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STANDING COMMITTEE ON WATER RESOURCES
(2015-16)

SIXTEENTH LOK SABHA

MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION

DEMANDS FOR GRANTS (2016-17)

NINTH REPORT



LOK SABHA SECRETARIAT
NEW DELHI

May, 2016 / Vaisakha, 1938 (Saka)

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(SIXTEENTH LOK SABHA)

MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT AND
GANGA REJUVENATION

DEMANDS FOR GRANTS
(2016-17)

Presented to Lok Sabha on 02.05.2016
Laid on the Table of Rajya Sabha on 02.05.2016



LOK SABHA SECRETARIAT
NEW DELHI

May, 2016 / Vaisakha, 1938 (Saka)

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COMPOSITION OF THE STANDING COMMITTEE ON WATER RESOURCES

(2015-2016)

Shri Hukum Singh - Chairperson

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LOK SABHA

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3. Shri Devusinh Jesingbhai Chauhan
4. Shri Sukhbir Singh Jaunpuria
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SECRETARIAT

- | | | | |
|----|--------------------|---|---------------------|
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| 2. | Smt. Rita Jaikhani | - | Director |
| 3. | Shri Kushal Sarkar | - | Additional Director |
| 4. | Shri G. Guite | - | Under Secretary |

INTRODUCTION

I, the Chairperson, Standing Committee on Water Resources (2015-16) having been authorised by the Committee to submit the Report on their behalf, present the Ninth Report on Demands for Grants (2016-17) of the Ministry of Water Resources, River Development and 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 30 March, 2016.

4. The Report was considered and adopted by the Committee at their sitting held on 29 April, 2016.

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 for making 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
29 April, 2016
09 Vaisakha, 1937 (Saka)

HUKUM SINGH,
Chairperson,
Standing Committee on Water Resources

CHAPTER I

BUDGETARY ALLOCATIONS

1.1 A scarce natural resource, water is fundamental to life, livelihood, food security and sustainable development. India has more than 18 % of the world's population, but has only 4% of world's renewable water resources and 2.4% of world's land area. There are further limits on utilizable quantities of water owing to uneven distribution over time and space. In addition, there are challenges of frequent floods and droughts in one or the other part of the country. With a growing population and rising needs of a fast developing nation as well as the given indications of the impact of climate change, availability of utilizable water will be under further strain in future with the possibility of deepening water conflicts among different user groups.

1.2 The Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India is responsible for the development, conservation and management 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 have 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 neighboring countries.

Analysis of Demands for Grants (2016-17)

1.3 The detailed Demands for Grants in Demand No. 96 of the MoWR, RD&GR was laid on the table of Lok Sabha on 15 March, 2016. A total budgetary provision of Rs. 8,764.31 crore has been made for year 2016-17. The following table shows the allocation of Budget for the MoWR, RD&GR:-

Table – 1: Demands for Grants (2016-17)

(Demand No. 96)

(Rs. in crore / gross)

	Revenue	Capital	Total
Charged	--	4.00	4.00
Voted	8350.70	409.61	8760.31
Total	8350.70	413.61	8764.31

1.4 Total Demand is Rs. 8,764.31 crore which comprises Rs. 8,350.70 crore of Revenue section and Rs. 413.61 crore of Capital section. In comparison to last year, there is an increase of Rs. 2115.49 crore in Revenue section and Rs. 267.79 crore in Capital section - which were Rs. 6235.21 crore and Rs. 145.82 crore respectively in respect of the Revenue and Capital sections. Thus the total Demand has shown an increase of Rs. 2383.28 crore this year. The details of allocation of funds under Plan and Non-Plan sections pertaining to the MoWR, RD&GR since the year 2013-14 are given below:

Table – 2: Allocation of funds under Plan and Non-Plan since 2013-14

(Rs. in crore / gross)

