New Schemes/Projects, being taken up on which increased expenditure is expected to be incurred in the next financial year *i.e.* 2018-19, the Ministry, in its written submission, stated:

“Schemes where additional funds have been allocated in RE (2017-18) vis-à-vis BE (2017-18) are as under (figures in bracket indicate additionality):

1. National River Conservation Plan- Externally Aided Project (EAP) component (Rs.497 crore).
2. Research and Development (Rs.20 crore)
3. Human Resource Development/ Capacity Building (Rs.4 crore).
4. Infrastructure Development (Rs.5 crore).
5. Har Khet Ko Pani – Grants to National Water Development Agency (NWDA) for repayment towards NABARD loan for PMKSY (Rs.150 crore).
6. Har Khet Ko Pani – sub-components of Surface Minor Irrigation (SMI) Schemes and Repair, Renovation and Restoration (RRR) of Water Bodies (Rs.295 crore).

7. Flood Management Programme (Rs. 413 crore).
8. River Management Activities and Work related to Border Areas (Rs.3 crore)
9. Farakka Barrage Project (Rs.20 crore in capital section. Overall the scheme allocations have been reduced due to savings in revenue Section).”

1.9 On being asked about the reasons for the increase in allocated funds by Rs. 773 crore in the year 2017-18 at RE stage as compared to BE allocations in the year 2018-19, the Ministry, in its written submission, stated:

“Schemes where additional funds have been allocated in BE (2018-19) vis-à-vis BE (2017-18) are as under (figures in bracket indicate additionality). The allocations have been enhanced considering committed liabilities, action plan for 2018-19 for the respective schemes and phasing approved during appraisal/approval in relation to schemes continuing from XII Plan’.

1. National River Conservation Plan (Rs.520 crore);
2. Research and Development (Rs.40 crore);
3. Human Resource Development/ Capacity Building (Rs.38 crore);
4. Infrastructure Development (Rs.43 crore);
5. Har Khet Ko Pani – Grants to NWDA for repayment towards NABARD loan for PMKSY (Rs.1300 crore);
6. Flood Management & Border Areas Programme (Rs. 177 crore);
7. Farakka Barrage Project (Rs.40 crore);
8. River Basin Management (Rs.25 crore);
9. Irrigation Census (Rs.25 crore)”

1.10 Replying to another query as raised by the Committee on measures taken by the Ministry to avoid drastic changes in allocation at RE stage and their consequent impact on implementation of Schemes/Programmes, the Ministry, in its written submission, stated:

“The allocations at RE stage are finalized by Ministry of Finance based on expenditure trend and projections of the Ministry. In the Financial Year 2017-18, RE has been fixed as Rs.7,660 crore i.e. an increase of Rs.773 crore over BE allocations of Rs.6887 crore. Thus there has been no reduction at RE stage.

Additional allocations at 4th and final supplementary stage have been sought under NRCP-EAP, PMKSY-HKKP, RMABA and FMP.”

1.11 The following Table shows the comparison of Budget Allocation under Revenue and Capital Section this year as against the last year:

**Table 4: Comparative Analysis of Demands for Grants (BE)**

(Rs. in crore / net)

Year	Revenue	Capital	Total
2016-17	5,812.60	388.61	6,201.21
2017-18	6,102.51	784.49	6,887.00
2018-19	8,152.14	707.86	8,860.00

Total Demand for the year 2018-19 is Rs. 8,860 crore, consisting of Rs. 8,152.14 crore under Revenue section and Rs. 707.86 crore under Capital section. The allocation under the Revenue section has been increasing since the year 2016-17, with a substantial increase of Rs. 2,049.63 in the Budget Allocation for the year 2018-19 as against that of 2017-18. Although Capital outlay was increased substantially last year by about Rs. 396 crore in Budget Estimate (BE) 2017-18 as compared to the BE allocation in the year 2016-17, it has been reduced by Rs. 76.63 crore in the BE (2018-19) as against the BE (2016-17). Thus the total Demand has increased by Rs. 685.79 crore in the Financial year (2017-18) as against the Financial year (2018-19).

1.12 Asked to explain the rationale for substantial increase (by Rs. 2049.63 crore) in Revenue section as against increase of Rs. 76.63 crore in Capital Section in BE (2018-19), the Ministry in its written submission stated:

"The increase in Revenue Section is owing to support for National Ganga Plan from Budgetary Resources from the financial year (2018-19) pursuant to discontinuation of National Clean Energy Fund (NCEF), wherefrom these activities were earlier being funded. Enhanced support is also being provided under National River Conservation Plan, National Hydrology Project (NHP) and PMKSY – HKKP.



The decrease in Capital Section is primarily due to shifting of expenditure under NHP from Capital to Revenue in FY 2018-19, as grants to implementing agencies are to be provided under Revenue Section. The allocations under NHP are reflected in table below:

	<b>Allocations at BE level</b>		
	<b>Revenue</b>	<b>Capital</b>	<b>Total</b>
2017-18 *	196.58	103.42	300.00
2018-19	226.96	23.04	250.00

\*In FY 2017-18, Ministry was required to obtain technical supplementary at first stage to address release under the scheme".

1.13 On being asked by the Committee about the extent to which the Ministry has been successful in achieving the efficient use of resources as a result of adopting new practice of classifying Budget expenditure only under Revenue and Capital sections since the financial year 2017-18, the Ministry, in its written submission, stated:

“Ministry is directly implementing projects only in case of limited organizations and schemes, namely Ground Water Management and Regulation (GWM&R) through Central Ground Water Board (CGWB), Farakka Barrage Project, Development of Water Resources Information System (DWRIS) through Central Water Commission (CWC); where allocations under capital section is made. The allocations under Revenue section therefore, exceed allocations under Capital section.

Nevertheless removal of classifications like Plan and Non-Plan, which hitherto were treated as different sections and involved need for supplementary for any *inter se* re-appropriation of funds has lent more flexibility to Ministry and better use of funds particularly at RE stage.“

1.14 While replying to another query by the Committee as to how the Ministry has been able to utilize resources in respect of various projects/schemes efficiently during the last financial year, the Ministry, in its written submission, stated:

“Effective 2017-18 the Ministry has removed salary component for regular staff under erstwhile Plan schemes. Allocations for salaries are now being reflected as part of establishment expenditure without artificially increasing size of the schemes.

This has been implemented as part of appraisal and approval of the schemes and is a major systemic improvement effectively increasing allocations for activities under the schemes.

As regards progress of expenditure, against BE allocations of Rs.6,887 crore, as on 31.01.2018, an expenditure of Rs.2,898.05 crore has been incurred, which is 42% of the allocations. However, pursuant to closure of National Clean Energy & Environment Fund (NCEEF) and unspent balances available with NMCG, no release has been made under components of National Ganga Plan and Ghat Works of Namami Gange in the financial year 2017-18. Owing to lesser withdrawals by the States under PMKSY/LTIF loan, major savings are available under PMKSY-HKKP-debt servicing also. After factoring in these, an expenditure of Rs.2,349.17 crore has been incurred against net balance of Rs.3,597 crore, which is 65.31% of net allocations available, after discounting allocations for National Ganga Plan (NGP), Ghat Works and PMKSY-HKKP-debt servicing.

Thus other than these two components, the expenditure trend is satisfactory.”

### **Borrowings from NABARD**

1.15 The Union Finance Minister in his Budget Speech for the year 2017-18 stated that a Long Term Irrigation Fund (LTIF) has been created under National Bank for Agriculture and Rural Development (NABARD) for Pradhan Mantri Krishi Sinchai Yojana (PMKSY) – 99 Priority Projects under Accelerated Irrigation Benefits Programme (AIBP) Projects, Har Khet Ko Pani (HKKP) and Polavaram Multipurpose Irrigation Project.

1.16 Further during the oral evidence held on 23.02.2018, the Committee were informed that initially there is a moratorium of 3 years with regard to payment of principal. Further, States can ask for funds straight from NABARD as per their demands.

1.17 Asked about the actual borrowings and interest paid to NABARD for the year 2017-18 till date, the Ministry, in its written reply, stated:

“An amount of Rs. 6974.757 crore has been borrowed from NABARD for 99 prioritised projects as well as Polavaram projects. The interest paid in 2017-18 as on date is Rs.548.98 Crore.”

1.18 When asked as to what extent, the borrowings of the Ministry have helped in faster completion of the Projects, the Ministry, in its written submission, stated:

“With the ensured funding and its timely availability, the States have been able to complete (almost complete) AIBP works of about 18 projects in the year 2016-17 as against average of about 7 to 8 projects per year in the past.

Also, the States have reported coverage of 4.80 lakh ha under Command Area Development (CAD) during 2016-17 as per the Utilization Certificates (UCs) furnished till now, however, this coverage may further improve on receipt of remaining progress report for the year 2016-17. It may be observed that it has helped in larger coverage as compared to initial years of coverage in XII Plan under CAD works.”

1.19 In response to a further query by the Committee about the monitoring mechanism set up for ensuring efficacious utilization of funds and targeted completion of projects, the Ministry, in their written submission, stated:

“The progress of the 99 projects is regularly monitored by CWC as per guidelines of the scheme. Further, a Project Management Unit (PMU) has been established for independent monitoring of these projects. An online MIS system has been developed and States input the physical and financial progress of the projects regularly in the MIS system. NABARD also makes monitoring visits as per their mandate. CAD projects are being monitored by CAD cells of Central Water Commission i.e. the Director, Monitoring of Central Water Commission of the concerned region. Moreover, for monitoring of PMKSY projects, a Project Monitoring Unit has been created by MoWR, RD & GR involving an Engineering and Management Consultant; and the monitoring visits are also undertaken by the Consultant. The progress of the projects is also reviewed by the Ministry at various levels regularly.”

### **Targets and Achievements under XII Plan**

1.20 The XII Five year Plan has ended in the year 2017. The targets and achievements of various schemes/programmes/projects in the MoWR, RD & GR at the end of XII Plan, as furnished by the Ministry, in its written reply, is given below:

"Details in relation to Schemes continuing from XII Plan into remaining period of 14th Finance Commission period are:

**Schemes continuing from XII Plan into remaining period of 14th Finance Commission**

(Rs. in crore)

<b>S. No.</b>	<b>Name of the Scheme</b>	<b>XIIth Plan outlay approved</b>	<b>Expenditure</b>
1.	Infrastructure Development Scheme	246.26	56.826
2.	Human Resource Development and Capacity Building Scheme	351.00	109.357
3.	Research & Development Scheme	360.00	171.20
4.	River Basin Management Scheme	975.00	746.77
5.	Development of Water Resources Information System (DWRIS)*  <i>*Includes irrigation census which was then part of DWRIS</i>	1355.32	311.50
6.	National Water Mission	196.00	13.25
7.	Flood Forecasting	281.00	157.86
8.	Flood Management Programme	10000.00	1307.07
9.	River Management Activities and Work related to border Areas	740.00	365.25
10.	Ground Water Management & Regulation	3319.00	580.93
11.	Dam Rehabilitation and Improvement Programme	2100.00	2057.63
12.	Farakka Barrage Project	577.01	373.50

1.21 The Committee desired to know the reasons for non-achievement of targets fixed under XII Plan and Action Plan made/contemplated by the Ministry for completion of the targets and for taking up its future Programmes/Schemes in a time bound manner, the Ministry, in its written submission, stated:

“The Hon’ble Minister (WR, RD &GR) and senior officers of the Ministry are holding regular review meetings to identify the bottlenecks and other factors in the way of achieving the set targets in respect of the schemes of the Ministry and find out ways to mitigate them through consultations/ discussions with the Wing Heads. However, some of the steps undertaken are given below:-

<b>Schemes</b>	<b>Steps taken/proposed to be taken for improvement in the implementation of scheme</b>
Irrigation Census (RMIS)	Suggestions from States/UTs on improvement of statistical instruments like schedules, instruction manual etc. to be used in the next 6th Minor Irrigation (MI) Census have been invited and these will be appropriately incorporated in the schedules etc. It has been planned to expand the scope of the 6th MI Census and conduct the Census of Water bodies in convergence with 6th MI Census
Farakka Barrage Project	Jurisdiction of Farakka Barrage Project as regards to undertaking river bank protection works has been restored to its original jurisdiction (12.5 km in the upstream and 6.9 km in the downstream of the Farakka Barrage) with the approval of Hon’ble Minister (WR, RD & GR).
Flood Management & Border Areas Programme	<ul style="list-style-type: none"> <li>• In order to ensure regular monitoring of the effectiveness and sustainability of various structures it is suggested that during monsoon and after any extreme event, Flood Management Programme (FMP) works need to be regularly visited and any damage to the infrastructure should be immediately attended.</li> <li>• It is felt that monitoring of construction work should be more rigorous with better control of quality of the material used as well as workmanship. Advanced techniques such as remote sensing may be employed for monitoring the progress of the various works. For important works, videography of the construction work</li> </ul>

	<p>may also be considered. Many times, the damage to the existing FMP works by flood waters becomes quite critical within a few hours/days after it is noticed and departments are unable to immediately take up necessary maintenance for want of funds. Some funds may be made available with either administration or with water resources / irrigation departments which could be released at a short notice for critical maintenance of FMP works.</p> <ul style="list-style-type: none"> <li>• Due to revision of the policy for providing compensation for the land acquired, the cost of many schemes has risen substantially. This needs to be properly factored in the scheme.</li> <li>• In one case, it was informed that the compensation to be paid for land acquisition to two farmers whose fields are adjacent may be significantly different because the fields are in two different districts and the circle rates are significantly different. This causes resentment to the farmers who get less compensation and these people strongly oppose the project. Such issues may be arising at other places too and need to be addressed.</li> <li>• In case of embankments, the entire length of embankment could not be completed at some places and there are patches in between which are not taken up. This has resulted in suboptimal performance of the infrastructure that has been created and the same may rapidly deteriorate with time. This problem needs to be addressed appropriately.</li> <li>• At many places the work has been stopped halfway for want of funds. Possibly this may cause erosion from exposure to flow from behind, from tributaries etc. The investment till now may go waste in such cases. There is very urgent need to complete the work so that the embankment works are not exposed and are protected by the slope protection works</li> </ul>
Infrastructure Development	A committee of officers has been constituted to regularly review and ensure timely completion of work. CWC and CGWB have been impressed upon to have better coordination with CPWD/NPCC for completion of works as per the priority assigned by the Ministry.
National Hydrology Project	Management Information System (MIS) based Project Monitoring has been developed and being used for regular

	update by National Project Monitoring Units (NPMUs) as well as State Project Monitoring Units (SPMUs). MIS based Project Monitoring was developed and being used for regular update by NPMU as well as SPMUs.
Ground water Management & Regulation	<ul style="list-style-type: none"> <li>• A National Inter-Departmental Steering Committee (NISC) has been constituted as the apex body for overall guidance for the implementation of the Project at National level.</li> <li>• At the State Level a Ground Water Coordination Committee (SGWCC) has been constituted at the State Level with members from different State Government Departments.</li> <li>• A National Level Expert Committee has been constituted to review the outputs of the Aquifer Mapping</li> <li>• Aquifer Management Plans are being firmed up in collaboration with domain experts from academics, agriculture etc</li> <li>• Inputs from stakeholders such as district implementation agencies are being incorporated</li> <li>• Advanced technologies like isotopic application, heli-borne surveys, ground water modeling etc are being adopted for improving the Management Plans</li> <li>• Brainstorming sessions are being conducted at national level in form of 'Bhujal Manthans'.</li> <li>• Capacity building of officers of CGWB</li> <li>• Engagement of Project Management Consultants</li> </ul>
Polavaram Multipurpose Project	The project is now being funded out of Long Term Irrigation Fund (LTIF) through NABARD.
Accelerated Irrigation Benefit Programme	From 2016-17, Ninety Nine (99) on-going Accelerated Irrigation Benefits Programme (AIBP) Major/Medium projects along with their Command Area Development & Water Management (CADWM) works having potential of 76.03 lakh ha. and estimated cost of Rs. 77,595 cr. have been identified in consultation with States, for completion 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. AIBP works of 18 prioritized projects are complete/almost complete. Further during 2017-18, AIBP works of 33 prioritized projects are targeted to be

	<p>completed. Several steps have been taken to improve timely implementation viz.</p> <ul style="list-style-type: none"> <li>• An MIS portal for uploading of physical-financial progress by the States for projects being funded has been made operational.</li> <li>• A Project Monitoring Unit (PMU) has been established which will undertake monitoring visits in addition to CWC monitoring</li> <li>• The progress under the scheme is reviewed at various levels including by NITI Aayog</li> </ul>
PMKSY (Har Khet Ko Pani)	<p>Mechanism of setting up State level Sanctioning Committee (SLSC) for processing the proposals for funding under PMKSY has been introduced. This will speed up the sanction of projects for Central assistance. The SLSC would also prioritize the projects as per the requirements and ensure preparation of DIPs/SIPs. A new mechanism to fund these projects through NABARD has been announced and detailed modalities are being worked out.</p>
HRD/Capacity Building Programme	<p>National Water Academy (NWA) has taken the following initiatives:</p> <ul style="list-style-type: none"> <li>• Establishment of Module platform for Distance Learning and Water Education and Centre of Geo-informatics in Water Sector</li> <li>• Hiring of Consultants and Experts for supporting training programs as well as preparation of training modules</li> <li>• Software Development and Modeling Centre to increase water literacy, availability of better hydro-informatics tools and better management of Indian water resources by developing the indigenous software algorithms which will be more appropriately applicable to Indian scenario</li> <li>• Infrastructure Development</li> <li>• Necessary steps are being taken to prepare proposals well in advance in coordination with concerned authorities like NIC, CPWD, CWC-HQ so that approvals of the competent authority are in place and the budgetary provisions are utilized. In-house training has started in the Ministry.</li> </ul>
DWRIS	Timely approval of the Scheme for continuation in 14th FC



	<p>period has been ensured. New hydro-meteorological observation stations are being operationalized and steps for increase in lead time of flood forecast to 72 hours are being made. In relation to Establishment requirements of various observation sites, tender documents have been finalized and services are being outsourced. Delegation of Financial Powers to CWC officers involved in the implementation of Scheme are being revised to ensure speedy approval of the activities at each level.</p>
National Water Mission (NWM)	<ul style="list-style-type: none"> <li>(i) Detailed template for preparation of State-Water Budget report was prepared based on two national level workshops and a number of brainstorming sessions conducted by NWM.</li> <li>(ii) A separate template for baselines studies is being prepared.</li> <li>(iii) E-office has been implemented in NWM for transparency and effective administrations.</li> <li>(iv) Bio-metric attendance was implemented in NWM</li> <li>(v) Considering multidisciplinary approach, NWM has revised the consultants and young professional's eligibility conditions and submitted to the Ministry in February, 2017.</li> <li>(vi) A study on establishing benchmarks for industrial water use in two industrial sectors i.e. Thermal power plants &amp; textile industries has been taken up. The study is in final stage.</li> </ul>

## CHAPTER II

### CENTRAL SECTOR SCHEMES

#### A. **NAMAMI GANGE**

2.1 The Union Budget 2014-15 provided for the setting up an Integrated Ganga Conservation Mission namely "*Namami Gange*". *Namami Gange* Programme was approved for an indicative cost of Rs. 20,000 crore.