Year	Plan	Non-Plan	Total
2013-14 (BE)	1512.00	590.65	2102.65
2013-14 (RE)	724.40	555.10	1,279.50
2013-14 (Actual)	543.52	551.19	1094.71
2014-15 (BE)	14,762.00	613.74	15,375.74
2014-15 (RE)	6912.00	628.83	7540.83
2014-15 (Actual)	4029.84	575.54	4605.38
2015-16(BE)	5732.00	649.03	6381.03
2015-16 (RE)	7456.49	633.89	8090.38
2015-16 (Actual) Till February, 2016	4758.56	571.63	5330.19
2016-17 (BE)	8025.00	739.31	8764.31

1.5 The Budgetary allocation of funds during the year 2015-16 of the Ministry of Water Resources, River Development and Ganga Rejuvenation was Rs. 6,381.03 crore, which was increased to Rs. 8,090.38 crore at RE stage. The actual utilization of funds was even lesser at Rs. 5,330.19 crore. On being asked by the Committee to furnish reasons for the increase in allocated funds by Rs. 1,709.30 crore at Revised Estimate stage during 2015-16, the Ministry, replied as follows:

“The main reasons for increased allocation at the RE stage in 2015-16 has been the focus on completion of identified 46 priority irrigation projects under the AIBP Scheme which can be completed in next five years. Out of these, 23 projects will be completed by March, 2017. The enhanced funding will help the State Governments in completing these projects in a time bound manner. The additional allocations provided at the RE stage are Rs. 2,500 crore for AIBP and CADWM and Rs. 300 crore for Polavaram Project, totalling

to Rs 2,800 crore. This additionality of Rs 2,800 crore was met by additional allocations of Rs. 1709.30 crore and remaining from the savings within the existing allocations of the Ministry.”

1.6 On being asked as to whether this drastic hike in allocations at RE stage was indicative of an accelerated pace of execution of various Plan schemes of the Government, the Ministry, in their reply, submitted as under:

“As stated in reply to point 1 above, the main reasons for increased allocation at the RE stage in 2015-16 has been the focus on completion of identified 46 priority irrigation projects under the AIBP Scheme, which can be completed in next five years. Out of these, 23 projects will be completed by March, 2017. The enhanced funding will help the State Governments in completing these projects in a time bound manner. The additional allocations provided at the RE stage are Rs. 2,500 crore for PMKSY (AIBP & CADWM) and Rs. 300 crore for Polavaram Project, totalling to Rs 2,800 crore.”

1.7 The Committee further enquired about the specify steps taken / being proposed to be taken to avoid drastic increase at RE stage during 2016-17 and also as to whether any study has been conducted to avoid such changes at RE stage in overall Budgetary allocations of funds and also under the different Heads of expenditure, given the fact that there has always been a substantial reduction / increase in the allocation of funds at RE stage during the last several years. To this query, the Ministry submitted a written note as follows:

“While no specific study has been undertaken, but efforts have been made to streamline the releases to the Projects under AIBP, CAD, SMI and RRR. Though irrigation is the focus and priority sector for the government, the allocation of funds, both at BE and RE stage depend upon the overall resource position of the government, pace of progress of

works under the identified projects, other issues such as procurement, land acquisition, contract related problems etc. As stated earlier, completion of 89 priority projects will need much higher funds and the Ministry may seek additional allocation of funds at RE stage. A new funding mechanism through NABARD has also been announced for which the modalities will be financed during the year. Implementation of 89 incomplete irrigation projects under AIBP would be fast tracked. This will help to irrigate 80.6 lakh hectares.”

1.8 In reply to a query, the Ministry have furnished the percentage of achievement of Plan targets in financial terms from 2007-08 (i.e. 11th Plan) onwards in terms of the Budgeted outlays and actual expenditure, which is reproduced below in a table:

Table -3 : Percentage of Achievement of Plan targets in financial terms from 2007-08 (11th Plan onwards)

(Rs. in crore)

Year	BE	RE	Actual Expenditure	%age of Achievement
2007-08	612.00	562.00	526.45	86.02
2008-09	612.00	562.00	464.24	75.85
2009-10	612.00	552.00	502.39	82.09
2010-11	712.00	572.00	530.71	74.54
2011-12	732.00	632.00	586.41	80.11
2012-13	1512.00	662.00	524.00	34.66
2013-14	1512.00	724.40	543.52	35.95
2014-15	14762.00	6912.00	4928.53	33.39
2015-16	5732.00	7456.49	4769.79 (up to Feb 2016)	83.21

Approvals by Expenditure Finance Committee

1.9 During examination of Demands for Grants (2015-16), the Committee had observed that lack of timely approvals by Expenditure Finance Committee (EFC) had resulted in non-utilization / under-utilization of funds in many schemes / projects. The Committee were, therefore, apprised that for getting speedy approvals / sanctions from the EFC for incurring expenditure under various schemes, "the Hon'ble Minister is holding periodic review meetings to ensure adherence to deadlines."

1.10 When asked about other concrete steps being taken by the Ministry to secure speedy approvals / sanctions from EFC for various schemes, thereby avoiding recurrent problem of fund under-utilization / non-utilization, the Ministry stated:

"At present no schemes/ projects is pending for approval of EFC in the Ministry and thus there was no problem of under utilization/non-utilization of funds in any scheme as regard with the approval of EFC. However, due to the periodic review meetings, the Ministry assessed the requirement of funds for the priority projects of PMKSY, AIBP etc and the same was demanded, which has been largely met by MoF."

1.11 Asked further about the extent the Ministry have tackled the issue of fund under-utilization due to lack of timely completion of formalities / procedures / approvals as already pointed out by the Committee in their 3rd Report, the Ministry in a written reply stated:

"At present stage, no scheme/project (is) pending for approval of EFC. However, if any issue will arise for approval of EFC, it would be resolved through prioritizing the subjects/schemes accordingly. During the current year, due to proper planning and release of additional funds by the Ministry of Finance, this Ministry has been able to spend higher allocations."

Rationalization of Minor Irrigation Statistics (RMIS) Scheme

1.12 A Centrally Sponsored Plan Scheme, "Rationalization of Minor Irrigation Statistics (RMIS)" was launched in 1987-88 in the Ministry of Water Resources, River Development & Ganga Rejuvenation with 100% assistance to the States/UTs. The main objective of the RMIS scheme is to build up a comprehensive and reliable database in the Minor Irrigation (MI) sector for the effective planning and policy making.

1.13 Giving an overview of the RMIS scheme, the Ministry stated that in the MI census, detailed information on irrigation sources, namely Dug-well, shallow tube-well, deep tube-well, surface flow and surface lift schemes including the irrigation potential created (IPC) and potential utilized (PU) is collected and compiled on a systematic basis throughout the country. Besides this, information on their ownership, the social class and holding size of the owner, number of electric / diesel devices used for lifting water is also collected. Information in respect of adoption of water and energy conserving devices such as sprinkler and drip irrigation, use of non-conventional energy sources such as solar pumps, wind mills is also collected in the MI census. The National Information Centre (NIC) unit in the Ministry of Water Resources, River Development & Ganga Rejuvenation is associated with processing of data and generation of tables. It is also further informed that the detailed data base on minor irrigation works in the country has been generated through 04 (four) censuses carried out under RMIS scheme so far with reference years 1986-87, 1993-94, 2000-01 and 2006-07 respectively. The Census Reports of 2nd, 3rd and 4th MI census are available on the website of the Ministry of Water Resources, River Development & Ganga Rejuvenation: www.wrmin.nic.in. The 5th Minor Irrigation census is being conducted with reference year 2013-14 in 34 States/UTs.

1.14 On being asked by the Committee about the updated status of the 5th MI census currently being conducted by the Ministry, the Committee were informed by the Ministry of Water Resources, River Development & Ganga Rejuvenation in a written reply submitted:

“Yes. Necessary steps to conduct 5th MI Census has been taken. The 5th MI Census with reference year 2013-14 is in progress. The target for release of 5th MI Census Report is March, 2017.”