2.2 The focus under the mission "*Namami Gange*" has been on pollution abatement interventions namely Interception, diversion and treatment of waste water flowing through the open drains through bio-remediation/appropriate in-situ treatment/use of innovative technologies / Sewage Treatment Plants (STPs) / Effluent Treatment Plants (ETPs); rehabilitation and augmentation of existing STPs and immediate short term measures for arresting pollution at exit points on River Front to prevent inflow of sewage etc. in River; Common Effluent Treatment Plants (CETPs) for Major Industrial Clusters and Operation & Maintenance (O&M) for a definite period, etc. Apart from these, Projects/interventions in Rural Sanitation, River Front Development/Management of Solid Waste/pious refuse management, sewerage network, establishment of National Ganga Monitoring Centre, capacity building, research/pilot studies, non-point pollution mitigation, GIS mapping/applications, restoration of special properties of Ganga, sand mining, biodiversity conservation, habitat improvement, institutional development, river flow improvement, Ganga Task Force, Ganga Vahini, communication and public outreach activities and other activities/pilot projects have been included in the National Ganga River Basin Authority (NGRBA) Programme framework and the ones arising from Ganga River Basin Management Plan (GRBMP) aiming at Ganga rejuvenation will also be undertaken.

2.3 With respect to the allocated Rs 20000 Cr for the *Namami Gange* programme, till date 191 Projects have been sanctioned (including 97 Projects for Sewerage Infrastructure and STPs) at an estimated cost of Rs 16681.10 Cr. The *Namami Gange* programme is targeted to be completed by December 2020. As of now the Projects already under implementation are expected to be completed by that time. The exact extent of time and cost over-run (if any) would be clearer once the Projects sanctioned come to a significant stage of implementation by December 2018.

2.4 National Mission for Clean Ganga has been restructured and strengthened recently so that it is empowered to discharge its functions in an independent and accountable manner and also to sanction and complete the various projects on fast track. It has been empowered for sanction of projects upto Rs.1000 crore.

2.5 Allocations to NMCG from the Government of India are divided into four components viz.: (i) National River Conservation Plan (NRCP)-Externally Aided Programme (EAP), (ii) NRCP- Non Externally Aided Programme, (iii) National Ganga Plan (NGP), and (iv) Ghat Works and Beautification of River fronts.

**(a) National River Conservation Plan**

2.6 Under the National River Conservation Plan (NRCP), the World Bank assisted Projects under National Ganga River Conservation Authorities are executed as National Mission for Clean Ganga

2.7 The Budgetary Allocations and Actual Expenditure under the National River Conservation Programme (NRCP) as per the Expenditure Budget (2018-19) are:

**Table 5: Budget Allocations under the National River Conservation Programme**

**(Rs. in crore/Revenue)**

Actual 2016-17		BE 2017-18		RE 2017-18		BE 2018-19	
EAP component	Programme component	EAP component	Programme component	EAP component	Programme component	EAP component	Programme component
87.10	80.40	130.00	120.00	627.00	98.42	600.00	170.00

2.8 The Actual Expenditure incurred under NRCP by way of releases during the year 2017-18 (till 15.02.2018) is as follows:

**Table 6: Expenditure incurred under National River Conservation Programme****(Rs. in crore)**

	<b>Actual Expenditure by Govt. of India</b>	<b>Actual Expenditure by NMCG</b>
Externally Aided Project Component	128.00	260.70
Programme Component	96.12	40.26
<b>Total</b>	<b>224.12</b>	<b>300.96</b>

2.9 Funding pattern for ongoing Projects under this Central Scheme is 70:30 i.e. 70 % is Central share and 30% is from the State Government, in respect of World Bank funded Projects whereas funding pattern for Japan International Cooperation Agency (JICA) assisted Projects is 85:15 for all Project approved prior to the year 2014-15. For all Projects approved after 2015, 100% of the Central sector support for World Bank funded Projects is being provided. The Actual Expenditure under this programme during the 2017-18 is Rs. 224 crore.

2.10 In response to a query by the Committee about the reasons for substantial increase in allocation of funds (both EAP Component and Programme Component) in the year 2017-18 *vis-a-vis* the Actual Expenditure in the previous year, the Ministry in its written submission, stated:

"In the year 2017-18, against BE of Rs.130.00 crore the allocation of funds is increased to Rs.627.00 crore at RE stage. During the period March 2017 to January 2018, total 21 number of projects involving amount of Rs.6,054.8 crore has been sanctioned therefore higher demand was projected expecting release of mobilization advance and other funding support. Hence revised allocation of Rs.627.00 crore sought under head EAP at RE stage".

2.11 On being asked by the Committee as to whether there were problems/bottlenecks being faced in implementation of this Programme and measures taken to resolve them, the Ministry in its written submission, submitted:

"Under *Namami Gange* programme, 97 Sewerage Infrastructure projects have been sanctioned at the cumulative cost of Rs 14,127,49 crore, out of which 41 projects are under EAP.

For the 97 sewerage infrastructure projects, including 32 NGP projects, 20 projects have been completed. Progress of some of the projects has been slow as compared to the targeted timeline. During the implementation of projects, some bottlenecks like delay in tendering process, retendering, non-availability of land, legal issues, natural calamities (like floods, landslides, etc.), delay in permission from local authorities on road cutting/crossing etc. have been experienced. NMCG has been making a continuous follow up with the State Programme Management Groups (SPMGs) and Urban Local Bodies (ULBs). Regular review meetings have been conducted with the SPMGs so as to resolve the various issues for delay and ensure the timely completion of the projects. After the launch of *Namami Gange* Programme, which brought all stake holders in single platform, the issues/ bottlenecks were resolved/removed resulting in completion of 13 projects. The physical progress has not been commensurate with the financial targets fixed, which is because of the fact that in initial phase, pace of expenditure was slow as proper planning is needed to take up the projects in a scientific and planned manner. Pace of expenditure will increase with the start of the large number of projects sanctioned in recent times. All efforts are being made to complete these pollution abatement projects by 2020".

**(b) National Ganga Plan**

2.12 Under the National Ganga Plan, provisions are made for implementing Schemes/Projects for the river Ganga and its tributaries. It includes scheme for rehabilitation and up-gradation of existing Sewerage Treatment Plants (STPs) besides commissioning of New STPs.

2.13 The details of Budget Allocation and Actual Expenditure incurred under this Programme since its inception are as follows:

**Table 7: Budget Allocations and Actual Expenditure under National Ganga Plan**  
(Rs. in crore)

FY	BE	RE	Actual Expenditure by Govt. of India	Actual Expenditure by NMCG (upto 15.02.2018)
2014-15	1,500.00	1,500.00	0.00	-
2015-16	2,100.00	1,000.00	1,000.00	280.12
2016-17	2,150.00	1,440.50	1,440.50	446.82
2017-18	2,250.00	2,250.00	-	602.18
Total	8,000.00	6,190.50	2,440.50	1329.12

2.14 When asked as to why the Budget Allocations were increased under this programme in the year 2017-18 as against Actual Expenditure in the previous year and keeping the same allocations i.e. Rs. 2,250 crore for the year 2018-19, the Ministry, in its written submission, stated:

"Under this programme during the period March 2017 to January 2018 total projects amounting to Rs.1670.00 crores have been sanctioned for Sewerage Infrastructure. These projects are at various stages of execution and award and hence require funds on a regular basis to ensure physical progress and for meeting the expected timelines for their completion. Further the two projects have been awarded under Hybrid Annuity Model which require dedicated funds in escrow account. Besides the infrastructure development projects, other major projects under 'Namami Gange' programme include creation of Individual Household Latrine (IHHL) and Solid and Liquid Waste Management in villages located on the banks of Ganga involving funds amounting to Rs.800 crore (approx.). Other programmes include plantation alongside the bank of river Ganga, taking up in-situ bio-remediation projects at various places and in drains, setting up of Ganga Task Force for engaging with public at large and for taking up various programmes alongside river Ganga and other initiatives for maintaining ecological flow, biodiversity and health of river Ganga. Side by side, a number of studies are also being undertaken through IIT Consortium and other academic institutions like National Environmental Engineering Research Institute (NEERI), Central Inland Fisheries Research Institute (CIFRI) etc. on issues relating to properties and pollution mitigation techniques in river Ganga. Therefore the higher demand of fund was anticipated".

2.15 On being asked by the Committee to furnish the details of expenditure incurred under this Head for the year, 2017-18, the Ministry, made a written submission:

"No releases have been made to NMCG under this head during current year. However, out of unspent balance available with NMCG, it has incurred an expenditure of Rs.602.18 crore under National Ganga Plan during the year 2017-18 (up to 15.02.2018)".

2.16 The Committee asked to give an overview of the activities/programmes taken up/being taken up for Ganga Rejuvenation, the Ministry, in its written submission, stated:

"Cleaning of river Ganga is being carried out through various activities including treatment of municipal sewage, treatment of industrial effluent, river surface cleaning, rural sanitation, ghats and crematoria works, afforestation, biodiversity, awareness creation & public outreach etc. The municipal sewage being generated in cities on the banks of Ganga is being managed by a mix of Interception and

Diversion projects, sewerage network and Sewage Treatment Plant (STP) projects. Total 191 projects for various activities have been sanctioned, out of which, 48 numbers of projects have been completed so far. As against the targets envisaged in the Namami Gange programme, the 89 project for sewage management interventions at 56 towns located along main stem of river Ganga have been approved aiming at creating / rehabilitating STPs of capacity 1525 MLD. Of these 19 projects have been completed; 42 projects are in progress and 28 projects are in different stages of tendering. In addition, 8 projects along Ganga tributaries have been approved aiming at creating/rehabilitating STPs of capacity 1329 MLD. Out of these 4 projects are in progress and 4 projects at different stages of tendering".

2.17 When asked about reasons for slow progress of work, the Secretary, MoWR,RD&GR, during the course of oral evidence held on 23.02.2018, stated:

"Earlier, the approval process was very long involving assessment, condition assessment, feasibility assessment, DPR preparation, Third party appraisal etc. which took a lot of time. NMCG was not an Authority. It has been made an Authority since 7 October, 2016 and it has been empowered to approve the projects itself. Most of the projects started getting approval basically from March, 2017 onwards."

2.18 In response to a query by the Committee about the major hindrances, if any, being faced for faster implementation of this Programme, the Ministry, in its written submission, stated:

"The bottlenecks found in effective implementation of the programme are:

- It has been observed that sewage management is not amongst the priorities of State Governments.
- One of the major reasons for delay in execution of projects in the past was non availability of suitable land for STPs and System Protection Schemes (SPS). In Bihar, 3 projects of STP and Sewerage schemes in Begusarai, Munger and Hajipur were terminated due to delay in execution. One of the major reason for the same was non-availability of the land for the construction of STP and SPS by the State Government to the contractor even after 2-3 years of signing of agreement.
- Poor contract management by the executing agencies is also found as one of the major issues in delay of projects.
- Non-effective implementation of community awareness, public outreach programme and community consultation.
- Delay in provision of State share. In certain projects in Bihar, State Government took more than 6 to 7 months to sanction additional cost over and above Administrative Approval and Expenditure Sanction (AA&ES) cost.

- As there is no House Sewer Connection (HSC) in many cities, even though STPs have been constructed but sewage flow does not reach STPs resulting in under-utilization of STP capacities.
- Lack of O&M Support by local Government.

In order to mitigate these impediments, all new projects sanctioned are including O&M component for 15 years under Central Government funding.

- 84 STPs (1584 MLD) were constructed under various programmes (Ganga Action Plan) I, II, NGRBA and State projects) along river Ganga main stem. STPs have either been non-functional or underutilized and most of them not meeting the CPCB norms. NMCG has taken initiative to make these STPs functional and operate them to their optimum capacity. NMCG has accordingly sanctioned upgradation/rehabilitation for 23 such STPs and 4 STPs completed recently does not require intervention. For other 57 STPs, an international organization has been engaged to study these STPs and develop DPRs to make these functional.
- States have been persuaded for approving and releasing funds for Operation and Maintenance of earlier created assets as well as making HSCs for projects. First set of Hybrid Annuity based PPP projects in the waste water treatment sector – 50 MLD STP at Varanasi and 82 MLD STPs at Haridwar have been awarded. The construction of these STPs will commence by the end of February. Both these projects are single greenfield/new STP construction. NMCG is moving one step ahead with the concept of “one city- one operator’ under Hybrid Annuity based PPP mode, by integrating the existing treatment infrastructure in the city/town with the new /proposed STPs. Tender for integrating the existing treatment infrastructure with the 30 MLD new STP in Mathura has already been invited. Mathura Project also has a 20 MLD tertiary treatment plant to supply treated waste water to Mathura Refineries for non-potable purpose.
- Next set of projects to be rolled out under the “one city-one operator” concept include the development of 72 MLD STP at Allahabad, 150 MLD STP at Patna, 136 MLD in Kolkata, 49 MLD STP at Kanpur. The tenders for these projects will be invited in the last week of February 2018. NMCG has also sanctioned 4 projects under Hybrid Annuity based PPP mode at Farukkabad (33MLD), Ghazipur (21MLD), Mirzapur (17MLD) and Bhagalpur (65MLD) which will be tendered by mid of March 2018".

2.19 Asked about the time period fixed for cleaning of river Ganga, the Ministry made a submission:

"Cleaning of river Ganga is a continuous process. Owing to requirement in behaviour change among stakeholders, priority is to stop dirtying the river. *Namami Gange* is sanctioned by Govt. of India upto 2020 for taking various projects for



cleaning of Ganga. Presently number of the Projects are in progress for pollution abatement ,River Water quality monitoring, Afforestation along river Ganga, conservation of Biodiversity in the bank of river Ganga and other projects".

2.20 When further asked by the Committee to state the details of the monitoring and evaluation mechanism set up to oversee the progress of National Gange Programme, the Ministry, in its written submission stated:

"Several measures have been initiated to expedite the implementation process.

- National Mission for Clean Ganga have been restructured and strengthened recently so that it is empowered to discharge its functions in an independent and accountable manner and also to sanction and complete the various projects on fast track. It has been empowered for sanction of projects upto Rs.1000 crore.
- In order to ensure effective implementation and timely completion of the projects, project management consultants / supervision consultants / project engineers are being appointed. Under *Namami Gange* Programme provision has been kept for long term (10–15 years) operation & maintenance of the assets created so as to ensure that the assets created are permanent and operates in a sustainable manner.
- First set of Hybrid Annuity based PPP projects in the waste water treatment sector – 50 MLD STP at Varanasi and 82 MLD STPs at Haridwar have been awarded. The construction of these STPs will commence by the end of February. Both these projects are single greenfield/new STP construction.
- NMCG is moving one step ahead with the concept of “one city- one operator’ under Hybrid Annuity based PPP mode, by integrating the existing treatment infrastructure in the city/town with the new /proposed STPs. Tender for integrating the existing treatment infrastructure with the 30 MLD new STP in Mathura has already been invited. Mathura Project also has a 20 MLD tertiary treatment plant to supply treated waste water to Mathura Refineries for nonpotable purpose.
- Next set of projects to be rolled out under the “one city-one operator” concept include the development of 72 MLD STP at Allahabad, 150 MLD STP at Patna, 136 MLD in Kolkata, 49 MLD STP at Kanpur. The tenders for these projects will be invited in the last week of February 2018.
- NMCG has also sanctioned 4 projects under Hybrid Annuity based PPP mode at Farukkabad(33MLD), Ghazipu(21MLD), Mirzapur(17MLD) and Bhagalpur(65MLD) which will be tendered by mid of March 2018. Regular monitoring of these projects is being done by NMCG. Regular reviews are held up with SPMGs/CPSUs to expedite these projects.
- The implementing Agency of the Biodiversity and Afforestation Project reports the progress of implementation (both physical and financial progress including fund

utilization certificate) on regular basis. The reporting arrangement is based on quarterly report and annual reports at the end of each year. Progress implementation of the project is being closely monitored by NMCG so as to ensure that the project is completed within the stipulated period of time".

**(c) Ghat Works and Beautification of River fronts**

2.21 The Budgetary Allocations and Expenditure for the last four years under this scheme is as stated below:

**Table 8: Budget Allocation and Expenditure**

(in Rs. crore)

Year	BE	RE	Actual
2014-15	100	100	-
2015-16	100	100	100
2016-17	100	67.00	67.00
2017-18	50.00	50.00	-
2018-19	50.00	-	-

2.22 During the oral evidence, a representative of the Ministry informed the following with regard to implementation of this Project:

"Up till now, we have taken up a total of 64 projects. Out of these 64 projects, we have completed 24 projects that are in West Bengal. In other places, the projects are at various stages of implementation."

2.23 When a query was raised by the Committee as to why allocations under this Head has been kept very low, the Secretary, (MoWR, RD&GR), during the course of oral evidence stated:

"Rs. 50 crore is for this year, but ghats and crematoria are taken under two heads. One, the Finance Minister, announced about seven towns for which a different provision is made, but otherwise the National Ganga Plan (NGP) also has a total Budget provision of about Rs. 450 crore as far as ghats and crematoria are concerned. I would only like to say that as regards ghats and crematoria initially, in fact, we have taken more than perhaps the Budget permitted, but right now it was decided that our emphasis should be more on those measures, which pollute Ganga. As far as the public amenities are concerned, by and large, they should be

done by the Urban Local Bodies, etc. So, we are taking it up as per need-based, but we are not able to meet all the requirements.....What has happened is that this sanctioned project was of Rs.1100 crore whereas Budget provision was only Rs.450 crore."

## **B. GROUND WATER MANAGEMENT AND REGULATION**

2.24 Ground Water Management and Regulation (GWM&R) Scheme, a Central Sector Scheme of Ministry of Water Resources, River Development and Ganga Rejuvenation is under implementation since XII Plan (2012-17) and aims at following:

- a. Ascertaining ground water quality and quantity
- b. Preparing Aquifer Maps and Management Plans
- c. Improving ground water availability and sustainability
- d. Empowering stakeholders and capacity building of the community
- e. Enhancing institutional cooperation
- f. Upgradation and modernisation of equipment

2.25 The major achievements during XII Plan under this scheme are:

- a. Aquifer Maps and Management Plans - 6.31 lakh Km<sup>2</sup>
- b. Ground Water Monitoring of 23,125 wells-4 times every year
- c. Replenishable resource assessment completed for base year 2011 & 2013
- d. Ground Water Regulation: 1145 NOC issued and 222 NOC renewed
- e. Publication: State Level Reports - 70, Year Book - 115, District Brochures - 642
- f. Convergence with HRD/IEC scheme of the Ministry for knowledge dissemination to stakeholders

2.26 The scheme is being continued during 2017-2020 with an outlay of Rs. 1164 crore and has the following components:

- g. National Aquifer Mapping and Management Programme
- h. Ground Water Monitoring, Resource Assessment, Regulation, Information Dissemination etc.
- i. Strengthening of infrastructure for technological upgradation (Machinery and Equipment)

2.27 The Budgetary Allocations and Actual Expenditure under this Scheme for the last four years are as under:

**Table 9: Budget Allocation and Expenditure under the scheme of Ground Water Management and Regulation**

(Rs. in crore)

Year	Budget Estimate	Revised Estimate	Actual Expenditure
2014-15	325	143	124.89
2015-16	163	164.02	140.84
2016-17	303.38	115	112.86
2017-18	500	275.00	164.12 (Upto December 2017)
2018-19	450	-	-

2.28 A query was raised by the Committee with regard to reasons for decreasing allocations under this scheme at RE stage by Rs. 225 crore during the year 2017-18 and again increasing allocations by Rs. 225 crore in the BE 2018-19. Responding to this, the Ministry, in its written submission, stated:

"Outsourcing works amounting to ~ Rs 500 crore have been taken up during 2017-18 and an expenditure of ~Rs 200 crore is envisaged towards this. Thus, committed liability of remaining works amounting to ~Rs 300 crore has been carried forward to the year 2018-19 resulting in increased requirement of funds to the tune of Rs.450 crore".