1.15 Asked further whether any target has been set for completion of the 5th MI census, the Ministry in a written reply submitted:

“The state-wise status of 5th MI Census activities is being monitored regularly. It is submitted that

- An All India Training workshop was conducted in New Delhi on 25.02.2014 where State Govt. officials were invited and concepts/definitions, schedules and manuals to be used in the 5th MI Census were explained in detail.
- Six Regional Training Workshops including field training were conducted in the regions where States and UTs participated.
- Field work has been completed by 10 States and another 7 states have completed more than 84% of the field work. For other states necessary steps are being taken to expedite the field work. Regular monitoring of MI activities undertaken by the States through video conferencing is also put in place.
- Software for data entry and validation has been developed and forwarded to State Govts. for taking necessary action.
- Inspection visits for monitoring quality of field work were undertaken.
- Four Regional Training Workshops on Data Processing of 5th MI Census were conducted for imparting training on software where officials of the State Govt. participated.”

Inclusion of Water in the Concurrent List

1.16 It was pointed out during the evidence that despite repeated recommendations of the Committee, no action has been initiated by the Ministry to bring 'water', which is currently in the State List, under the Concurrent List of the Constitution.

1.17 When asked about the action taken by the Ministry in this regard, including the steps being proposed during 2016-17, the Ministry in a written reply submitted:

"The matter regarding bringing 'Water' in the Concurrent list has been raised from time to time. There has been growing demand by the professionals and civil society to bring 'water' in Concurrent list, primarily to ensure national perspective on water management and to avoid inter-State disputes and the tendencies of the State Governments to use more water (in excess of justified needs through efficient use) only to claim more apportionment of water in inter State rivers. However, the proposal to bring 'water' in concurrent list has been opposed by most of the States.

The matter regarding making 'Water' a Union/Concurrent List Subject was examined by the two Commissions on Centre State Relations chaired by Justice R.S. Sarkaria (1983-88) and Justice M.M. Punchhi (2007-10). The said proposal did not find favour with either of the two Commissions.

The matter requires extensive deliberations with the States and other stakeholders so that a broader consensus emerges in the matter.

However, the Ministry of Water Resources, River Development & Ganga Rejuvenation had constituted a Drafting Committee headed by Dr. Y.K. Alagh, on 3rd July, 2012 for Drafting of National Water Framework Law. The Committee submitted its report in May 2013. The Salient features of the draft National Water Framework Bill are at Annexure-I.

Further, the Ministry of Water Resources, River Development & Ganga Rejuvenation had constituted a Drafting Committee under the Chairmanship of Justice T.S. Doabia (Retd.) to study the activities that are required for optimum development of river basin and changes required in the existing River Board Act, 1956 for achievement of the same. The

Committee submitted its Report in November, 2012 and has prepared a Draft River Basin Management Bill.

The Draft National Water Framework Law and the draft River Basin Management Bill are under examination in this Ministry in consultation with different stakeholders. A Committee has been constituted under the Chairmanship of Dr. Mihir Shah to examine the draft National Water Framework Law and the draft River Basin Management Bill.

The objectives of better conservation, development and management of water resources are sought to be achieved through the Draft National Water Framework Law and the draft River Basin Management Bill.”

1.18 Asked further about the efforts by the Ministry to secure proper coordination between the Centre and the States on water policies, the Ministry also replied as under:

“The National Water Resources Council at its 6th meeting held on 28.12.2012 adopted the National Water Policy, 2012 which has inter-alia made several recommendations for conservation, management and development of water resources in the country. The copies of National Water Policy, 2012 have been forwarded to all the States/UTs for implementation and necessary action.

The matter is being regularly pursued with the State Governments for formulation of their State Water Polices on the lines of National Water Policy, 2012 and to take action for implementing the different provisions of the National Water Policy, 2012 relating to water conservation and management.

In addition, events like Jal Manthan, India Water Week etc. are also being organized by the Ministry to provide a platform to discuss the issues/ problems being faced by the State Govts. and for better coordination between the Centre and States in the field of water resources.”

Efficient Use of Irrigation Water

1.19 During evidence, it was also pointed out that in the States like Punjab, where flood irrigation method is prevalent, a lot of water to be extracted for the purpose. To control it, drip

and sprinkle irrigation systems are required to be introduced. Since these methods are cost prohibitive, the Government, therefore, needs to provide funds to the tune of 80% to poor farmers to enable them to switch to new systems.