2.29 When asked about the problems faced in implementation of this scheme and remedial measures taken to address those problems, the Ministry, in its written submission, stated as under:

"Aquifer mapping at such a large scale has been taken up for the first time in the country. Various activities during the XII plan (2012-17) were targeted for in-house work with a broad plan for outsourcing activities. The outsourcing activities for undertaking Aquifer Mapping was delayed since these activities were for the first time contemplated in the country at such a scale. However, most of the outsourcing works were initiated only during the later part of 2016-17 and have been taken up

during 2017-18. The outsourcing activities initiated are in various stages of progress.

The following steps were taken that greatly helped in overcoming the teething problems encountered in implementation of the scheme:

i) A National Inter-Departmental Steering Committee (NISC) under the chairmanship of Secretary (MoWR, RD&GR) has been constituted which has provided guidance in implementation of the Project at National level.

ii) At the State Level, Aquifer Maps and Management Plans are shared with State Ground Water Coordination Committees (SGWCC) drawing members from different State Government Departments.

iii) Regular review of the outputs of aquifer mapping was undertaken by a National Level Expert Committee drawing domain experts which include ex- Chairman CGWB, academicians from IIT, Delhi and Roorkee, agriculture experts etc".

2.30 When the Committee specifically asked about the total area covered under Aquifer Mapping till date, the Secretary during the course of oral evidence stated:

"Sir, our aim was to complete aquifer mapping of 23 lakh sq. km. by 2020. Earlier the Budget provisions were low. Therefore, we thought that we should take money under LTIF. But when Budgetary funds were available, as you know in Oil and gas, drilling is generally done by private agencies. There was never large scale drilling done in CGWB because they did not have that kind of drills. Now we have brought private agencies. The departmental capacity is very limited. Earlier tender could not be finalized. Now tendering process is on. Our aim is to expedite the target of covering 12.9 lakh sq. km. area under aquifer mapping."

2.31 The Committee were informed that out of the target of 12.91 sq. lakh km. targeted to be covered under Aquifer Mapping by the year 2020, the Ministry has finished aquifer mapping for 7.99 lakh sq. km. area so far.

2.32 In the Preliminary Material on Demands for Grants (2018-19), the Ministry has stated the details of measures taken to improve implementation of Aquifer Mapping, as follows:

- "A National Inter-Departmental Steering Committee (NISC) has been constituted as the apex body for overall guidance for the implementation of the Project at National level.

- At the State level a Ground Water Coordination Committee (SGWCC) has been constituted at the State level with members from different State Government Departments.
- A National Level Expert Committee has been constituted to review the outputs of the Aquifer Mapping.
- Aquifer Management Plans are being firmed up in collaboration with domain experts from academic, agriculture etc.
- Inputs from stakeholders such as district implementation agencies are being incorporated.
- Advanced technologies like isotopic application, heli-borne surveys, ground water modeling etc are being adopted for improving the Management Plans.
- Conducted brainstorming sessions at national level in form of 'Bhujal Manthans'.
- Capacity building of officers of CGWB.
- Engagement of Project Management Consultants.

## **C. RIVER BASIN MANAGEMENT**

2.33 River Basin Management (RBM) Scheme comprises of two components viz. Brahmaputra Board and Investigation of Water Resources Development (IWRDS) (i.e. CWC & NWDA). Details of component-wise objectives/goals under this scheme are given below:

### **(a) Brahmaputra Board**

2.34 The Brahmaputra Board has been setup by an Act of Parliament, called the Brahmaputra Board Act, 1980 and it started functioning since 11th January, 1982 for planning and integrated implementation of measures for control of floods and bank erosion in Brahmaputra and Barak Valley and for matters connected therewith in the States of Arunachal Pradesh, Assam, Meghalaya, parts of the States of Manipur, Mizoram, Nagaland, Tripura Sikkim and a part of West Bengal falling within the Brahmaputra Basin. It is carrying out following major works- a) Survey, Investigation & preparation of Master Plan, b) Preparation of Detailed Project Report (DPR) of Multipurpose Projects c) Drainage Development Schemes d) Anti-erosion works including protection of Majuli Island, Balat Village in Meghalaya, Mankachar and Masalabari area in Assam etc from flood and erosion. e) Construction of Raised Platforms. The Board has been carrying out above works as per proposed plan of the RBM Scheme.

### **(b) CWC component under IWRDS**

2.35 The first and basic requirement for a project is to locate a suitable site to establish its techno-economic viability. For establishing techno-economic viability, DPR is prepared after detailed survey and investigations and studies on hydrological, irrigation planning, environment aspects, cropping pattern, crop water requirement etc. The river basins will provide hydroelectric and irrigations benefits in North Eastern Region including Sikkim and Jammu & Kashmir. If constructed, the total expected benefits of the projects in terms of addition to Hydropower potential and irrigation potential (CCA) would be 573 Mega Watts (MW) and 50,533 ha respectively. CWC has been carrying out above works as per proposed plan of the RBM Scheme.

### **(c) NWDA component under IWRDS**

2.36 As per National Perspective Plan (NPP) for Water Resources Development in 1980 envisaging inter basin transfer of water from surplus to deficit basins, National Water Development Agency (NWDA) was set up under the MoWR in 1982 for carrying out various technical studies to establish the feasibility of the proposals of NPP.

2.37 Based on the pre-requisite studies e.g. water balances for various sub-basins and diversion points in the country, storage / reservoir studies, topo-sheet & prefeasibility studies of link canal, NWDA identified 30 links (14 Himalayan and 16 Peninsular) for preparing Feasibility Reports (FRs). The implementation of projects would create an additional irrigation potential of approximately 35 million hectare and generate about 34000 Mega Watts (MW) hydropower, apart from the incidental benefits of flood moderation, navigation, drinking and industrial water supply, fisheries, salinity and pollution control etc

2.38 The Pre-Feasibility Report of all the 30 links have been prepared and circulated to the concerned State Governments by the NWDA. After survey and investigations, NWDA has prepared Feasibility Reports of 14 links under Peninsular Component and Feasibility Reports of 2 links and draft Feasibility Reports of 7 links (Indian portion) under Himalayan Component have been completed. DPRs were completed for Ken-Betwa, Damanganga-Pinjal and Para Tapi-Narmada (PTN) link, Post DPR (revision) works were carried out for Ken-Betwa and PTN Link, Pre

Feasibility Studies were completed for 15 intra-State links, DPRs of 3 Intra-State links were completed and Water balance Studies were updated for 26 Links.

2.39 The details of Budget allocations and expenditure incurred under the Scheme of River Basin Management, for the last three years is as under:

**Table 10: Budgetary Allocations and Expenditure under River Basin Management Scheme (Rs. in crore)**

BE 2017-18	RE 2017-18	Actual 2017-18 (upto 31.1.2018)	BE 2018-19
199.99	199.99	146.18	225.00

2.40 The details of expenditure incurred under this Scheme, during the last four years, as furnished by the Ministry, in its written submission, are as follows:

**Table 11: Details of Expenditure under River Basin Management scheme (Rs. in crore)**

River Basin Management	
Financial Year	Actuals
2014-15	155.54
2015-16	159.02
2016-17	175.50
2017-18 (up to 31.01.2018)	146.18

2.41 The Committee enquired about the various problems, encountered/faced in implementation of activities/ works under the RBM scheme, to which the Ministry replied following in its written submission:

“The various difficulties/problems encountered in the implementation of activities/works under the scheme are as follows-

**a) Brahmaputra Board**

- i) Unseasonal rainfall and high flood level of river Brahmaputra.
- ii) Due to difficulties in collection and transportation of boulders to work sites at Majuli Island from main land due to ban on blasting boulder quarries.



- iii) Disturbances by local organizations like ASSU, TMPK etc.
- iv) Shortfall due to non-availability of boulder following ban imposed by Hon'ble High Court of Meghalaya. Contracts have been closed.
- v) Delay in the construction of sluices due to unprecedented underground water problem in foundation construction. Foundation of the sluice has been modified by substituting Sheet piles instead of RCC Cut-off wall.
- vi) Due to poor response of bidders retendering has to be repeated.
- vii) Recession of the works of boulder spurs due to failure of the contractor to complete the works.

#### **b) IWRDS – CWC Component**

- i) Unseasonal rainfall and high flood level of river
- ii) Shortfall due to early rain
- iii) Resistance of local residents.
- iv) Disturbances by local Villagers, local organizations like ASSU, TMPK etc.
- v) Unavailability of forest clearances.
- vi) Shortage of staff.
- vii) Court case in respect of supply of Geo-bags for the Spurs is going on.
- viii) Poor response from the bidders
- ix) Change in Dam axis

#### **b) IWRDS – NWDA Component**

- i) Feasibility Reports (FRs) of Himalayan Component could not be completed due to international issue of Nepal/ Bhutan. FR of Kosi-Mechi link has not been initiated as it entirely lies in Nepal. Jogighopa-Teesta-Farraka (Ganga) is not being taken up as it is alternate to Manas, Snkosh, Teesta and Ganga (MSTG) rivers. However, draft FRs are ready for Indian Portion.
- ii) Resistance by local residents.
- iii) Lack of consensus among various States is a major hurdle in Interlinking of Rivers programme. In order to speed up the implementation of Interlinking of Rivers (ILR) Programme and to arrive at a consensus on the link proposals between the States, a 'Special Committee for Interlinking of Rivers', has been

constituted. A Task Force on Interlinking of Rivers have been constituted to assist Special Committee on ILR.”

2.42 When asked to explain the reasons for consistently increasing allocation under this Head, the Ministry, in its written submission, stated as under:

“Increasing allocation is as per works and action plan proposed by implementing agencies viz Brahmaputra Board, CWC component under IWRDS and NWDA component under IWRDS as per River Basin management scheme.”

2.43 On being asked further by the Committee about the measures taken to establish the River Basin Authority, the Ministry, in its written submission, stated:

“The second Administrative Reforms Commission in its 7th Report titled "Capacity Building for Conflict Resolution-Fiction to Fusion" recommended under Para 5.5(c) that River Basin Organisations (RBOs) should be set up for each inter-State river, as proposed by the Report of the National Commission for Integrated Water resources Development, 1999 by enacting a legislation to replace the River Boards Act, 1956. A Committee under Chairmanship of Shri Tejinder Singh Doabia, Former Judge of M.P. and J&K High Court gave its recommendation in 2012 in the form of Draft River Basin Management Bill. A Group of Officers constituted on 2.3.2017 to examine the report and suggest possible changes required in the draft River basin Management Bill to make it implementable. The First meeting of the Group of officers was held on 28.4.2017. Subsequently, a meeting was held on 25.07.2017 under Chairmanship of Secretary (WR, RD & GR) wherein experts and professionals of the subject matter participated for wider discussion on the provisions of the Bill. In this meeting, it was further decided to constitute a three member Group of Experts (GoE) under Chairmanship of Shri A.B. Pandya, Ex-Chairman, CWC.

The GoE so constituted held two meetings on 25.09.2017 and on 04.12.2017 and had a closer look on implementation of the Bill keeping in mind the experiences in the functioning of existing River Boards. The GoE have now submitted the finalised draft of the RBM Bill, 2017, which is under consideration of the Ministry.”

2.44 During the examination of Demands for Grants (2017-18), the Committee had deliberated upon the issue of early formation of the River Basin Authority and had recommended following:

“The Committee have been informed that the draft River Basin Management Bill is under examination by the MoWR, RD and GR -in consultation with different stakeholders. While deploring the delay made in formation of River Basin Authority, the Committee strongly recommend to establish the same at the earliest.”

#### D. DEVELOPMENT OF WATER RESOURCES INFORMATION SYSTEM (DWRIS)

2.45 Development of Water Resources Information System (DWRIS) is a Central Sector Scheme continuing from XII Five Year Plan. The Scheme aims for standardized National Water Information System with a network of data banks and data bases, improving data quality and processing capabilities through a national existing country wide network of 1598 Hydrological Observation Stations. In addition, it endeavours towards the creation of a credible data bases on Minor Irrigation Schemes by conducting the 5th Minor Irrigation census and pilot census of Major and Medium irrigation projects. Besides, scheme intends to create an integrated data bank to tackle coastal erosion in a scientific manner keeping in view the long term perspective and challenges of climate change. For these diverse activities, strengthening and modernization of the existing software and computer network system in Central Water Commission will be undertaken.

2.46 The Scheme of Flood Forecasting has been merged with the scheme from the Financial Year 2018-19. Under this component, it is aimed to create a robust Early Flood Warning System as a non-structural measure for flood management through a National Network. The Scheme also proposes to modernize the existing network by aiding data transmission in real time mode using satellite telemetry and thus enabling an improvement in lead time of flood forecast by use of modern day techniques and numerical models.

2.47 The Budget Allocations and Expenditure under the Scheme of DWRIS is as furnished below:

**Table 12: Budget Allocations for the scheme of DWRIS**

(Rs. in crore)

BE	RE	Actual	BE
2017-18	2017-18	2017-18	2018-19
210.00	115.00	84.00*	211.27

\*Tentative total expenditure as on 22.02.2018

2.48 When the Committee asked about the physical and financial targets fixed and achieved under the DWRIS scheme and extent of their achievements, the Ministry, in its written submission, stated:

a) **DWRIS - Hydrological observations including Snow Hydrology, Water Quality and Monitoring of Glacial lakes**

**Table 13: Targets and Achievements for the last five years**

Year	Percentage of achievements of physical targets	Percentage of achievements of financial targets	Reasons for Slow Progress
2013-14	47%	33.12%	Non engagement of work charged staff for Repair and Maintenance (R&M) of new sites
2014-15	100% with respect to upgradation, 71.1% with respect to new sites	32.78%	
2015-16	16%	94.77%	
2016-17	199%	74.76%	
2017-18	-	38.81% (up to December 2017)	

2.49 Elaborating further on the existing network of Hydrological Observation (HO) Stations, the representative of the Ministry informed the Committee during oral evidence as under:

"What is most important in water resources is water resources assessment. How do you assess how much water you have? This is done in many steps. First is, Hydrological Observation Stations. These are HO Stations of CWC. At present there are 878 stations and we are planning to put 720 more stations. What are these stations? They are gage, discharge, sediment and quality. Some complicated stations have all four. Minor stations have just gage and discharge. They are manned and run by the CWC. Basically, this is the bread and butter of Water Resources Ministry, just to measure how much water is there."

2.50 Further with regard to assessment of water in Dams of the country, the representative of the Ministry informed:

"It is very important to know how much water is there in our dams. What they do is, every Thursday, 91 major reservoirs which have about 65 per cent of the total holding capacity in India, the total capacity being 283 billion cubic meter – issue a bulletin to all the States as to how much water is there. That is basically for drought management and water management. They are now proposing to increase these reservoirs' monitoring from 91 to 121 so that it covers 80 per cent of India's reservoir capacity."

2.51 During the discussion when asked by the Committee as to why only 91 reservoirs have been covered so far out of 121 reservoirs, the Secretary explained the problem as follows:

"Sir, in physically manned stations, there is a gauge reader who reads the gauge. Still, there are large number of stations which are physically manned. Now, what is being done is that those stations are slowly being converted into a telemetry system based stations where the sensor will do the job. In several places, even these systems have problems. For instance, a sensor is installed in a river and after some distance, the river bends inside. In such cases, authentic and reliable data cannot be captured. Also there are issues of calibration of equipments and validation etc."

**b) DWRIS - Coastal Management Information System (CMIS)**

**Table 14: Targets and Achievements for the last five years**

Year	Percentage of achievements of physical targets	Percentage of achievements of financial targets	Reasons for Slow Progress
2014-15	0%	0.99%	Delay in administrative approval and expenditure sanction
2015-16	0%	4%	
2016-17	Tripartite MoU signed between CWC, IIT Madras and States	75.66%	
2017-18	Tripartite MoU signed between CWC, IIT Madras and States	58.9% (up to December 2017)	

2.52 With regard to the Coastal Management Information System, he further elaborated and informed the Committee as follows:

"Coastal management is also becoming an issue in coastal flooding and coastal areas. We presently have three coastal management information stations. In the three years we will add another five and in total we will have eight stations. All in all, we are basically trying to assess water in a better manner, more robust manner. We are trying to go for telemetry, what we call real time data acquisition system, hundred per cent but where the resources are held by States, most of the owners of dams are State Governments, we can only persuade them to go for real time data acquisition system. But we are trying to promote and trying to go hundred per cent telemetry."

c) **DWRIS - Data Bank and Information system**

**Table 15: Targets and Achievements for the last five years**

Year	Percentage of achievements of physical targets	Percentage of achievements of financial targets	Reasons for Slow Progress
2013-14	16.44%	16.44%	Delay in approval of work of reassessment of water availability. Transfer of establishment of National Water Informatics Centre (NWIC) to National Hydrology Projects (NHP) Scheme
2014-15	1.72%	1.72%	
2015-16	24.62%	24.62%	
2016-17	76.37%	76.37%	
2017-18	28.20%	28.20% (up to December 2017)	

d) **DWRIS - Strengthening of Monitoring Unit in CWC**

**Table 16: Targets and Achievements for the last five years**

Year	Percentage of achievements of physical targets	Percentage of achievements of financial targets	Reasons for Slow Progress
2013-14	70.67%	70.67%	
2014-15	84.28%	84.28%	

2015-16	87.07%	87.07%	Due to less no. of active projects
2016-17	86.64%	86.64%	
2017-18	54.8%	54.8% (up to December 2017)	

### Flood Forecasting

2.53 Central Water Commission (CWC) is entrusted with monitoring of flood situation in the country during monsoon by observing water levels/ discharges along the major rivers in the country and issuing flood forecasts to the local administration/ project authorities/ State Governments and the Home Ministry, Government of India; covering 166 low lying area/ cities and towns besides 60 reservoirs all over the country till December 2017. The network is spread on 19 Major River Systems viz. the Ganga and its tributaries, the Indus/ Jhelum, the Brahmaputra and its tributaries, the Barak, the Subarnarekha, the Brahmani and Baitarni, the Mahanadi, the East Flowing Rivers between Mahanadi and Pennar, the Mahi, the Sabarmati, the West flowing rivers (Kutch and Saurashtra), the Narmada, the Tapi, the West flowing rivers between Tapi to Tadri, the Godavari, the Krishna, the Pennar, the Cauvery in the East flowing between Pennar and Kanyakumari, covering 20 States viz. Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chattisgarh, Gujarat, Haryana, J&K, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Tamilnadu, Telangana, Tripura, Uttarakhand, Uttar Pradesh and West Bengal and one Union Territory of Dadra and Nagar Haveli and National Capital Territory of Delhi.

2.54 With regard to adequacy of the flood forecasting network, the Committee have been informed that the flood forecasting services of CWC rests on primary premise that such services are requisitioned by State Governments and depending upon the technical feasibility of forecasting at such location & availability of funds, such services are included in plan proposals of CWC. The network is proposed to be expanded from 226 to 325 by covering additional 3 States.

2.55 As per the Ministry's written submission, the following works/activities were undertaken under the scheme of flood forecasting during the last three years:

- "1. Repair and Maintenance (R&M) of existing 175 Flood forecasting and 533 base stations was carried out successfully.

2. Modernization of 629 stations by installation of telemetry was planned. Work was awarded for 518 stations and out of this telemetry installed on 65 stations.
3. Setting up of 100 new Flood Forecasting (FF) stations was planned against which 24 new FF stations were opened.
4. Development of Rainfall based hydrodynamic flood forecasting models for 19 basins in country, thereby covering all 275 FF stations was planned. 171 Flood forecasting stations have been covered under rainfall based hydrodynamic flood forecasting models.

The major reason for the shortfall was late approval of the scheme in late 2015-16".

2.56 Further on being asked by the Committee about the Actual Expenditure incurred under this scheme, during the year 2017-18, the Ministry in its written reply, stated:

"An expenditure of Rs.28.63 crore has been incurred in the Financial Year 2017-18 up to 31.01.2018".

2.57 In response to a query by the Committee about the measures taken to upgrade, expand and improve the qualitative and quantitative aspects of flood forecasting in India, the Ministry submitted the following information in its written reply:

"In respect of the qualitative up gradation, expansion & improvement of flood forecasting, rainfall-runoff technique based basin-wise mathematical models have been developed for all major 19 basin in the country. During monsoon 2017 period, 3-day flood forecasts from these models were also shared on an online portal for qualitative trend analysis for disaster managers. Inundation forecast is also planned.

In respect of the quantitative up gradation, expansion & improvement of flood forecasting, under XII Plan, 51 new flood forecasting stations out of 100 planned have been added and remaining 49 are likely to be added during monsoon 2018. Additionally beyond XII Plan under three year Plan (2017-18 to 2019-20), 50 new flood forecasting stations & 125 flood monitoring stations have been proposed to be added".

2.58 When asked about the status of the working of flood forecasting infrastructure/network and technique in India when compare with the international standards, the Ministry, in its written submission, stated as under:



"Present flood forecasting infrastructure/ network and technique in India is comparable with the international standards and details of the same with respect to the activities of flood forecasting are as below –

I) Data collection – The modernization of flood forecasting activities in CWC with installation of telemetry system (Remote data collection through sensors and transmission through antenna) was started in IX Plan on pilot basis in Chambal and Mahanadi basin for covering 55 stations. Modernization continued in X Plan with installation of telemetry systems covering 168 stations in six river basins. During XI plan, 222 telemetry stations have been installed in different river basins. Installations of such modern data collection system continued during XII Plan under which 523 telemetry station are planned to be installed and out of these 65 have been installed.

II) Forecast formulation – Apart from the conventional gauge to gauge correlation between base station (upstream of forecasting station) and forecasting station which gives lead time upto 24 hours, use of modern mathematical modeling technology for forecast formulation has also been adopted. It involves mathematical modeling of river basin based on rainfall runoff methodology. Input taken is rainfall provided by Indian Meteorological Dept (IMD) through Automatic Weather Station (AWS), Automatic Rain Gauge (ARG), from telemetry network of CWC and 3 day Quantitative Precipitation Forecast (QPF) from IMD. This method provides advance flood warning for a period of 3 days.

III) Flood forecast Dissemination – Formulated flood forecasts are disseminated to various stakeholders at the earliest through email/SMS/fax/wireless. For information of general public flood information is also uploaded in CWC flood forecasting website (<http://india-water.gov.in/ffs>) as well as in Google Public Alerts webpage (<https://www.google.org/publicalerts>). Flood advisories generated through mathematical modeling are also disseminated through online portal during monsoon".

2.59 When the Committee asked further about development of Mathematical models for inundation forecast for Mahanadi/Brahmaputra/Kosi/Sabri river basins using the digital elevation maps available with National Remote Sensing Centre (NRSC), the Ministry, in its written reply, informed the following:

"In this regard high resolution Digital Elevation Map (DEM), worth Rs 4.65 cr was purchased from NRSC for the Mahanadi delta region covering area of 7749 Sqkm. 2D inundation model was run using the purchased DEM to generate various

inundation scenarios. Since tidal data as well as satellite imageries are not available, model calibration and validation are still to be finalised.

Development of Mathematical model for giving inundation forecast of Brahmaputra/Kosi/Sabri river basins requires high resolution DEM data as well as river bathymetry data which will be available after detailed survey of the area".

## **E. DAM REHABILITATION AND IMPROVEMENT PROGRAMME (DRIP)**

2.60 Dam Rehabilitation and Improvement Programme (DRIP) has been taken up with World Bank Assistance as a part of continuous strengthening of dam safety activities in India. Provision under this scheme is for CWC and Damodar Valley Corporation (DVC) components.

2.61 Dam Rehabilitation and Improvement Programme (DRIP) aims at rehabilitation and improvement of about 223 large dams in four States (Madhya Pradesh-50, Odisha-38, Kerala-31 and Tamil Nadu-104) with World Bank funding. The total project cost is about Rs. 2,100 crore and has become effective from 18th April, 2012 for implementation over a period of six years. The revised year of closure is June 2020.

2.62 The Budget Allocations and Actual Expenditure under this scheme is:

**Table 17: Budget Allocation and Expenditure under the scheme of Dam Rehabilitation and Improvement Programme**

(Rs. in crore)

<b>BE</b> 2017-18	<b>RE</b> 2017-18	<b>Actual</b> <b>2017-18</b> <b>(up to February 2018)</b>	<b>BE</b> 2018-19
160.00	95.00	50.00	124.00

2.63 Regarding implementation of DRIP, the Secretary, informed the Committee during the oral evidence held on 23.02.2018 as under:

"Sir, we have a big programme of dam rehabilitation. Currently a World Bank assisted programme for Rs. 2,100 crore is going on but it is not reflected in the Budget because that money directly goes to States. In our Budget, allocation for only CWC and DVC is reflected. Day before yesterday, the Screening Committee has approved DRIP II programme for Rs. 8000 crore. Budget does not reflect that

because money is not routed through the Ministry of Water Resources Budget except for CWC and DVC."

2.64 Regarding implementation of DRIP, the Committee in their 16th Report on Demands for Grants (2017-18), observed the following:

"Ministry should speed up the work so that the project is completed by 2018, as assured by the Secretary.

The Committee further observe that the legislation on Dam safety has been delayed by a considerable time, despite their Report on the Bill, way back in 2011. They note that currently, the National Dam Safety Bill, 2016 is being prepared and consultation with States is going on. They, therefore, recommend the Ministry to wind up the process at the earliest and take speedy measures for its enactment".

2.65 During the oral evidence of the Ministry, the Committee were also informed that there are 5200 dams in India and 450 Dams are under construction.

2.66 On the issue of legislation on Dam Safety, the Secretary, during the course of oral evidence, informed the Committee following:

"we have got the best dam experts in the world working in India today. Organisations like the USBR, Deltares, World Bank, JICA, Spanish Dam, and Icold are working. There is a concept of emergency action plans, which are basically seismic study of all dams. Now, because we do not have institutional and legal architecture for dam safety in India it is a matter of concern. When the dams were built they were built in remote locations. Today, dams have populations in the vicinity and also downstream. If a dam were to break, it will cause a major disaster. The Government of India is mindful of this and we are trying to bring in a legislation called Dam Safety Act."

## **F. RESEARCH AND DEVELOPMENT AND IMPLEMENTATION OF NATIONAL WATER MISSION**

2.67 The erstwhile XII Plan schemes of (i) Research and Development and (ii) Implementation of National Water Mission have been merged during appraisal assessment of continuing schemes from the XII Plan. The revised name of the scheme is Research and Development and Implementation of National Water Mission.

2.68 Under this scheme provision has been made for research and development to provide educational training and human resources development programmes in the water sector, and implementing Schemes/Projects for conservation of water, minimizing of wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management through National Water Mission.

2.69 National Water Mission (NWM) has been established under the National Action Plan on Climate Change (NAPCC). The main objective of NWM is conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management.

2.70 National Water Mission, MoWR, RD&GR has awarded

- Twenty six Baseline studies in respect of Major-Medium Irrigation projects for improving Water Use Efficiency (WUA) in Irrigation Sector covering five States - Assam, Manipur, Andhra Pradesh, Telangana, Maharashtra and Kerala.
- Bench marking Study to The Energy & Resources Institute (TERI), New Delhi to establish benchmarks 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 and Paper and Steel Industries in the phase-II.
- Pilot Project on "Grey Water to Blue Water - Natural Treatment Techniques for Transforming Wastewater into Sustainable Useable Water" under Goal-IV. The project is being executed by National Institute of Hydrology, (NIH), Roorkee in collaboration with IIT, Bombay and Utrakhand Jal Sansthan (UJS), Government of Utrakhand, Dehra Dun.

2.71 The various activities under taken/being under taken in NWM are

- (i) NWM has taken up preparation of State Specific Action Plan for water sector (SSAP-Water) of 11 States (Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, West Bengal, Arunachal Pradesh and

Uttarakhand states) to be formulated based on scientific assessment of the supply and demand side of water resources, quality challenges and vulnerability to climate change.

(ii) Two National Level Workshops and about ten Brainstorming sessions were organised for preparation of Template for the first stage report i.e. State-Water Budget. The template for preparation of first stage report of SSAP-Water i.e. State Water Budget which was discussed and finalised in the National Consultation held on 23-10-2017. States have been asked to submit the draft report by January, 2018 as per the template circulated by NWM.

(iii) Twenty six baseline studies for improving water use efficiency for irrigation projects have been taken up in Major/Medium Irrigation projects located in six States viz Assam, Manipur, Telangana, Andhra Pradesh, Maharashtra and Kerala. Draft inception Reports of 24 Projects were discussed in four Core-group meetings and inception reports are in final stages of submission. The implementing Organizations are advised to expedite the studies.

(iv) A Study on establishing benchmarks for industrial water use in two industrial sectors i.e. Thermal power plants and Textile Industry has been taken up. The study is in final stage.

2.72 The Budget Allocations and Expenditure under the Head National Water Mission is:

**Table 18: Budget allocations for the scheme of National Water Mission**  
(Rs. in crore)

<b>Actual</b>	<b>BE</b>	<b>RE</b>	<b>BE</b>
2017-18	2017-18	2017-18	2018-19
0.69*	15.00	5.00	20.10

\* Up to 31.01.2018

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2.73 When asked by the Committee to state the reasons for under utilization of resources under the National Water Mission, the Ministry in its written reply, stated as under:

"The mandate and objectives of the National Water Mission are all pervasive and needs intensive coordination with other Ministries, State Governments and other organizations. The staffing of the NWM has not been adequate and no full time Mission Director has been appointed resulting in slower pace of expenditure".

2.74 The Ministry in their preliminary material on Demands for Grants (2018-19) informed the Committee that since 2013-14, various objectives of NWM could not be achieved as works under the scheme could not be taken up due to shortage of staff at NWM. The Committee had taken note of staff problem in NWM and had recommended in their Sixteenth Report on Demands for Grants (2017-18) that the *Ministry should have a permanent solution for having adequate staff in the National Water Mission (NWM) directorate so that there is no further delay in achieving the goals of National Water Mission (NWM) due to informal arrangements, outsourcing and redeployment of staff.*

2.75 One of the Goals of National Water Mission is increasing water use efficiency by 20 per cent. In this regard, the Secretary, Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR,RD&GR) during the course of oral evidence informed the Committee that irrigation is the biggest consumer of fresh water, consuming about 80 per cent of overall demand of water. However, Water Use Efficiency in agriculture is only 38% which is very low. Further farmers are also not eager to use water judiciously as they get its assured supply through tubewells, pumps etc. run on free electricity in many States.

2.76 The Committee were informed that proposed setting up of National Bureau of Water Use Efficiency (NBWUE) is yet to be implemented. In this regard, the Ministry, in their action taken reply on observations/recommendations contained in the 16th Report on Demands for Grants had informed that *the proposal is being reconsidered as part of Integrated Water Management Efforts. A holistic review of the scheme including in relation to National Bureau of Water Use Efficiency (NBWUE) is being undertaken as appraisal and approval process for the remaining period of 14th Finance Commission period.*

2.77 While enlightening the Committee about the need for setting up National Bureau of Water Use Efficiency, to ensure efficient utilization of water, the Secretary submitted:

"Sir, implementation was less, but it had a purpose. Earlier, a Bureau of Water Use Efficiency was to be set up. As in the case of Bureau of Energy Efficiency (BEE), it had just promotional role. Later on, it got the regulatory role as well. Today, BEE fixes that target that this is the consumption level and from now onwards, within three years, you have to reach a certain level. Otherwise, either you have to give penalty or will receive incentive. Here, also, idea was to set up a Bureau of Water Use Efficiency and set benchmarks for every sector. Unfortunately, this kind of Bureau has not been set up."

2.78 However, the representative of the Ministry, during the evidence stated the following with regard to the setting up of National Bureau of Water use efficiency:

"With regard to the water use efficiency, as I submitted, the National Bureau of Water Use Efficiency, that has been our initiative at the highest level, presently it was not taken up."

2.79 On this issue, the Secretary, (MoWR,RD&GR) during the course of oral evidence held on 23.02.2018 further informed that in the proposed restructuring of Central Water Commission and Central Ground Water Board, the inclusion of National Bureau of Water Use Efficiency as one of the parts of the proposed National Water Commission is being discussed.

## CHAPTER III

### CENTRALLY SPONSORED SCHEMES

#### A. PRADHAN MANTRI KRISHI SINCHAI YOJANA (PMKSY) - Har Khet Ko Pani (HKKP)

3.1 Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was launched in 2015-16 with an aim to enhance physical access of water on farm and expand cultivable area under assured irrigation, improve on farm water use efficiency, introduce sustainable water conservation practices etc. PMKSY- Har Khet Ko Pani (HKKP) is one of the component of PMKSY. The Scheme of Surface Minor Irrigation (SMI) and Repair, Renovation and Restoration (RRR) of Water Bodies Scheme are now part of PMKSY (HKKP).

3.2 Apart from this, the release of grants to National Water Development Agency (NWDA) for debt servicing of NABARD loan under Long Term Irrigation Fund (LTIF) is also included under HKKP.

3.3 The Long Term Irrigation Fund (LTIF) has been made available for 99 priority projects under AIBP which earlier languished due to lock of funds along with their Command Area Development and Water Management (CADWM) works and Polavaram multipurpose irrigation project.

#### **(a) Accelerated Irrigation Benefits Programme (AIBP) – 99 ongoing priority projects**

3.4 During 2016-17, Ninety Nine (99) on-going Accelerated Irrigation Benefits Programme (AIBP) Major/Medium projects along with their CADWM works having potential of 76.03 lakh ha. and estimated cost of Rs. 77,595 cr. have been identified in consultation with States, for completion 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.

3.5 AIBP works of 18 prioritized projects are complete/almost complete. Further, during 2017-18, AIBP works of 33 prioritized projects are targeted to be completed.



3.6 Under AIBP - 99 priority projects, irrigation potential of more than 4 lakh hectare has been created during 2016-17. Under this programme, irrigation through Piped Distribution Network (PDN) is being encouraged.

3.7 During oral evidence, when the Committee asked about the monitoring mechanism to oversee the execution of these 99 priority projects under AIBP, the Secretary, (MoWR,RD&GR) submitted:

"Sir, there are two-three different mechanisms. Sir, these are PMKSY projects and medium irrigation projects. The Monitoring Directorate at CWC monitors these projects. Besides, there are 13 field offices where there are chief engineers and have Monitoring Directorate. This time, a separate Project Management Unit has been created for PMKSY. We have also created a dash board to get the details of each project only. Only one part of the problems is funding but problems related to irrigation are much more serious. Sometimes, there are problems of land acquisition, sometimes, railway crossing or road crossing."

**(b) Surface Minor Irrigation (SMI) works and Repair, Renovation and Restoration (RRR) of Water Bodies**

3.8 Under the Head PMKSY- Har Khet Ko Pani (HKKP) the scheme of Surface Minor Irrigation (SMI) and Repair, Renovation and Restoration (RRR) of Water Bodies Scheme are included. The Budget Allocations and Expenditure under this Head is shown as follows:

**Table 19: Budget Allocations under HKKP**

**(Rs. in crore)**

<b>Actual</b>	<b>BE</b>	<b>RE</b>	<b>BE</b>
2017-18	2017-18	2017-18	2018-19
448.50*	1450.00	1888.00	2600.00

\* Expenditure for SMI/RRR scheme only

3.9 The Repair, Renovation and Restoration (RRR) of Water Bodies Scheme under PMKSY-HKKP provides for assistance to State Governments for RRR of water bodies. Further, Surface

Minor Irrigation (SMI) schemes with irrigation potential of less than 2000 hectare are also included under PMKSY- HKKP. As per the Guidelines, individual schemes having Culturable Command Area (CCA) of more than or equal to 10 hectare or cluster of MI schemes within radius of 5 Km having CCA of 20 hectare or more in the 'Special Category States' and Individual schemes having CCA of more than or equal to 20 hectare or cluster of MI schemes within radius of 5 km having total CCA of 50 hectare or more in 'Non-Special Category States' are considered for inclusion under this SMI scheme. The development cost per hectare of CCA of individual scheme is required to be less than Rs. 2.5 lakh in both the categories.

3.10 When asked by the Committee about the reasons for substantial increase in allocation under this Head in the RE 2017-18, the Ministry, in its written submission have stated as under:

"A total amount of Rs. 448.50 cores out of Rs.450 cores allotted for SMI/RRR in BE 2017-18 has been released so far. There are sufficient number of ongoing pending proposals for SMI/RRR of Water bodies schemes for which the Central Assistance could not be released due to budget constraints. These proposals are expected to be received in the Financial Year 2018-19 also. Therefore, it is necessary to increase budgetary allocation during the current year in RE 2017-18 and FY 2018-19. An additional budget of Rs.295 crore has been provided in RE 2017-18 (BE 2017-18 is Rs. 450 crore and RE 2017-18 increased to Rs.745 crore). Further, an increase in of Rs.1310 crore has been made in BE 2018-19 under grants to NWDA for loan repayments to NABARD vis-à-vis BE 2017-18, based on likely payments projected by NABARD/NWDA".

3.11 Asked about the amount of total allocation made for SMI and RRR scheme in the year 2018-19, the Ministry, in its written submission, have stated as under:

"Combined outlay for SMI and RRR of Water Bodies scheme is made available under PMKSY (HKKP).Utilisation of these funds is made based upon proposals received for both the schemes. Combined allocation for 2018-19 at BE level is Rs.300 crore."