1.20 When the Committee asked the Ministry to comment on the issue of adoption of drip and sprinkle irrigation in India specially in the State of Punjab, the Ministry furnished the following reply:

“New projects included under the CADWM programme during 12th Plan have to cover at least 10% of the CCA of each project under micro-irrigation. However, under this component, central assistance is provided to the States for development of common infrastructure to facilitate use of sprinkler/ drip irrigation systems as an alternative to on-farm development works i.e. for construction of stilling tank, pump house with power supply through grid /solar power system and feeder & conveyance pipelines based on topography, soil type and climate. No central assistance is provided under the CADWM programme for drip/sprinkler sets to avoid duplicity of central assistance. Farmers are to avail themselves of the assistance available under the extant scheme under the Ministry of Agriculture and Farmers’ Welfare for installation of on-farm distribution systems such as drip/sprinkler sets.”

1.21 Apprising the Committee further about action taken / proposed to be taken for adoption of drip and sprinkle irrigation, the Ministry submitted in a reply submitted:

“The Ministry has taken initiatives that the States adopt micro-irrigation systems as far as possible, especially for development of common infrastructure to facilitate use of sprinkler/ drip irrigation systems, in the command areas of new projects and the State of Punjab has already come forward with projects having micro-irrigation component upto 100% of CCA.”

Budget Allocations

1.22 As per information furnished to the Committee, the total Budget Estimates (BE) of the Ministry for the year 2016-17 is Rs. 8764.31 crore comprising of Plan allocation of Rs. 8025.00 crore and Non-Plan allocation of Rs. 739.31 crore. The total Budget allocations for 2016-17 showed an overall increase by 27.19% when compared to total Budget allocations of Rs. 6381.03 crore during 2015-16. The Committee also observe that against a total Budget Estimates (BE) of Rs. 6381.03 crore in 2015-16, the figure was increased during the same year by Rs. 1709.35 crore at the Revised Estimate (RE) stage. The reason put forth by the Ministry for such a big hike in allocation during 2015-16 has been the focus on completion of identified 46 priority irrigation projects under the Accelerated Irrigation Benefit Programme (AIBP) scheme, out of which 23 projects are expected to be completed by March, 2017. In this context, the Ministry have stated that the enhanced funding will help the State Governments in completing these projects in a time-bound manner. The Committee hope and expect that the 23 AIBP projects covered under the enhanced Budget allocations during 2016-17 - will achieve their targeted date of completion, i.e. March, 2017 through the concerted efforts of the Ministry / implementing agencies / concerned State Governments. The Committee would like to be apprised of the status of action being taken in this regard within three months of the presentation of this Report. Noting further that frequent reductions / increases of Budget allocations at Revised Estimate stage have become a norm with the Ministry over the last several years, the Committee also recommend that before projecting budgetary demands, the Ministry undertake some pre-Budget planning and exercises and then only frame achievable targets for both the Plan and Non-Plan schemes to have the more realistic and achievable Budget projections in future. Additionally, prior approval of NITI Ayog, EFC, etc. in respect of schemes to be included in Budget proposal each year, as also Rehabilitation &

Research issues, land acquisition hurdles, NOC etc. should also be sorted out for each of such projects well within the time. The Committee note in particular that no specific study has been undertaken by the Ministry to avoid drastic changes of allocations at RE stage but efforts have been made to streamline the releases (of funds) to the projects under AIBP, CAD, SMI and RRR and that a new funding mechanism through NABARD has also been announced, for which, the modalities will be financed during the year. They also note that implementation of 89 incomplete irrigation projects under AIBP would be fastracked, which will help to irrigate 80.6 lakh hectares. The Committee recommend that the Ministry should initiate a study on modalities to avoid the recurrent problems of changes in Budget allocations at RE stage year after year. The Committee would also like to see a positive outcome on the fastracked implementation of 89 incomplete AIBP projects during this financial year, 2016-17 itself. A report, in this regard, should be submitted to the Committee within the next six months.