3.12 When the Committee desired to know about any survey being conducted on the encroached water bodies in the country, as recommended by them in their Tenth Report (16<sup>th</sup> Lok Sabha), the Ministry, in its written submission, stated as follows:

"The planning, execution and maintenance of water resources project comes under the purview of concerned State Government. This Ministry provides technical and financial assistance to State Governments to encourage sustainable development and efficient management of water resources through various schemes and programmes. However, as recommended by the Standing Committee it is now proposed to have a detailed census of all the water bodies in the next Minor Irrigation Census (VI) by MoWR, RD & GR as current minor irrigation census is almost complete. However, even in current census (V) information on number of water bodies (irrespective of whether they are being used for irrigation or for any purpose) in villages-rural areas is being collected. Further, for expanding the scope of Census to urban areas, views of concerned State Government Departments and other Central Line Ministries will be taken during the preparatory work of VI Census. Secretary (MoWR, RD & GR) vide D.O. letter dated 26.02.2016 requested to take several measures for protection of water bodies including encroachment issue. The information from the States are awaited in this regard. The States have been again requested to intimate the status on the number of water bodies and its encroachment vide D.O. letter dated 07.11.2016 from Secretary (MoWR, RD & GR) to the Chief Secretaries of the States. The matter would be pursued further with the States to expedite the information. Studies related to encroachment are not funded through RRR of water bodies scheme as such and are done by States as per their requirements. However, water bodies are considered under RRR programme after State Government gives certificate that they are encroachment free."

3.13 Asked further about the measures taken to strengthen monitoring mechanism for protection and conservation of water bodies, the Ministry furnished the following reply:

"Such action comes under purview of State Governments. However, 'Draft guidelines for Conservation and Protection of Water Bodies' have been circulated to the Central Ministries and State/UTs."

3.14 In reply to a further query by the Committee about the measures taken for abatement of pollution in water bodies, the Ministry, in its written reply, have stated as under:

"Such measures are not part of scheme. However, as intimated by CPCB, they have made a nationwide survey through questionnaire to the State secretaries, municipal corporations, State water boards, municipalities, public health engineering department, pollution control boards and also other concerned agencies to obtain information/data on water supply, waster water generation, collection, treatment and disposal in class-I cities, metropolitan cities and Class-II towns. Based on the information a report on "Status of Water Supply, Wastewater Generation and Treatment in Class-I Cities & Class-II Towns of India" under CUPS series no. CUPS/70/2009-10 was published. CPCB reported that out of 38254 MLD

of sewage generated by Class- I cities and Class-II towns , only 11787 MLD has been treated. CPCB reassessed sewage generation and treatment capacity for Urban Population of India for the year 2015. The sewage generation estimated as 61948 MLD and sewage treatment capacity developed so far is 23277 MLD. Based on the above study, CPCB has issued directions u/s 181(b) of Water (Prevention and Control of Pollution) Act, 1974 vide letter dated 21.04.2015 to all State Pollution control Board/Pollution Control Communities to make mandatory for local/urban bodies to set up STPs of adequate capacity and provide underground sewerage system to cover the entire local/urban areas and to bridge the treatment gap."

3.15 In response to another query on the proactive measures taken by the Ministry to save and restore the water bodies in Bengaluru which are frequently affected by pollution, the Ministry stated:

"Such measures comes under the purview of State Governments. However, action taken by CPCB have been mentioned in reply as stated above."

#### **More Crop Per Drop - Micro Irrigation**

3.16 During the discussion a query was raised by the Committee about the measures taken by the Government to ensure 'more crop per drop' along with increase in water availability. To which, the Ministry, in its written submission, furnished following reply:

"As CADWM works are now being funded through LTIF in relation to identified 99 projects, HKKP allocations are now intended only for creation of irrigation potential under SMI and RRR of Water bodies, based on proposals submitted by the States. However, efficient use of irrigation potential created is partly taken care by command area works by states and also covered under PMKSY component of Ministry of Agriculture and Farmers Welfare, where micro irrigation is encouraged".

3.17 On being questioned as to what measures were taken to expand micro irrigation through drip and sprinkler methods, the Ministry, in its written submission, stated:

"The Central Assistance under CADWM is released to the projects against Structural and Non Structural components. The micro irrigation is a part of the overall Structural component allocation."

**Table 20: Details of Central Assistance released during last 3 years under CADWM:**

<b>Year</b>	<b>2014-15</b>	<b>2015-16</b>	<b>2016-17</b>	<b>2017-18</b>
Central Assistance released (Rs. in Cr.)	199.99	1142.71	853.96	591.65#

# Till now".

3.18 When asked about the total area covered under micro irrigation in 99 Prioritized Projects of AIBP till date, the Ministry in its written submission, informed the following:

"The extent of coverage of Micro irrigation under 99 prioritised projects against the CA released during 2016-17 and 2017-18 is yet to be furnished by the State Governments".

3.19 Further asked about the likely setting up of proposed Micro Irrigation Fund with NABARD with an initial corpus of Rs. 5,000 crore, the Ministry in its written submission, informed as under:

"The implementation of Micro Irrigation Fund (MIF) is with the Ministry of Agriculture and Farmers Welfare. As per the information available, the same has not yet been set up".

3.20 The Committee desired to have the details of the proposed "Incentivisation Scheme for Bridging Irrigation Gap (ISBIG)". On this, the Ministry, in its written submission, stated:

"Since the ongoing CADWM programme has now been restricted to implementation of CAD works of 99 prioritized AIBP projects, the outstanding CADWM projects are proposed to be implemented through a new "Incentivisation Scheme for Bridging Irrigation Gap (ISBIG)". The EFC note of the scheme has been circulated by Ministry, and EFC meeting is expected to be held shortly.

The scheme aims for:

- (a) Completion of CADWM works along with correction of system deficiencies in canal network for bridging the gap between Irrigation Potential Created (IPC) and Irrigation Potential Utilised (IPU);
- (b) Improving the water use efficiency in irrigation and providing assured supply of water to every farm field; and

(c) Transfer of control and management of irrigation system to the Water Users' Associations (WUAs).

The above aims will be achieved in about 317 existing water resources projects of 24 States. The CADWM works are targeted in about 80 lakh hectare of the balance Culturable Command Area [CCA] of these projects, while the correction of system deficiency will benefit their entire 178 lakh hectare of CCA. The total cost of the scheme is Rs 61237 crore for completion in 48 months".

3.21 During the Study Visit of the Committee to Odisha, the Chief Secretary, State Government of Odisha informed that early implementation of ISBIG Scheme would greatly help the State Governments to start work on irrigation projects which are not included in 99 Priority Projects of AIBP.

3.22 In response to a further query about efforts made by the MoWR, RD&GR to increase the use of modern technology in irrigation and to what extent these were successful in increasing efficiency of water use in agriculture, the Ministry, in its written submission, stated:

"The MoWR, RD&GR has initiated the enhancement of Micro Irrigation with the Command Area Development and Water Management (CAD&WM) scheme. Infrastructure for micro-irrigation as a replacement of conventional on farm development works is included with the intent of improving water use efficiency. Planning of micro-irrigation should ensure maximization of the Culturable Command Area (CCA) beyond the areas under gravity flow, assured irrigation to tail enders, and supply of water in volumetric basis. In addition, Ministry is also encouraging use of underground pipe (UGPL) network in place of conventional field channels, wherever feasible".

3.23 When asked about the financial assistance given/proposed to be given by the Government to farmers for installing drip and sprinklers, the Ministry in its written submission, stated:

"The devices – such as Sprinkler / Drip sets needed to be installed by individual farmers below farm outlets, are not part of the micro-irrigation infrastructure component covered under CADWM programme. Farmers are expected to bear the cost of such devices or avail subsidies available in extant scheme of the Ministry of Agriculture".

## B. FLOOD MANAGEMENT AND BORDER AREAS PROGRAMME

3.24 The Scheme titled “Flood Management and Border Areas Programme (FMBAP)” is a continuing Scheme by merging the existing State sector scheme “Flood Management Programme (FMP)” and the Central sector scheme “River Management Activities and Works related to Border Areas (RMBA)”; two schemes existing during XII Five Year Plan. The FMBAP is now proposed to be a Centrally Sponsored Scheme comprising of the following two components:

### Flood Management (FM) Component:

SI. No.	Sub-components
1-A	Spillover portion of works already approved under Flood Management Programme during XI & XII Plan.
1-B	New flood management works proposed by the State Governments during 2017-20 towards river management, flood control, anti-erosion, drainage development, flood proofing, restoration of damaged flood management works and anti-sea erosion works.

### River Management and Works related to Border Areas (RMBA) Component:

SI. No.	Sub-components
2-A	Hydrological Observations and flood forecasting on common border rivers with neighbouring countries:
2-A.1	Flood Forecasting on rivers common to India and Nepal.
2-A.2	Hydrological Observations on rivers originating in Bhutan.
2-A.3	Joint observations on rivers common to Bangladesh and neighbouring countries.
2-B	Investigation of Water Resources Projects in neighbouring countries:
2-B.1	Pancheshwar Multipurpose Project.
2-B.2	Surveys & Investigation of Kosi High Dam
2-C	Pre-construction activities for water resources projects on common border rivers – Pancheshwar Development Authority (PDA).
2-D	Grant-in-Aid to States/ UTs for flood management/ anti-erosion/anti-sea erosion works:
2-D.1	Maintenance of flood protection works of Kosi & Gandak projects (in Nepal).
2-D.2	Flood Protection/ anti-erosion works in border areas with Bangladesh and

	Pakistan and flood management/ anti-erosion works/anti-sea erosion works in Union Territories (UTs).
	Flood protection/ anti-erosion works in border areas with Bangladesh & Pakistan, UTs
2-E	Continuation of Ganga Flood Control Commission (GFCC)

3.25 When asked about the details of works / activities being taken / implemented under the Flood Management Programme along with the targets and achievements during the last five years, the Ministry in its written reply stated the following:

"In October, 2013, the Cabinet approved continuation of Flood Management Programme (FMP) for XII Plan with an outlay of Rs. 10,000 crore for spillover works of XI Plan and new works and the scope was extended to include projects of catchment area treatment having objective of flood management. An amount of Rs. 5023.07 crore has been released as Central Assistance to States under FMP since XI Plan, which includes Rs.1307.07 crore released during XII Plan. The budgetary allocations were however less.

A total of 522 flood management works were approved and included under FMP during XI & XII Plan. 298 schemes were completed as on 31.03.2017, which includes 46 schemes completed during XII Plan. The completed projects have provided reasonable degree of protection to an area of 34.66 lakh ha. and population benefitted is 265.79 lakh.

3.26 In response to a query on the magnitude of flood damage in India, the Ministry in its written submission furnished following information:

**Table 21: Magnitude of flood damage during the period 1953 to 2016**

S.No.	Item	Unit	Average Annual Damage	Maximum Damage	
				Extent	Year
1.	Area affected	mha.	6.95	17.50	1978
2.	Population affected	Million	31.34	70.45	1978
3.	Human lives lost	nos.	1626	11316	1977
4.	Cattle lost	nos.	92992	618248	1979



5.	Cropped area affected	mha	3.72	12.30	2005
6.	Damage to crops	Rs. Crore	1354.09	13816.76	2015
7.	Houses Damaged	nos.	1189691	3507542	1978
8.	Damage to houses	Rs. Crore	667.45	10809.80	2009

3.27 On being asked by the Committee as to what extent the flood management programme has been successful and the problems faced in implementation of this programme, the Ministry, in its written submission, informed:

"The objective under the programme is to assist the State Governments to provide reasonable degree of protection against floods in critical areas by adopting optimum combination of structural and non-structural measures and enhancing capabilities of State / Central Government officials in related fields. These completed projects have provided reasonable degree of protection to an area of 34.66 lakh ha and population benefitted is 265.79 lakh.

The Outcome Review/ Third Party Evaluation Committee in its report has observed that in most of the projects, the financial progress shown is in the range 10 to 30 % and the physical progress is typically more than 80%. Thus, the financial progress is very low due to issues with release of funds. Since the allocation of funds is small and reducing, it would be more prudent to fund those schemes which require smaller Central Assistance.

The allocation of funds under FMP during XII Plan has been decreasing continuously after devolution of central taxes on the recommendations of 14th Finance Commission. The physical/financial completion of remaining 224 projects is reportedly languishing due to gradually declining and insufficient budgetary allocation under FMP. In order to accelerate completion of these languishing flood management projects, the central share required for completing the on-going projects under FMP would be required. The budgetary allocation under FMP for FY 2016-17 & 2017-18 has however, been a meager Rs 149.99 crore & Rs. 150.0 crore respectively, which is grossly inadequate".

3.28 As regards the short term, medium term and long term measures taken to manage and control recurrent floods in the country, the Ministry in its written submission, stated as under:

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

Permanent immunity against floods is not techno-economically feasible. However, impacts of floods can be mitigated to a reasonable degree by adopting appropriate structural and non-structural measures.

Government of India through CWC is running and maintaining an elaborate network of flood forecasting stations through which advance flood warnings are issued to the concerned agencies. The inflow forecasts into the reservoir issued by CWC are utilized by the project authorities in proper operation of reservoirs in order to mitigate flood impact in the downstream areas. This has been immensely beneficial.

A Model Bill for Flood Plain Zoning was prepared by CWC way back in 1975 and circulated to all States/Union Territories. The Bill was again circulated in October, 1996. The States of Manipur, Rajasthan and Uttarakhand have enacted legislations for the Bill and initial actions have been taken by the State of Uttarakhand.

The response from the State Governments towards enactment of flood-plain zoning legislation has not been encouraging. This Ministry has repeatedly impressed upon the State/ UT Governments in this regard. Vide D.O. letter dated 28.01.2014 by Additional Secretary, MoWR, the State Governments have again been requested to enact flood plain zoning legislation. Views have not been received from States/UTs except the State of Bihar. Bihar Government has conveyed vide letter dated 13th March 2014 that Flood Plain Zoning Bill is neither practicable nor implementable in the State of Bihar. The Ministry has again impressed upon the State/ UT Governments vide Hon'ble Minister (WR, RD & GR) D.O. letter dated 08.02.2017. Views have not been received from any States/UTs.

Long-term solution to the problem of flood also lies in construction of multi-purpose projects with flood cushion in the upper reaches of the rivers in order to attenuate high flood intensity. Government of India is having continuous dialogue with the Government of Nepal at various levels to mitigate devastation caused by the flood havoc from the rivers coming from Nepal. Preparation of DPR for Pancheshwar Multipurpose Project on river Sarada, Sapta Kosi High dam Project and Sun Kosi Storage-cum- Diversion scheme proposed in the Sapta Kosi basin in Nepal has been undertaken jointly by India and Nepal.

The States are normally under compulsion to store water for non-monsoon period and generally do not resort to timely pre-depletion of reservoirs even when required the most. The carrying capacity of the rivers downstream of dams, has reduced considerably over the years due to large scale encroachments. Reservoirs on rivers are generally owned and managed by different agencies without considering other reservoirs and downstream flood condition. Hence operation of a set of reservoirs through a unified command becomes imperative. In this regard, CWC has carried out basin-wise study for integrated operation of select reservoirs and communicated to the State Governments".

3.29 The Budget Allocations and Expenditure under this Programme is as given in the table below:

**Table 22: Budget Allocations under the Flood Management and Border Areas Programme**

(Rs. in crore)

<b>Name of the Programme</b>	<b>BE</b>	<b>RE</b>	<b>Actual</b>	<b>BE</b>
	<b>2017-18</b>	<b>2017-18</b>	<b>2017-18</b>	<b>2018-19</b>
Flood Management Programme	150.00	562.68	150.00*	-
River Management Activities and Work related to Border Areas	199.96	202.96	115.73*	-
Flood Management and Border Areas Programme	-	-	-	527.00

\* up to 31.01.2018

3.30 Funding pattern of the FBMAP as furnished by the Ministry in its written reply, is as follows:

"The proposed funding pattern of FMBAP in the EFC memo uploaded on the EFC portal is as under:

For Flood Management Programme component:

The State Government would be provided Central Assistance at 70% of the project cost for Special Category States, and at 50% for other States. The remaining amount shall be borne by the State Governments as State share.

For River Management Activities and Works related to Border Areas (RMBA) component:

This component is with 100% funding by the Central Government".

3.31 When queried, as to how the Ministry proposes to spend the allocations in the year 2018-19, the Ministry, in its written reply, stated the following:

"The increased allocation is to be utilized for minor works to be carried out by CWC, GFCC under FMBAP including their establishment expenditures. Besides, the amount has also been kept for meeting the expenditures on bi-lateral meetings with the neighbouring countries i.e. Bangladesh, Nepal, China and Bhutan".

3.32 On being asked to furnish the details of achievements made under the scheme of River Management Activities and Works related to Border Areas till date, the Ministry in its written reply, submitted:

"The activities under RMBA scheme are continuing activities viz. continuation of Joint Hydrological observations on river Ganga with Bangladesh, transmission of flood related data from / to neighbouring countries, preparation of Detailed Project Report of Pancheshwar Multipurpose Project by PDA, undertaking pre-construction works for Pancheshwar Multipurpose Project, preparation of DPR by Joint Project Office for Sapta Kosi High dam, Sun Kosi diversion cum storage scheme and Kamla dam project etc.

The Pancheshwar Development Authority (PDA) has been set up jointly by the two Governments in September 2014 and is functional. Further, draft final DPR of Pancheshwar Multipurpose Project has been prepared, which has been examined by various agencies in India and Nepal. The issues raised by both the sides are being discussed jointly by the Team of Experts/Officials (ToE) constituted by both the sides towards its finalization. The international commitment with regard to sharing of Ganga waters at Farakka between India & Bangladesh as per the Treaty signed between the two countries in 1996 is being successfully implemented. The exchange of flood related data between the neighbouring

countries have proved to be of immense utility for issue of flood warnings and preparedness".

3.33 On being asked by the Committee about the major activities/works taken up under this scheme during the last three years, the Ministry, in its written reply, submitted:

"The major activities under RMBA schemes during last three years are as under:

- Hydrological observations and flood forecasting on common border rivers with neighboring countries.
- Investigation of Water Resources Projects in neighboring countries.
- Pre-construction activities for Water Resources Projects on common border rivers – Pancheshwar Development Authority.
- Grant-in-aid to States /UTs for flood management/ anti erosion works along Kosi and Gandak rivers in Nepal, flood management/ anti erosion works along the border rivers with Pakistan and Bangladesh and flood management/anti-sea erosion works in the UT of Puduchery.
- Continuation of Ganga Flood Control Commission (GFCC)".

3.34 Further the Ministry in its Preliminary Material on Demands for Grants (2018-19) furnished the details of progress under this scheme during the last four years along with the reasons for the non-achievement of targets as follows:

**Table 23: Targets and Achievements under the scheme of RMBA for the last four years**

Year	Percentage of achievements of physical targets	Percentage of achievements of financial targets	Reasons for Slow Progress
2014-15	This scheme was approved in December, 2014. Saptakosi field investigation continued. Pancheshwar development Authority was set up in September 2014 and the works of updation /preparation of DPR was entrusted to WAPCOS	37.20	Security problems on Nepal side remained unresolved.
2015-16	This scheme was approved in December, 2014. Saptakosi field investigation continued. Pancheshwar development Authority was set up in September 2014 and	77.12%	
2016-17		63.29%	
2017-18		56.72% (as on 31.12.2017)	

	the DPR has been prepared by M/S WAPCOS Ltd. which is under finalization by both the sides.		
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3.35 When the Committee raised a query about the existing mechanism for bilateral talks with neighbouring countries for resolving water related issues from rivers across the border, the Secretary, informed the following during the course of oral evidence:

"There is a multi-tier mechanism for it. One is at the Ministry level. There is a Joint Committee at the Ministry level. Then there is another level of Joint Committee at the Secretaries level. Then there are various Committees. With Nepal, we have various Treaties. We have Gandak Treaty, Kosi Treaty of 1954, Mahakali Treaty, etc. For each agreement, we have High Level Standing Committee on Kosi which bilaterally discusses such issues."