Approvals by Expenditure Finance Committee

1.23 The Committee are encouraged to note the Ministry's reply that no schemes / projects are presently pending in the Ministry for approval of Expenditure Finance Committee (EFC), and that there was no problem of under-utilization or non-utilization of funds in any scheme on this count. The Committee further note that during the current year (2016-17), due to planning and release of additional funds by Ministry of Finance, the Ministry of Water Resources, River Development & Ganga Rejuvenation have been able to spend higher budgetary allocations. The Committee, therefore, recommend that Ministry should keep a strict vigil in this regard so as to make sure that no scope is left for the under-utilization or non-utilization of funds under any scheme as well during the next

financial year. The Committee also recommend that the funds are not only allocated on paper but also released in time so that the actual implementation of the schemes / projects by States / various implementing agencies is not hampered in any way.

Rationalization of Minor Irrigation Statistics scheme

1.24 The Committee observe that the Centrally-sponsored Plan scheme of "Rationalization of Minor Irrigation Statistics (RMIS)" was launched in 1987-88 with 100% assistance to the States / UTs - with the objective to build up a comprehensive and reliable database in the Minor Irrigation (MI) sector for effective planning and policy making. Under the scheme, the detailed database on the minor irrigation works in the country has been generated through 04 (four) censuses carried out with reference years 1986-87, 1993-94, 2000-01 and 2006-07 respectively. The 5th Minor Irrigation census is being conducted with reference year 2013-14 in 34 States / UTs, which is targeted for release in March, 2017. Noting that it comprises not only detailed information on dug-wells, tube-wells, surface flow / lift irrigation schemes, information on their ownership, social class, holding size of the owner, etc. but also vital information on adoption of water and energy conserving devices such as sprinkler and drip irrigation, use of non-conventional energy sources such as solar pumps, wind mills etc., are collected through Minor irrigation census exercises, the Committee strongly recommend that the 5th MI census be completed by its targeted date, i.e. March, 2017. They also desire that the detailed census information / data of all the MI censuses (viz. 1st, 2nd, 3rd, 4th and 5th) be compiled in a condensed, user-friendly format (State/UT wise) and uploaded on the website of the Ministry for the benefit of all the stake-holders / users, i.e. farmers,

students, academicians, planners, bureaucrats, etc. and that the Ministry initiate an achievable plan of action in this regard at the earliest. The Committee would like to be apprised of further progress made in this regard.

Inclusion of Water in the Concurrent List

1.25 The Committee note from the reply of the Ministry that although there has been growing demand by the professionals and civil society to bring 'water' in the Concurrent List of the Constitution, the proposal has been opposed by most of the States. Further, the proposal did not find favour with R. S. Sarkaria Commission (1983-88) and M. M. Punchhi Commission (2007-10) which examined the Centre-State relations. The Committee take note of the view of the Ministry that the matter requires extensive deliberations with the States and other stakeholders so that a broader consensus emerges in the matter. The Committee also take note that the objectives of better conservation, development and management of water resources are stated and sought to be achieved through the draft National Water Framework Law and the draft River Basin Management Bill - which are currently under examination in the Ministry in consultation with different stakeholders. Further, a Committee has been constituted under the Chairmanship of Dr. Mihir Shah to examine the draft National Water Framework Law and the draft River Basin Management Bill. The Committee, therefore, recommend that the Ministry should expeditiously wind up the process of enactment of the draft National Water Framework Law and the draft River Basin Management Bill which is at present under examination with them. They also want to see early outcome of the report of Dr. Mihir Shah Committee in the matter under intimation to them. In this connection, the Committee are, however, of the opinion that the proposed National Water Framework Law

will lack teeth if the subject 'water' is not brought under the Concurrent List of the Constitution, for the implementation of the proposed Framework Law will require coordinated, consultative action on the part of both the Centre and the States. The Committee, therefore, recommend that steps be initiated by the Government to again begin the much needed consultations with the States on the issue of bringing 'water' in the Concurrent List of the Constitution. Noting the fact that the proposals made to this end in the past have been opposed by most of the States, the Committee would, however, meanwhile like to be apprised of the names of the States opposing this proposal alongwith their grounds of their opposition.

Efficient Use of Irrigation Water

1.26 The Committee observe that in some States like Punjab where flood irrigation is prevalent, much water has to be extracted for the purpose. They also note that the Ministry have taken initiatives to adopt micro irrigation systems as far as possible for the development of common infrastructure to facilitate the use of sprinkler/drip irrigation systems in the command areas of new projects. The Committee are convinced that micro irrigation systems such as sprinkler/drip irrigation are the panacea to the drought-like situations prevailing in many water-scarce regions specially in the over-exploited, critical and semi-critical blocks of the country. The Committee, accordingly, recommend that much concerted efforts are needed to be made by the Government at the earliest to make micro irrigation as a popular movement all over the country so as to achieve the goal of efficient use of irrigation water. The Committee want to be apprised of initiatives taken by the Government in this regard within three months of the presentation of this Report.

CHAPTER II

MAJOR AND MEDIUM IRRIGATION

MAJOR IRRIGATION

2.1 The Budget (Plan) allocations for Major Irrigation in the Demands for Grants (2016-17) pertains allocations for only one Head, i.e. Polavaram Project Authority. The Allocation (Plan) for the years 2014-15, 2015-16 and 2016-17 is as follows:

Table – 4 : Budget allocations for Major Irrigation

(Rs. in crore/gross)

Actual 2014-15	BE 2015-16	RE 2015-16	BE 2016-17
--	100.00	400.00	100.00

The Budget allocation for Major Irrigation was Rs. 100.00 crore at BE 2015-16, which was hiked at RE stage to Rs. 400.00 crore, a substantial increase of Rs. 300.00 crore in the same year.

2.2 The Committee wanted to know the reasons for allocating a big increase to the tune of Rs. 400.00 crore at RE stage. To this query, the Ministry replied that the budget requirement for the Polavaram Project in the Financial Year was projected as Rs. 2054.48 crore against which BE provided was Rs. 100.00 crore only. The Ministry of Finance thereafter, was requested to provide the appropriate budget at RE stage, and consequently, an additional Rs. 300.00 crore was allocated to the project to fulfil its liabilities.

2.3 When asked to state if the reduction of allocation from Rs. 400.00 crore at RE 2015-16 to Rs. 100.00 in BE 2016-17 and indicate slowing down of the pace of execution of the Polavaram Project, the Ministry in a written reply submitted:

“During the FY 2016-17, the fund requirement for the project was projected as Rs.4439.08 crore. However, only Rs. 100 crore have been provided by the Government, which may slow down the project.”

MEDIUM IRRIGATION

2.4 Irrigation projects with a Cultivable Command Area (CCA) between 2,000 hectares and 10,000 hectare are classified as Medium Irrigation Projects.

2.5 The Budget allocations (Plan and Non-Plan) for the years 2014-15, 2015-16 and 2016-17 are as follows:

Table – 5 : Budget allocations for Medium Irrigation

(Rs. in crore/gross)

Actual 2014-15		BE 2015-16		RE 2015-16		BE 2016-17	
Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan	Plan	Non-Plan
477.34	257.33	327.20	282.09	246.85	270.31	467.44	320.51

2.6 The Budget allocation for Medium Irrigation in 2015-16 under Plan head was Rs. 327.20 crore, but it was reduced to Rs. 246.92 crore in the same year at RE stage. The Allocation for 2016-17 was increased to Rs. 467.44 crore as compared with BE 2015-16. The Non-Plan expenditure increased from Rs. 282.09 crore in 2015-16 to Rs. 320.51 crore in 2016-17 (BE). When asked by the Committee about the reasons for increasing Non-Plan expenditure under Medium Irrigation head in this financial year, the Ministry submitted:

“Non-Plan expenditure mostly involves salary and other establishment related expenditure where increase is basically due to hike in salary on account of Dearness Allowance, new recruitment, increase in cost of procurement of goods and services accounting for inflation etc.”

2.7 On being asked whether the Ministry have taken necessary steps to curb the tendency to increase allocations for Non-Plan expenditure and with what success, to the Ministry did not furnish any reply.

Repair, Renovation and Restoration of Water Bodies

2.8 A scheme for the Repair, Renovation and Restoration (RRR) of water bodies was launched in 2005. It has been stated that with the aim of covering water bodies that are larger than those covered under schemes such as IWMP and MGNREGA but smaller than those created under medium and major irrigation projects, the 12th Plan proposes a major overhaul of this scheme based on the lessons learnt so far as also drawing upon exemplary work done in some parts of the country by civil society organizations such as the DHAN Foundation in Tamil Nadu.