## CHAPTER IV

### Central Ground Water Board (CGWB)

4.1 Central Ground Water Board (CGWB), is a multidisciplinary scientific Organization with a mandate to develop and disseminate technologies, monitor and implement national policies for the scientific and sustainable development and management of India's Ground Water resources including their exploration, assessment, conservation, augmentation, protection from pollution and distribution based on principles of economic and ecological efficiency and equity.

4.2 The Budget Allocations and Expenditure for CGWB for the years 2017-18 and 2018-19 are as follows:

**Table 24: Budget Allocations in respect of CGWB**

(Rs. in crore)

Actuals (2017-18)	BE (2017-18)	RE (2017-18)	BE (2018-19)
185.84	240.00	209.38	242.22

4.3 When asked about the reasons for increasing allocations under this Head during the year 2018-19, the Ministry, in its written submission, furnished the following reply:

“The main reasons for enhancement in allocation for 2016-17 & 2017-18 is due to the enhancement of salary and related component due to implementation of the recommendations of the 7th Pay Commission and shifting of salary components from Plan to Non Plan allocation.”

4.4 During the discussion when asked to furnish the major activities/programmes being undertaken by CGWB during the last three years and achievements, the Ministry, stated:

“The major activities/programmes being undertaken by CGWB during last three years up to Jan 2018 is as under:

**Table 25: Activities and Schemes undertaken by Central Ground Water Board**

Sl. No.	Major Activity	Item/Unit	Years			
			2014-15	2015-16	2016-17	2017-18 (Up to

						December 2017)
1	2	3	4	5	6	7
1.	<b>Compilation of Data &amp; Identification of Data Gap</b>	Lakh sq. km.	5.89	-	-	
2.	<b>Data Generation Activities</b>					
i.	Vertical Electrical Sounding (VES)	Nos	2124	3760	2917	1278
ii	Ground Water Exploration	Nos	664	1003	817	1125
iii	Water Quality Sampling & Analysis	Nos	22017	35787	33808	25861
3.	<b>Preparation of Aquifer Maps and Management Plan</b>	Lakh Sq Km.	-	2.28	4.03	1.68
4.	<b>Ongoing Activities</b>					
i.	Monitoring of existing ground water observation wells (4 times in a yr)	No of wells	Achieved	Achieved	Achieved	Achieved
ii	Ground Water Resources Assessment		-	-	Based on 2013 completed	Initiative based on Revised methodology for the year 2017
iii	State/UT Report	Nos	10	6	25	1
iv.	Ground Water Year Book	Nos	23	23	23	13

4.5 In response to a query about the success of measures taken by the CGWB to prevent misuse/ overuse of ground water in the country, the Ministry furnished the following written reply:

“CGWB is assessing the dynamic ground water resource and stage of ground water development in collaboration with the State governments and Union Territories. This information are the basic inputs for understanding and assessing the overuse of ground water. Using the findings of resource assessment and other related information Central Ground Water Authority (CGWA) regulates ground water extraction by adopting various regulatory measures. So far it has notified 162 areas



in the country for the purpose of regulation of ground water extraction. Under the CGWA guidelines, in notified areas, no permission is accorded to extract ground water through any energized means for any purpose other than drinking water. For non-notified areas, ground water withdrawal by industries is regulated subject to mandatory artificial recharge depending upon the stage of ground water development. Apart from CGWA efforts, 15 States have enacted Ground Water legislation in their States to regulate ground water development and management.

During two successive assessments in 2011 and 2013, there is over-all decrease in number of “Over-exploited” assessments units in India from 1071 (2011) to 1034 (2013) while there is over-all increase in number of “Critical” assessment units from 217 (2011) to 253 (2013). Thus there is a mixed trend in categorization of assessment units. However, State-wise analysis indicates that except for the States of Andhra Pradesh, Telangana, Madhya Pradesh and Uttar Pradesh, the number of Over-exploited units have either decreased or remained equal in other States and UTs. Similarly, except for the States of Andhra Pradesh, Tamil Nadu, Telangana and UT of Daman and Diu, the number of Critical units in other States have either decreased or remained equal. This reflects that the ground water management interventions including regulatory measures as well as augmentation measures such as Artificial Recharge to ground water have been effective to some extent in controlling the depletion in ground water level and also misuse / overuse of ground water.”

4.6 During the Study Visit of the Committee to Odisha, CGWB officials apprised the Committee about the Staff problem being faced by them. In this regard when asked by the Committee about the various difficulties being faced by CGWB in its functioning and measures taken to remove them, the Ministry, in its written submission, informed the following:

“Shortage of manpower to manage the works envisaged under the Aquifer Mapping Programme along with the increased workload for activities pertaining to Central Ground Water Authority. Efforts are on to fill up vacant posts.”

4.7 On being asked further about the total staff strength of CGWB in both technical and non technical groups, the Ministry informed in its written reply as follows:

“The total sanctioned staff strength of CGWB (both technical and non-technical groups) in different grades is 4012. Out of the total sanctioned strength, 2803 posts (~70%) are filled and 1209 posts (~30%) are lying vacant. At present 23 technical

and non-technical staff have been deployed at CGWA Central Head Quarter at New Delhi. At Regional level, CGWA NOC/ issues are handled by existing CGWB manpower only, as per tasking / earmarking by respective Regional Offices. Efforts have been made for filling up of the vacant post which includes- revision in recruitment rules, revival of posts, pursuing with UPSC for filling up of Scientific Group 'B' Gazetted posts etc.”

4.8 When queried about any change required in the functioning of CGWB to enable better management of ground water, the Ministry made the following submission:

“Central Ground Water Board is required to be strengthened both in terms of manpower and equipment. Since water is a State subject, closer coordination is needed with the State Governments. To improve coordination with State Governments and upscale the activities, the State Ground Water Departments are required to be strengthened with domain specialists.”

4.9 On being further asked by the Committee about the status of implementation of the recommendations of the Report of the Committee on Restructuring the Central Water Commission and the Central Ground Water Board, headed by Dr. Mihir Shah, the Ministry submitted following written reply:

“The Committee on restructuring of CWC & CGWB under the Chairmanship of Dr. Mihir Shah had submitted its report on July 2016. Thereafter, on the instructions of PMO, a Group was constituted vide Ministry's order dated 30.08.2016, under the Chairmanship of then Secretary (WR, RD&GR) to finalize the action points emerging from the Report of the Committee. 5 Meetings of the group have been held till 02.12.2016. Furthermore, a D.O letter dated 14.07.2017 was received from CEO NITI Aayog enclosing therewith the response furnished by Dr. Mihir Shah to NITI Aayog on the presentation given by MoWR, RD&GR on Restructuring of CWC and CGWB held in PMO on 24.06.2017. NITI Aayog has requested to thoroughly examine the comments of Dr. Mihir Shah for suitable implementation under intimation to PMO and NITI Aayog. The Matter is presently under consideration in the Ministry.”

**PART II****OBSERVATIONS / RECOMMENDATIONS****MANAGEMENT OF WATER RESOURCES - Challenges to Meet Future Demands of Water**

1. The Committee are concerned to note about the alarming situation in respect of availability of scarce water resources in India. They are particularly worried about the decline in per capita availability of water from 2209 m<sup>3</sup> in the year 1991 to 1545 m<sup>3</sup> in the year 2011. Water demand from irrigation, drinking water, industry, energy and other sectors is estimated to rise from 710 Billion Cubic Metre (BCM) in the year 2010 to 843 BCM in the year 2025 and upto 1180 BCM in the year 2050 as against the availability of 1123 BCM. Against this backdrop, the Committee note that the Ministry has proposed several new schemes viz. Ground Water Irrigation Scheme under the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) – Har Khet Ko Paani (HKKP) to provide assured Irrigation to Small and Marginal Farmers, Incentivisation Scheme to Bridge Irrigation Gap (ISBIG) to ensure utilization of irrigation potential for Projects other than 99 Priority Projects selected under PMKSY, Atal Bhujal Yojana (ABY) for select over exploited and ground water stressed areas to ensure efficient use of ground water through community participation. Besides State Water Budgeting on the lines of financial budgeting is being introduced to address the issue of over consumption of water and thereby ensure water security, safety and sustainability. While appreciating the proposed Schemes, the Committee desire that implementation of these Schemes should be expedited to realize their benefits at ground level at the earliest.

## **BUDGET ALLOCATIONS**

2. The Committee are distressed to note that although the Budget Allocations of the Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD and GR) has increased consecutively in the last four years from Rs. 4232 crore in the year 2015-16 to Rs. 8860 crore in the year 2018-19, still the Ministry is increasingly depending on the borrowings to finance its crucial projects such as completion of 99 Priority Projects selected under Accelerated Irrigation Benefits Programme (AIBP), their Command Area Development, Surface Minor Irrigation (SMI) Projects and Repair, Renovation and Restoration (RRR) of Water Bodies besides financing the Polavaram Multipurpose Irrigation Project, which is a National Project. The additional funds proposed to be released from NABARD under the Long Term Irrigation Fund (LTIF) in the current year is Rs.8000 crore which is almost equal to the total budgetary provisions of the Ministry. However it is disheartening that the Ministry has woefully lagged behind in utilization of the Budget Provisions made in the last 2 years i.e. Actual Expenditure of only Rs. 4714 crore as compared to BE Allocation of Rs. 6201 crore in the year 2016-17 and Actual Expenditure of only Rs. 3003 crore as compared to BE Rs. 6887 crore in the year 2017-18. Further an Expenditure of Rs. 3003 crore incurred upto 20 February, 2018 includes the interest of Rs. 548.98 crore paid to NABARD during the year 2017-18 with no payment against Principal as initially there is a moratorium of 3 years. They find that so far, an amount of Rs. 6974.757 crore has been borrowed from NABARD. The Committee express their concern over the

committed liability due to increasing borrowings, more so when they find that on the one hand the Ministry has not been able to utilize the funds year after year and on the other hand, it is resorting to borrowings from NABARD to finance its projects which reflects inefficient management of resources. The Committee find themselves at a loss to understand the reasons for not utilizing the unused amount in the Projects which have been brought under NABARD borrowings. Therefore, the Committee would recommend the Ministry to re-evaluate the allocations in order to ensure judicious utilization of the available resources and reduction in future borrowings.

#### TARGETS AND ACHIEVEMENTS UNDER XII PLAN

3. The Committee are perturbed to note that most of the Schemes/ Programmes of the Ministry could not be completed during the tenure of XII Plan and expenditure incurred during that period is way below the outlays approved under each Scheme except the Dam Rehabilitation and Improvement Programme (DRIP) wherein Actual Expenditure of Rs. 2057.63 crore has been incurred as against the total outlay of Rs. 2100 crore for the Project. They, however, note that the Ministry has now, proposed appropriate measures to be taken in respect of each of the schemes, after identification of bottlenecks, to enable their completion in a time bound manner. Taking note of the proposed measures to speed up the implementation process, the Committee desire that the Ministry should devise actionable plan and adopt target oriented approach to implement the Schemes within stipulated time period.

## **NAMAMI GANGE**

4. The Committee observe that the Government has launched the ambitious programme for cleaning and rejuvenating River Ganga, namely *Namami Gange* in the year 2014-15 with an approved cost of Rs. 20,000 crore. The Programme is being implemented through the National Mission for Clean Ganga (NMCG). The Committee find that out of Rs. 20,000 crore allocated under this Programme, 191 projects, at an estimated cost of Rs. 16,681.10 crore have been sanctioned. However as per the Ministry's submission, the details of completion of the Programme and time and cost over-runs (if any) would be clearer only when the Projects sanctioned come to a significant stage of implementation by December, 2018. They further notice that NMCG has been recently restructured and strengthened to expedite the implementation of the Project. The Allocations to NMCG are being provided for four components i.e. (i) National River Conservation Programme (NRCP)– Externally Aided Programme (EAP) (ii) NRCP– Non Externally Aided Programme (iii) National Ganga Plan (NGP) and (iv) Ghat Works and Beautification of River fronts.

## **NATIONAL RIVER CONSERVATION PLAN (NRCP)**

The Committee note that under the National River Conservation Plan (NRCP), the World Bank assisted Projects under the National Ganga River Conservation Authorities are being executed. They further observe that the ongoing Project Cost under this Programme is being shared between the Centre and the State Governments on 70:30 basis for World Bank funded Projects and on 85:15 basis for Japan International Cooperation

Agency (JICA) assisted projects. However for all World Bank funded projects approved after the year 2015, Central Government is bearing 100 per cent cost. The Committee find that during the year 2016-17, the expenditure incurred under this programme was Rs. 167.5 crore (Rs. 87.10 crore under EAP Component and Rs. 80.40 crore under Programme Component). However, as informed by the Ministry, from March 2017 to January 2018, this programme has gained momentum as 21 projects involving an amount of Rs. 6054.8 crore have been sanctioned and hence, keeping in view the anticipated expenditure, the Budgetary Allocations were revised upto Rs. 627 crore for EAP component. They further note that Allocations for the financial year 2018-19, have been kept at Rs. 770 crore ( Rs. 600 crore under EAP component and Rs. 170 crore under programme component). However, to utter surprise of the Committee, an Actual Expenditure of only Rs. 224 crore has been incurred under this Programme during the year 2017-18. As per the Ministry's own admission, only 20 Projects of sewerage infrastructure projects have been completed out of the total of 97 Projects as most of the projects' implementation has suffered on account of such factors as delay in tendering process, retendering, non availability of land, legal issues, natural calamities (like floods, landslides etc.), delay in permission from local authorities for road cutting/ crossing etc. They also note that initially, Projects could not be implemented speedily due to lack of proper planning. Now, the NMCG has taken remedial measures such as continuous follow up with the State Programme Management Groups (SPMGs) and Urban Local Bodies (ULBs) to resolve the issues for delay. The Committee are, however, not satisfied with the pace of implementation of the Projects. In their view, had this Programme been implemented in a more planned way with details of ground work

already in hand, a lot of precious time and money could have been saved. In view of the sluggish manner of project implementation and consequent lower expenditure incurred, the Committee hope that the Ministry will at least now make sincere efforts to complete all the sanctioned projects under this programme so as to achieve the goals of this programme within the targeted year of 2020. The Committee are further of the opinion that besides river Ganga, the scope of this Scheme should be widened to include all the Major Rivers of the country which are in equally polluted state and as such need urgent action for their rejuvenation. The Committee would , therefore, recommend the Ministry to look into this aspect and inform them about the measures taken for this purpose.

#### NATIONAL GANGA PLAN

5. The Committee observe that under the National Ganga Plan (NGP), provisions are made for implementing schemes/projects for the River Ganga and its tributaries. The Schemes for rehabilitation and up gradation of existing Sewage Treatment Plants (STPs) and commissioning of new STPs are also included under this programme. They find that total expenditure of Rs. 1329.12 crore has been incurred under this programme, during the last four years upto 15 February, 2018. They also find that during the period March, 2017 to January, 2018 Projects worth Rs. 1670 crore have been sanctioned. Further two projects have been awarded under Hybrid Annuity Model. Besides major projects for creation of Individual Household Latrine and Solid and Liquid Waste Management worth Rs. 800 crore approx. is also being taken up. However they are concerned to find that out of 191 Projects



sanctioned under *Namami Gange*, only 48 projects have been completed so far. Further as against the target of setting up 89 projects for sewage management interventions at 56 towns located along main stem of river Ganga, only 19 projects have been completed. The Committee express their displeasure over the fact that though the programme for cleaning and rejuvenation of river Ganga started 4 years back, a lot of time has been lost in finalizing modalities of its execution. As admitted by the Secretary himself, the actual work under this Programme has started since March, 2017 only. In view of this, the Committee are of the opinion that unless the projects are executed strictly in a time bound manner, the prospects of cleaning the river by the targeted year of 2020 looks bleak. They, therefore, strongly recommend the Ministry to make concerted efforts to complete the projects by the targeted period of 2020.

#### GHAT WORKS AND BEAUTIFICATION OF RIVER FRONTS

6. The Committee observe that under the component of Ghat works and Beautification of River Fronts of *Namami Gange*, as against the budgetary provision of Rs. 50 crore for the year 2017-18, no Actual Expenditure could be incurred. During the year 2018-19, again an allocation of Rs. 50 crore has been made under this Head. The Committee are astonished to find that out of total 64 projects taken up, only 24 Projects in West Bengal have been completed. Also, at present the Ministry is concentrating on Ghat works and Beautification of River Fronts of only Ganga River. However, while disapproving the Ganga centric mindset of the Ministry, the Committee think that the provision of Rs. 50 crore for the works of Ghat and Beautification of River Fronts is minuscule as Ghats and River Fronts need to

be developed for a large number of Rivers in the country. They further note that though the Projects were initially sanctioned for an amount of Rs. 1100 crore, later on only Priority Projects were taken up due to lower amount of availability of funds. They observe that recently, the Ministry is trying to arrange funds from the Corporate sector under their Corporate Social Responsibility (CSR) activities. The Committee, however, appreciate the fact that through the works like River Development and Maintenance of Ghats, the efforts of the Government to clean the River are more visible on the ground and as such they create an element of awareness amongst public to keep the Rivers clean. The public get more sensitized to maintain the health of Rivers around. The Committee, therefore, are of the view that there is a need to increase Budgetary Support for these works. Further the Committee also are of the further opinion that the River Front Development works should not be limited to only River Ganga, rather it should be expanded to cover all the Major Rivers of the country. They, therefore, strongly recommend the Ministry to explore the possibility of expanding the scope of this Programme to include other Major Rivers of the country as well.

## GROUND WATER MANAGEMENT AND REGULATION

7. The Committee observe that the Central sector scheme of Ground Water Management and Regulation was implemented during XII Plan and is being continued further for the period 2017-2020 with a total outlay of Rs. 1164 crore. This Scheme has three components of National Aquifer Mapping and Management Programme (NAQUIM), Ground

Water Monitoring, Resource Assessment, Regulation, Information Dissemination, etc. and Strengthening of infrastructure for technological upgradation (Machinery & Equipment). The Committee note that an allocation of Rs. 450 crore has been made in the year 2018-19 for this Scheme despite actual expenditure of only Rs. 164.12 crore in the previous year (upto December, 2017). The main reasons for increasing budgetary allocation under this scheme is stated to be due to committed liability of Rs. 300 crore for outsourcing works for undertaking Aquifer Mapping; which has been carried forward to the year 2018-19 resulting in to the increase in the requirement of funds in the next financial year. They further observe that the Ministry has taken several measures to speed up the implementation of National Aquifer Mapping and Management Programme such as formation of National Inter-Departmental Steering Committee (NISC) under the Chairmanship of Secretary, MoWR, RD&GR, sharing of Aquifer Maps and Management Plans with State Ground Water Coordination Committees (SGWCC) and regular review of the outputs of aquifer mapping by a National Level Expert Committee drawing domain experts, which include ex- Chairman CGWB, academicians from IIT, Delhi and Roorkee, agriculture experts, etc. The Committee are however, disturbed to find that the work of Aquifer Mapping, crucial for compiling information on the availability of ground water in Aquifers has not been undertaken in a planned manner. Under utilization of funds under this Scheme year after year shows the lack of proper planning and seriousness on the part of the Ministry in execution of this Scheme on account of which aquifer mapping could be completed so far for only 7.99 lakh hectare of land as against the target of covering 12.91 lakh sq. Km. area by 2020. With the adoption of the remedial measures for expediting this Programme, the Committee hope that

work of Aquifer Mapping will be completed at the earliest without any further delay. The Committee further desire that targets should be fixed to complete this work within a specific time period under intimation to the Committee.

## RIVER BASIN MANAGEMENT

8. The Committee note that the scheme of River Basin Management (RBM) consists of two broad components namely Brahmaputra Board and Investigation of Water Resources Development Scheme (IWRDS). IWRDS is being implemented by (a) National Water Development Authority (NWDA) and (b) Central Water Commission (CWC). Under this Scheme, Brahmaputra Board is carrying out works of – (i) Survey, Investigation & preparation of Master Plan, (ii) Preparation of DPR of Multipurpose Projects (iii) Drainage Development Schemes (iv) Anti-erosion works including protection of Majuli Island, Balat Village in Meghalaya, Mankachar and Masalabari area in Assam etc from flood and erosion and (v) Construction of Raised Platforms. Further CWC has been preparing Detailed Project Reports (DPRs) of Projects in the river basins of North east region to provide hydroelectric and irrigation benefits as per proposed plan of the RBM Scheme. They also note that the NWDA has updated water balance studies for 26 links, completed pre-feasibility studies for 15 intra-State link and Detailed Project Report (DPR) of 3 intra State links. The Committee find that Budget provision of Rs. 225 crore has been earmarked for this Scheme for the financial year 2018-19. However they observe that an Expenditure of only Rs. 146.18 crore has been incurred in 2017-18 as against Budget Provision of Rs. 199.99 crore. They further observe that the funds have remained unutilized to a great extent due to problems such as

unseasonal rainfall and high flood level of rivers, local disturbances, unavailability of forest clearances, shortage of staff, non completion of Feasibility Reports (FRs) of Himalayan Component due to international issue of Nepal/ Bhutan, etc. The Committee also note that formation of River Basin Authority for management of water resources of each river basin in a holistic manner has been kept in abeyance despite proposal to this effect given in the Report of the National Commission for Integrated Water resources Development way back in 1999, which suggested for enacting a legislation to replace the River Boards Act, 1956. Further a Draft River Basin Management Bill was recommended by Doabia Committee in 2012, which has been considered by a Group of Experts under the Chairmanship of Shri A. B. Pandya, Ex Chairman, CWC. The Group of Experts has now submitted the finalized draft of the River Basin Management Bill, 2017 which is currently being considered by the Ministry. The Committee are of the opinion that many of the problems stated above which have hampered faster implementation of Projects/Works under this Scheme can be resolved if the works are undertaken basin wise. They, therefore, recommend the Ministry to take expeditious measures for the enactment of the proposed River Basin Act, to enable establishment of the River Basin Authority and management of water resources of each river basin in a holistic manner. The Committee desire to be apprised of the timelines fixed for the purpose.

## **DEVELOPMENT OF WATER RESOURCES INFORMATION SYSTEM (DWRIS)**

**9. The Committee note that the Scheme of Development of Water Resources Information System (DWRIS) aims to create a standardized National Water Information System through an existing Nationwide Network of 1598 Hydrological Observation Stations. Under this scheme census of minor irrigation Schemes and pilot census of Major and Medium Irrigation Schemes are being conducted. Besides, this Scheme also aims to create an integrated data bank to tackle coastal erosion. They further note that this Scheme has been merged with the Flood Forecasting scheme since the financial year 2018-19 under which a robust early flood warning system is being developed to manage floods in the country. Under the Flood Forecasting scheme, nationwide network of flood forecasting Stations is being created and existing Stations are being further modernized to help data transmission in real time mode using satellite telemetry units. An amount of Rs. 211.27 crore has been allocated for combined scheme of DWRIS and Flood Forecasting schemes in the financial year 2018-19. However the Expenditure incurred by the Ministry during the year 2017-18 was only Rs. 84 crore as against the revised allocation of Rs. 115 crore. The Committee find that in all the components of DWRIS scheme viz. setting up of Hydrological Observation (HO) sites, Coastal Management Information System, Data Bank and Information system, strengthening of monitoring unit in CWC, physical and financial targets could not be achieved fully during the last four years. The reasons for non-achievement are attributed to non engagement of work charged staff for repair and maintenance of new HO sites, delays in administrative approval and expenditure sanction, delay in approval of work of reassessment of water availability and transfer of establishment of National Water**

Informatics Centre (NWIC) to National Hydrology Project scheme, etc. The Committee observe that the work relating to Coastal Management Information System and Data Bank and Information System have lagged behind to a great extent due to delays in the approvals and sanction for Expenditure. Keeping in view the need for having an authentic information / data on water availability, flood level etc. the Committee desire that the required approvals and procedures should be completed fast to finish works envisaged under the Scheme of DWRIS expeditiously. Further the setting up of the proposed National Water Information Centre should be expedited.

10. The Committee further note that the Central Water Commission is presently monitoring flood situation in the country through Flood Forecasting (FF) Stations covering 166 low lying areas / cities and towns and 60 reservoirs. The existing network of flood forecasting stations is spread over all the 19 Major River Systems in the country. They observe that the FF network is proposed to be extended to 325 Stations by covering additional 3 States. However from the information furnished to the Committee, they note that during the last three years, modernization of existing FF network has lagged behind as out of 629 Stations proposed to be modernized by installation of telemetry, work on only 65 stations could be completed. Further during XII Plan period out of 100 new FF Stations proposed to be established, 51 new Stations were established. Also out of 275 FF stations proposed to be covered, only 171 FF Stations could be covered under rainfall based hydrodynamic flood forecasting models. While appreciating the measures taken by the Ministry to set up modern FF network in the country to enable dissemination of flood related information well in advance, the Committee desire that the pending works under the

Scheme should be completed expeditiously but strictly within the period of three year plan (2017-18 to 2019-20) as envisaged by the Ministry.

11. The Committee are further surprised to note that with respect to assessment of water in Reservoirs, only 91 Reservoirs have HO sites as against the existing 121 reservoirs. They are further surprised to note that there are still some HO sites, which are physically manned stations and are yet to be converted into Telemetry Based Stations to enable real time availability of data. The Committee strongly recommend that Ministry should take utmost measures to modernize all such stations into Telemetry Based Stations and information should be made available online to enable Real Time Assessment of the Water Table. They further recommend the Ministry to expand the HO sites for all the 121 reservoirs in the country.

#### **DAM REHABILITATION AND IMPROVEMENT PROGRAMME (DRIP)**

12. The Committee note that Dam Rehabilitation and Improvement Programme (DRIP) is being implemented in 223 Large Dams in four States of Madhya Pradesh, Odisha, Kerala and Tamil Nadu. The total cost of the Project is estimated at Rs. 2100 crore. They notice that the Project was initially scheduled to be completed within six years from its inception i.e. 18 April, 2012. However, scheduled date of its completion has been revised upto June 2020. Further from the submissions of the Secretary, the Committee observe that the Ministry has approved DRIP II for a cost of Rs. 8000 crore. They note that Budgetary Provisions under DRIP are made only for CWC and Damodar Valley Corporation (DVC).



However, the Committee find that the Ministry has not been able to utilise the Budgetary Provisions under this Scheme fully as is evident from the fact that out of Rs. 160 crore allocated in 2017-18, the Ministry could utilize only Rs. 50 crore upto February, 2018. The Committee are not satisfied with the progress of the Scheme as the work under the scheme could not be started as per the Scheduled Programme and now will be completed in another two years. Taking note of the fact that another Programme is going to be started for rehabilitation of dams, the Committee desire that the works under the scheme should be expedited. Further, they desire to be apprised of the details of DRIP II scheme including the total number of Dams to be covered thereunder along with details of the States wherein these are located, funding pattern, works envisaged, etc.

13. The Committee are further concerned to note the lackadaisical attitude of the Government in bringing forth the legislative framework for Safety of Dams. Keeping in view the large number of Dams in India (about 5200 dams) many of which require urgent actions to reinforce their safety, the Committee think that the Ministry should enact the Dam Safety Legislation at the earliest. They would like to be apprised of the details of the measures taken by the Ministry for an early enactment of Act for Dam Safety.

#### RESEARCH AND DEVELOPMENT AND IMPLEMENTATION OF NATIONAL WATER MISSION

14. The Committee observe that the scheme of Research and Development and Implementation of National Water Mission has been formulated by amalgamating existing schemes of (i) Research and Development and (ii) Implementation of National Water Mission included under XII Plan. This Scheme intends to undertake Research and Development to

provide educational training and human resources development programme in water sector and implement Schemes / Projects for conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through National Water Mission. The Committee note that under the scheme of National Water Mission, as compared to BE of Rs. 15 crore for the year 2017-18, the RE was Rs. 5 crore whereas the Actual Utilization was only Rs. 0.69 crore upto 31 January, 2018. However, the BE allocations for the year 2018-19 has been again increased substantially to Rs. 20.10 crore for National Water Mission. The Committee find that the main reasons for underutilization of resources under the Head National Water Mission is due to inadequate staff and absence of full time Mission Director in National Water Mission who has to coordinate with other Ministries, State Governments and other Organizations intensively for fulfilling its mandate and objectives. The Committee, therefore, strongly recommend the Ministry to take urgent measures to fill up the vacancies in the National Water Mission at the earliest.

15. Further, with regard to increasing water use efficiency by 20 per cent which is one of the goals of National Water Mission, the Committee find that not much headway has been made. As informed to the Committee, the water use efficiency in agriculture is only 38% whereas it is the largest consumer of water using 80 per cent of water for irrigation. The Committee further observe that establishment of proposed National Bureau of Water use efficiency has been put on a back burner, which could have gone a long way in improving water use efficiency by making users accountable for wastage. The Committee therefore, stress the need for establishing National Bureau of Water Use Efficiency with immediate effect with statutory powers. They would like to be apprised of the measures

taken/proposed to be taken for an early establishment of National Bureau of Water Use Efficiency.

**PRADHAN MANTRI KRISHI SINCHAI YOJANA (PMKSY) - Har Khet Ko Pani (HKKP)**

16. The Committee observe that Pradhan Mantri Krishi Sinchai Yojana (PMKSY) was launched in 2015-16 with a view to enhance the physical access of water on farm and expand cultivable area under the Assured Irrigation, improve on farm water use efficiency, introduce sustainable water conservation practices, etc. Har Khet Ko Pani (HKKP) is one of the components of PMKSY; which includes Surface Minor Irrigation (SMI) and Repair, Renovation and Restoration (RRR) of water bodies scheme and grants to National Water Development Agency for debt servicing of NABARD loan under Long Term Irrigation Fund (LTIF).

**ACCELERATED IRRIGATION BENEFITS PROGRAMME (AIBP) – 99 ongoing priority projects**

The Committee note that during the year 2016-17, 99 ongoing Accelerated Irrigation Benefits Programme (AIBP) Major / Medium irrigation projects were identified for completion in phases up to December, 2019. So far only 18 prioritised projects out of 99 projects identified have been completed and irrigation potential of more than 4 lakh hectare has been created. However, the Committee find that even with the availability of funds through Long Term Irrigation Fund (LTIF) created in NABARD, the progress of completion of Projects is not at all impressive, given the fact that only 18 out of 99 Projects are complete. With this pace of work, completing all the Projects by December, 2019 seems to be

unachievable, despite multiple monitoring mechanisms in place to oversee the progress of the projects. The Committee would, therefore, like to know the factors responsible for the slow pace of work. Since the financing of these Projects are through LTIF carrying loan liabilities, the Committee desire that the implementation should be expedited to finish the Projects by the end of December, 2019.

#### **HAR KHET KO PANI**

17. The Committee find that under Har Khet Ko Pani (HKKP) Component of PMKSY, two Schemes viz. Surface Minor Irrigation scheme (SMI) and Repair, Renovation and Restoration (RRR) of Water Bodies scheme have been taken up. Under the SMI scheme, minor irrigation schemes having irrigation potential of less than 2000 hectare are included, while Central Assistance given to States for repair, renovation and restoration of water bodies are included under RRR scheme. The Committee further note that an allocation of Rs. 2600 crore has been made under the component HKKP which is Rs. 712 crore more as compared to RE allocations in the year 2017-18. The reason for increase in allocation is stated to be due to inability of the Ministry to release commensurate Central Assistance for ongoing pending proposal of SMI/RRR of water bodies scheme last year due to Budget constraints. Also provision of Rs. 1310 crore has been made to provide for likely payments for the year 2018-19 on the basis of projections made by NABARD/NWDA.

With regard to implementation of RRR scheme, the Committee find that though Central Assistance is being given to States to undertake works for repair, renovation and restoration of water bodies, the Ministry has not taken concrete action to prevent existing

water bodies from being encroached upon and making them pollution free. The entire responsibility on this count has been shifted to the concerned State Governments on the ground that subject of water is at present under the State List. The Committee express their displeasure over the fact that Ministry has not initiated any action to conduct a survey of water bodies in the country particularly with reference to their size, condition, status of encroachment, etc. despite their recommendation in this regard in the Tenth Report (16<sup>th</sup> Lok Sabha). Taking note of the fact that a number of water bodies in the country are severely polluted, the Committee desire that the Ministry should take proactive measures to address the situation. They, therefore, again recommend the Ministry to conduct a survey of all the water bodies including their size, condition, status of encroachments and furnish the findings of the survey to the Committee within three months of presentation of this Report.

#### **MORE CROP PER DROP – MICRO IRRIGATION**

18. The Committee find that the objective of 'More Crop Per Drop' or efficient use of water in agriculture is being encouraged partly through the Command Area Development (CAD) Works implemented *pari-passu* in AIBP projects and partly under PMKSY component being implemented by the Ministry of Agriculture and Farmers Welfare. As of now, the thrust in AIBP and CADWM projects is on the encouragement of the use of underground pipeline network to reduce the wastage of water. They also notice that Har Khet Ko Pani (HKKP) under PMKSY, being executed by the Ministry of Water Resources, River Development and Ganga Rejuvenation includes only creation of irrigation potential under

the Schemes of SMI and RRR of water bodies, based on proposals submitted by the States. They further observe that the Ministry does not have any information on area covered under Micro Irrigation under 99 Prioritized Projects of AIBP. They also note with utmost concern that the proposed Micro Irrigation Fund (announced in Budget 2017-18), to be created in NABARD with an initial corpus of Rs. 5000 crore under the jurisdiction of Ministry of Agriculture and Farmers Welfare and proposed implementation of "Incentivisation Scheme for Bridging Irrigation Gap (ISBIG)" Scheme under the jurisdiction of the Ministry of Water Resources, River Development and Ganga Rejuvenation are yet to see the light of the day. ISBIG scheme is yet to be approved by Expenditure Finance Committee (EFC). Noting that the use of Drip and Sprinkler Irrigation Devices has not been included in the Micro Irrigation infrastructure component of CADWM programme, the Committee are of the opinion that the measures so far taken by the Ministry are not sufficient to increase the use of Micro Irrigation methods in a big way. Further, at present, the farmers are expected to bear the cost of such devices either themselves or avail subsidies available in extant scheme of the Ministry of Agriculture and Farmers Welfare. The Committee are of the view that the Ministry of Water Resources, River Development and Ganga Rejuvenation should play a pivotal role in spreading Micro Irrigation Methods alongwith laying of underground pipelines, creating a robust network. In this regard, the Ministry should formulate scheme to propagate Micro Irrigation in a big way by giving incentives to farmers in the form of financial assistance / subsidy in consultation with the Ministry of Agriculture and Farmers Welfare. The Committee, therefore, recommend the Ministry to initiate measures to incentivize farmers and apprise the Committee in detail about the efforts made in this

direction within three months of presentation of this Report. The Committee also recommend the Ministry to make sincere efforts for implementation of ISBIG Scheme at the earliest. Further the Ministry should collect information on total area covered under Micro Irrigation in the 99 Prioritised Projects of AIBP and furnish the details to the Committee as well.

#### **FLOOD MANAGEMENT AND BORDER AREAS PROGRAMME (FMBAP)**

19. The Committee find that the Schemes of Flood Management Programme (FMP) and River Management Activities and Works Related to Border Areas (RMBA) have been continued from XII Plan and clubbed together for implementation under the name of Flood Management and Border Areas Programme (FMBAP). Under the Flood Management Component of FMBAP scheme, spill over portion of works already approved under XII Plan and new flood management works proposed by the State Governments during 2017-20 will be implemented. The second component of FMBAP i.e. RMBA deals with Hydrological Observations and Flood Forecasting on common Border Rivers with the Neighbouring countries, joint observations on rivers common to Bangladesh and neighbouring countries, investigation of Water Resources Projects in the neighbouring countries, Pancheshwar Multipurpose project, Survey and Investigation of Kosi High Dam, Flood protection/anti erosion works in border areas etc.

The Committee note that out of 522 Flood Management Works approved and included under Flood Management Programme during XI and XII Plan, only 298 Schemes were completed upto 31 March 2017, extending flood protection benefits to an area of 34.66 lakh hectare and

265.79 lakh people have been benefitted. The Committee further observe that principal reason for slow financial progress of the works, as stated by the Outcome Review / Third Party Evaluation Committee is due to less release of funds on account of lower allocation of Budget funds. As regards funding pattern under the FMP, the Committee note that for Special Category States, the cost is shared by Central and State Governments in the ratio of 70:30, while for General Category States the ratio is 50:50. They also observe with great concern that allocation of funds for FMP has been continuously decreasing under XII Plan after devolution of Central taxes on the recommendations of 14<sup>th</sup> Finance Commission, resulting in slow physical / financial progress of remaining 224 Projects. The allocation for FMP during the years 2016-17 and 2017-18 was Rs. 149.99 crore and Rs. 150 crore respectively. Further Rs. 527 crore has been allocated for the merged scheme of FMBAP during the next financial year 2018-19. Keeping in view the flood menace being faced every year in a large part of the country and the necessity for executing Flood Protection Works regularly, the Committee strongly recommend that adequate funds may be allocated under this Programme so as to enable the State Governments to complete the work in time. They also notice with great concern that at present, reservoirs are not being managed in a synchronized manner to avoid flooding in the downstream areas. Therefore, in view of the need for timely release of reservoirs and integrated management of reservoirs, basin wise, they recommend the Ministry to take urgent action/measures for the Reservoir Management as well under intimation to this Committee.



20. The Committee are further concerned to note that the legislation on Flood Plain Zones has not been enacted in several States despite circulation of Model Bill for Flood Plain Zoning in 1975. In spite of repeated requests from the Ministry, only the States of Manipur, Rajasthan and Uttarakhand have enacted legislations as per the Bill. The Committee note that the State Government of Bihar has expressed reservations against the Bill, stating that Flood Plain Zoning Bill is neither practicable nor implementable in the State of Bihar. The Committee would, therefore, recommend the Ministry to hold discussions with the State Governments in the matter and resolve the underlying factors due to which State Governments are not forthcoming with the desired legislation.

21. Regarding the scheme of River Management Activities and works related to Border Areas, the Committee observe that although Pancheshwar Development Authority was set up in September 2014, the Detailed Project Report of Pancheshwar Multipurpose Project, prepared by M/s WAPCOS Ltd. is yet to be finalized by both the sides, Further Saptkosi field investigation is still continuing. The reason for slow progress is stated to be due to security problems on Nepal side. The Committee would like to know the outcome of bilateral discussions held in this regard. Although discussions are being held in Joint Committees at Ministry level and Secretaries level, the frequency of such meetings should be increased to resolve the issues. Further, the Committee think that the Ministry should adopt a more proactive approach in discussions with Nepal by giving more financial support for completion of Projects on Rivers originating from Nepal and crucial for Flood Management in downstream Uttar Pradesh and Bihar. Besides, the Committee also recommend the Ministry to evaluate the anti erosion works undertaken in higher reaches of

mountains in Nepal where there has been reckless deforestation resulting in unbridled flow of water during monsoon and its effect on floods in Bihar. The Committee are of the opinion that the Ministry should undertake Projects/Works/Activities to ensure afforestation in the higher reaches of mountains and take up this matter, in particular, with Nepal at appropriate level. The Committee would like to know the details of such measures.

#### CENTRAL GROUND WATER BOARD (CGWB)

22. The Committee note that the Central Ground Water Board (CGWB), a Multidisciplinary Scientific Organization has been entrusted with the responsibility to develop and disseminate information technologies, monitor and implement national policies for the scientific and sustainable development and management of India's Ground Water resources including their exploitation, assessment, conservation, augmentation, protection from pollution and distribution based on principles of economic and ecological efficiency and equity. They further note that the Board is not sufficiently empowered to carry out its activities effectively as it has serious shortage of both manpower and modern equipment. At present out of total sanctioned staff strength of 4012, 1209 posts are vacant in the Board. Further 23 technical and non-technical staff have been deployed at Central Ground Water Authority (CGWA) Central Head Quarter at New Delhi. Also, at Regional level, CGWA NOC/issues are being handled by existing CGWB manpower only. They observe that measures such as revision in recruitment rules, revival of posts, pursuing UPSC for filling up of Scientific Group 'B' Gazetted posts etc. are being undertaken. The activities of the

Board are also getting handicapped due to lack of modern equipments. Besides, CGWB, State Ground Water Departments are not adequately equipped to handle their work as these are also suffering from lack of domain specialists. With regard to the proposal for restructuring of CGWB, as recommended in Dr. Mihir Shah Committee's Report, they notice that the proposal is presently being considered by the Ministry. The Committee, therefore, recommend the Ministry to take urgent steps for filling up vacancies without further delay at CGWB by recruitment of domain specialist. Further the Ministry should take measures to increase staff strength under CGWA to enable it to carry out its regulatory role independently. Besides, steps should also be initiated to procure the modern equipment to enable CGWB to carry out its activities more effectively. State Governments should be persuaded to take desired steps for strengthening the State Ground Water Departments with whose collaboration, the Board can effectively manage and develop the Ground Water Resources.

NEW DELHI  
08 March, 2018  
17 Phalguna, 1939 (Saka)

RAJIV PRATAP RUDY,  
*Chairperson,*  
*Standing Committee on Water Resources*

**ANNEXURE – I****MINUTES OF THE THIRD SITTING OF THE STANDING COMMITTEE ON WATER RESOURCES (2017-2018) HELD ON FRIDAY, 23 FEBRUARY, 2018 ON DEMANDS FOR GRANTS (2018-19)**

The Committee sat from 1100 hours to 1345 hours in Committee Room No. - 3, First Floor, Parliament House Annexe Extension Building, New Delhi.

**PRESENT**

**Shri Rajiv Pratap Rudy** - **Chairperson**

**LOK SABHA**

1. Shri Sudheer Gupta
2. Shri Mohanbhai Kundariya
3. Shri Maganti Murali Mohan
4. Smt. Aparupa Poddar
5. Shri Vishnu Dayal Ram
6. Smt. V. Sathyabama
7. Shri Lallu Singh

**RAJYA SABHA**

8. Shri Mir Mohammad Fayaz
9. Dr. Bhushan Lal Jangde
10. Shri Ananda Bhaskar Rapolu
11. Shri Dharmapuri Srinivas

**SECRETARIAT**

1. Shri Shiv Kumar - Joint Secretary
2. Smt. Rita Jaikhani - Director
3. Shri Kusal Sarkar - Additional Director
4. Shri R.C. Sharma - Deputy Secretary

### **Ministry of Water Resource, River Development & Ganga Rejuvenation**

1. Shri U.P. Singh Secretary (WR, RD & GR)
2. Shri Sanjay Kundu JS (Parl.) (WR, RD & GR)
3. Shri Akhil Kumar JS (Admn.) (WR, RD & GR)
4. Shri Jagmohan Gupta JS &FA (WR, RD & GR)
5. Dr. Arziz Ahmad MD (NWM)
6. Shri K. Vohra Commissioner (WR/SPR)
7. Shri J. ChandraShekhar Iyer Commissioner (WR/FM)
8. Shri T.S. Mehra Commissioner (WR/B&B)
9. Shri B.R.K. Pillai Commissioner (WR/CAD)
10. Shri P.K. Saxena Commissioner (WR/Indus)
11. Shri S.M. Mahajan ADG (WR)
12. Shri R.D. Chauhan Controller of Accounts
13. Shri Ashish Kumar Director (WR, RD & GR)
14. Shri Shyam Lal Meena Director (WR)
15. Shri Neeraj Kumar Manglik Director (WR)
16. Dr. Sarat Kumar Jain Director (NIH)
17. Shri Bhupender Singh Sr. JC. (WR)
18. Shri Rahul Kumar Singh Sr. JC(WR)

### **Central Water Commission (CWC)**

1. Shri S. Masood Hussain Chairman

### **Central Ground Water Board (CGWB)**

1. Dr. E. Sampath Kumar Member (CGWB)
2. Dr. P. Nandkumaran Member (CGWB)
3. Shri S. Marwah Regional Director (CGWB)

### **Water and Power Consultancy Services Ltd.**

1. Shri R.K. Gupta CMD (WAPCOS Ltd.)

### **National Mission for Clean Ganga (NMCG)**

1. Shri Hitesh Kr. S. Makwana ED (NMCG)
2. Shri Rozy Agarwal ED (NMCG)

**Central Water and Power Research Station**

Shri V.V. Bhosekar                      Director

**Central Soil and Material Research Station**

Shri Hasan Abdullah                      Director

2. At the outset, the Hon'ble Chairperson welcomed the Members to the sitting of the Committee convened to have evidence of the Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD and GR) – in connection with the examination of the Demands for Grants (2018-19). After this, the Hon'ble Chairperson read out the Condolence Message in the memory of late Shri Hukum Singh, former Chairperson of the Standing Committee on Water Resources and expressed grief over the sudden demise of Shri Singh. He also expressed his condolences to the family of late Shri Hukum Singh. Then, the Committee observed two minutes silence for paying homage to the departed soul. Thereafter, the Chairperson welcomed the representatives of the Ministry. After that the representatives of the Ministry made a Power Point presentation on various issues concerning the subject.

3. During the Power Point Presentation, the Committee discussed various issues threadbare. The Secretary apprised the Committee about the main scheme 'Namami Gange' which was approved by the Cabinet in 2015 involving expenditure of Rs. 20,000 crore up to the year 2020. He made an admission before the Committee that the main problem had been that the funds could not be utilized completely. An Assessment Feasibility Study was conducted on all the cities located on the banks of river Ganga to ascertain the amount of sewage and their treatment capacity. After that assessment, the Projects had started but the progress was very tardy. Thereafter, National Mission for Clean Ganga (NMCG) was made Authority and was entrusted with the power to approve the Project itself. He further informed the Committee that the Projects amounting to Rs. 16,800 crore had been sanctioned under that Project.

4. The Hon'ble Chairperson enquired about the number of States covered under the Project. The Secretary, MoWR, RD and GR apprised that under the River Ganga, its tributaries were also included. However, there are five States viz. Uttarakhand, Uttar Pradesh, Bihar, Jharkhand and West Bengal; which formed the main stem of river Ganga. However, focus was on mainstream of Ganga and its three or four most polluted tributaries. He further informed that the Sewage Management is their top priority. There were seven or eight categories under which different Projects had been taken up like ghats and crematoria construction, bio-diversity conservation and afforestation etc. Further, under Sewage Management, 97 projects had been approved out of which 20 have been completed. He further informed the Committee that there were a number of operational and maintenance issues under Ganga Action Plan I and II which all had

been considered while approving the Namami Gange Project and this has made a 100 percent centrally assisted Programme. Projects had been sanctioned in 10 big cities which contributed 65 per cent of sewage load in river Ganga on the basis of population of 2035.

On the issue of meagre budget allocation pertaining to beautification of ghats, the Secretary informed that more measures are being undertaken as emphasis is on those factors which pollute Ganga. The Chairperson suggested that there should be a policy on the subject whereby those measures taken are visible to common man. In reply to a query as to why the budgetary provision under these Projects was confined only to Ganga basin, the Secretary informed the Committee that the Ministry had specifically been allocated river Ganga and other rivers have been covered under the scheme called National River Conservation Project which happens to be under the Ministry of Environment and Forests.

5. Responding to a query regarding the meager amount allocated for Dam Rehabilitation, the Secretary stated that there is a large programme on Dam Rehabilitation amounting to Rs. 2,100 crore which is assisted by World Bank. However, the Ministry's budget reflected only the budget of Central Water Commission (CWC) and Damodar Valley Corporation (DVC) and does not show that amount because it is directly routed to the States.

6. The Secretary, then, discussed about the Pradhan Mantri Krishi Sinchai Yojna (PMKSY). He informed the Committee that unlike earlier, now Accelerated Irrigation Benefits Programme (AIBP) was being funded through Long Term Irrigation Fund (LTIF) under NABARD. The Chairperson enquired about the process of monitoring of all these Mega Projects. Replying to this, the Committee was informed that there are two-three separate mechanisms. These projects belong to PMKSY and Medium Irrigation which are monitored by the Monitoring Directorate in Central Water Commission (CWC). Apart from this, there are 13 field offices having Monitoring Directorate. Further, there is a Project Management Unit for PMKSY and also a Dash Board to get the details of every Project. The Secretary also informed the Committee about the various issues being faced under PMKSY. He stated that the Ministry held discussions with 18 States but only 6-7 States were able to take the money from NABARD. He further informed that out of 149 projects, 99 projects have been identified to be completed by December 2020. The work belonging to 50 projects which are not included under 99 projects has come to a standstill. Also the work relating to Command Area Development under completed Projects has also stopped.

7. The Ministry representative also informed the Committee that irrigation consumed 60 per cent of the ground water and 40 per cent of surface water. He further stated that at present, maximum irrigation was done through pump sets and role of canal irrigation was very limited. Further, water use efficiency was

just 38 to 40 per cent. Besides, progress of Command Area Development (CAD) is very poor. Keeping in view the increasing cost of land acquisition and other expenditure, entire command area should be planned on micro-irrigation.

With regard to the budget for Aquifer Mapping and its process, the representative of the Ministry informed that the budget was for Rs. 450 crore and it was done at block level. The target was to cover 12.9 lakh square kilometers by the year 2020. He further informed that the Ministry did not have any scheme relating to Water Table Recharge. However a new scheme called Atal Bhujal Yojana (ABHY) was being introduced.

8. The representative of the Ministry further added that the National Hydrology Project would also be of great help in resolving Inter-State water disputes. In addition to that, a National Water Information Centre would also be set up. He further informed that emphasis was being laid on Flood Forecasting which will be monitored through 2D Model. For that, a Digital Elevation Model has been developed through the help of Survey of India. Besides, the Ministry also stated that the most important aspect about water resources was Water Resources assessment and that was done through Hydrology Observation Stations of Central Water Commission (CWC), Water Quality Labs and Dams. There are about 5,200 Dams in India, 450 are under construction. In India, the total holding capacity of Dams is 283 billion cubic meter. 91 major reservoirs have about 65 per cent of the total holding capacity. The number of 91 Major Reservoirs is proposed to be increased up to 120 so that it covers 80 per cent of India's reservoir capacity. Thereupon, the Committee desired to know whether all these things are done online. Responding to that, the Secretary MoWR, RD and GR stated that at present a large number of stations are being physically manned. However, those stations are gradually being converted into a Telemetry System whereby sensor will do the job.

9. The representative of the Ministry further informed that thirteen per cent of India's area was flood prone. There were 275 Flood Forecasting Stations; which were proposed to be increased up to 325. The Flood Forecasting system had proved to be very useful as it gave 72 hours advance warning. He further stated that Integrated Reservoir Management had been developed to integrate the reservoirs which were presently individually operated so that discharge of one did not cause flood in another. With regard to Coastal Management, the Committee was informed that there are three Coastal Management Information Stations; which are proposed to be increased up to eight in next three years. Telemetry was being introduced to obtain Real Time Data Acquisition System. State Governments which control most of the Dams in the country are also being persuaded to opt for telemetry.



10. While explaining the River Basin management, the Secretary informed the Committee that as per the constitutional scheme of things, water was basically in two parts; interstate river waters and valleys development is with the Union Government. Water that is *per se* water usage is with State Governments. Therefore, Ministry's primary job in that regard is integrated river water development and basic development. National Water Development Agency is responsible for interlinking of rivers. He further informed that 14 Himalayan links and 16 Peninsular links had been identified for interlinking and Rs. one crore has been allocated for that project as a token amount because the work on interstate linking had not begun. However, the budgetary provision of Rs. 200 crore had been made for this Project. Under Interstate link, work would be undertaken on Ken-Betwa link.

11. Responding to a query regarding meagre budget pertaining to Flood Management Programme (FMP), Secretary replied that the Ministry had been getting only Rs. 150 crore for last two years for that programme while the liability from the States was Rs. 4000 crore. With the Revised Estimates (RE), the amount had been increased up to Rs. 563 crore. The next year budget's is Rs. 527 crore. However, it is still inadequate. Responding to a query regarding the funding, the representative of the Ministry replied that under the FMP, there were two funding patterns *i.e.* 70:30 for hilly States and 50:50 for other States. However, the Ganga Flood Control Commission (GFCC) did not have any separate funds for that. The Secretary requested that the Committee should recommend for increase of budget under this Head.

12. The Chairperson expressed dismay over the reckless felling of trees by Nepal in the mountains and catchment areas as a result during the heavy rain, the silt flew down to the States of Bihar and Uttar Pradesh. The Committee desired to know the mechanism through which the bilateral talks took place with the neighbouring countries. The Secretary, MoWR, RD and GR informed that for that there was a multi-tier mechanism. The representative of the Ministry informed that the Principal Secretaries of State of Bihar and UP are members of the Committee. GFCC is also a part of that. Then, there is also a Joint Committee on Inundation and Flood Management (JCFIM) which discusses issues jointly. In response to a further query on the mandate for the number of meetings, he informed that JCFIM meet every year, however, higher level meetings are at larger intervals. The Chairperson asked the Secretary, MoWR, RD and GR to ascertain how many meetings should be held and how seriously those meetings have been taken up.

13. A query was raised on the safety of Dams, the representative of the Ministry informed that a legislation called 'Dam Safety Act' is under consideration of the Government of India and discussion with all the States in that regard had taken place. Also a software namely DHARMA developed by the World Bank is also being introduced. In reply to a query regarding deteriorating conditions of glaciers and springs, the

Secretary informed that some small States like Sikkim has done a commendable job on spring rejuvenation. However, there should be a policy on spring rejuvenation.

14. In response to another query on the role of National Water Mission, the representative of the Ministry informed that it was an umbrella organization. Its main purpose was to increase the water use efficiency in various sectors like irrigation, industry etc. Elaborating further, the Secretary stated that on the lines of Bureau of Energy Efficiency, a Bureau of Water Use Efficiency was to be established. However, it could not be set up. The Secretary informed that Mihir Shah Report recommended a new body called National Water Commission in place of Central Water Commission and Central Ground Water Board. The Chairperson observed that the National Water Commission should be given a full mandate.

15. The Secretary, MoWR, RD and GR also spelt out the details of the three new Schemes to be introduced namely Atal Bhujal Yojana (ABHY), PMKSY - Har Khet Ko Pani - Ground Water and Incentivization Scheme for Bridging Irrigation Gap.

16. The Committee asked the Secretary, Ministry of Water Resources, River Development and Ganga Rejuvenation to furnish written replies to those queries raised by Members during the sitting which could not be replied by the representatives orally.

17. The Committee thanked the representatives for comprehensive presentation on the subject.

18. A copy of the verbatim proceedings of the sitting was kept for record.

The Committee then adjourned.

**ANNEXURE - II****MINUTES OF THE FOURTH SITTING OF THE STANDING COMMITTEE ON WATER RESOURCES  
(2017-18) HELD ON THURSDAY, 08 MARCH 2018**

The Committee sat from 1500 hours to 1520 hours in Committee Room No. 2, First Floor, Parliament House Annex Extension Building, New Delhi.

**PRESENT**

**Shri Rajiv Pratap Rudy – Chairperson**

**MEMBERS****LOK SABHA**

2. Shri Radheshyam Biswas
3. Shri Sudheer Gupta
4. Shri B. Vinod Kumar
5. Shri Maganti Murali Mohan
6. Shri Abhijit Mukherjee
7. Shri Subhash Patel
8. Shri Vijaysinh Mohite Patil
9. Shri Vishnu Dayal Ram
10. Shri Lallu Singh

**RAJYA SABHA**

11. Sardar Balwinder Singh Bhunder
12. Shri Harshvardhan Singh Dungarpur
13. Dr. Bhushan Lal Jangde
14. Shri Ananda Bhaskar Rapolu
15. Shri Dharmapuri Srinivas
16. Shri Pradeep Tamta

**SECRETARIAT**

- |    |                    |   |                     |
|----|--------------------|---|---------------------|
| 1. | Shri Shiv Kumar    | - | Joint Secretary     |
| 2. | Smt. Rita Jaikhani | - | Director            |
| 3. | Shri Kushal Sarkar | - | Additional Director |
| 4. | Shri R. C. Sharma  | - | Deputy Secretary    |

2. At the outset, the Chairperson welcomed the Members to the sitting of the Committee. Thereafter, the Committee took up for consideration and adoption (i) Draft Report on Demands for Grants (2018-19) of the Ministry of Water Resources, River Development and Ganga Rejuvenation and (ii) Draft Report on Action Taken by the Government on the observations / recommendations contained in Fourteenth Report on the subject "Review of Accelerated Irrigation Benefits Programme (AIBP)." After some deliberations, the Committee adopted the aforesaid two draft Reports without any modification.

3. The Committee also authorized the Chairperson to present these two Reports to both the Houses of Parliament in the current Winter Session.

The Committee then adjourned