2.9 The Committee wanted to have an overview of the scheme of RRR of water bodies in India, including total funds allocated and physical achievements made since 2005. To this query, the Ministry submitted:

"To revive, restore and rehabilitate the traditional water bodies, The Government of India launched a Scheme for Repair, Renovation and Restoration (RRR) of water bodies which has multiple objectives like (i) comprehensive improvement and restoration of water bodies thereby increasing tank storage capacity, (ii) Ground Water Recharge, (iii) increased availability of drinking water, (iv) Improvement in agriculture/horticulture productivity, (v) Improvement of catchment areas of tank commands, (vi) Environmental benefits through improved water use efficiency; by promotion of conjunctive use of surface and ground water, (vii) Community participation and self-supporting system for sustainable management for each water body, and (viii) Capacity Building of communities, in better water management and Development of tourism, cultural activities, etc. by providing Central Grant to State Governments. After a pilot scheme in the 10th

Plan, two schemes of RRR, one with domestic support with an outlay of Rs. 1250 crore and other with external assistance with an outlay of Rs. 1500 crore were launched during 11th Plan. The continuation of the scheme for Repair, Renovation and Restoration of Water Bodies during 12th Plan was approved by the Union Government on 20.9.2013. A brief picture of achievement made so far is given in the table below:

Table – 6 : Physical and Financial achievements under the Scheme of RRR of Water Bodies since 2005

	No of water Bodies	Completed	Irrigation potential restored (Rs. in Lakh ha)	Achievement in %	Outlay (Rs. in crore)	CA Component (Rs. in crore)	Grant Released (Rs. in crore)
Pilot Scheme (2005)	1098	1085 (13 dropped)	0.78	100	300	225	197.3
XI Plan (domestic support)	3341	2501	1.195	75.50	1500	917.26	917.259
XII Plan (till date)	1342	38	0.07606	7.08	1000	6235	208.89*

* Up to 2014-15. During 2015-16, an outlay of Rs. 185 crore has been provided which is likely to be released to the concerned states."

2.10 When the Committee enquired about the total Budget allocations proposed during 2016-17 and how these are to be utilized for the RRR scheme, the Ministry submitted:

"The amount sought for PMSKY(SMI, CADWM, GW & RRR) was Rs. 2175 crore (including Rs. 400 crore for RRR) against which an outlay of Rs. 500 crore has been provided. Therefore, outlay for RRR is likely to be much lesser than sought. Available fund will be utilized for ongoing RRR schemes."

2.11 The Committee enquired as to whether the Government has carried out any survey about encroached water bodies in the country and if so, to give the findings of the surveys, including the time period of such survey and the funds allocated and incurred for the same. The Committee further asked whether any stringent action / penalty has been proposed for those guilty of willful encroachments of water bodies in the country. To these queries, the Ministry submitted:

"The works related to water resources development are undertaken by the concerned State Govts. From their own funds and priorities. Central Govt. act as catalyst by providing central assistance to eligible schemes as per the guidelines. Further, as per the guidelines for the implementation of RRR scheme, issued in Oct.,2013, State Government has to take necessary steps for declaring the water body boundary through a government order and to ensure removal of encroachment in the water body spread area/water body boundary before submitting the proposal for release of 2nd installment of grant for completion of the work on the water body under RRR.

Further elaborated:

In this context, Secretary M/o WR, RD & GR vide letter dated 26.2.2016 has issued an advisory to the States regarding encroachment on water bodies."

2.12 When asked whether the Census of water bodies in the country has been completed, the Ministry replied in the negative. On being further asked if any scientific study / mapping of water bodies in India been taken up, the Ministry in a written reply submitted:

"In the India-WRIS portal total no of water bodies indicated are 798908. Each water bodies have been assigned a unique identification number. The water bodies which provide minor irrigation are mapped by conducting minor irrigation census.

CWC & ISRO under DWRIS have collected information and created a portal under India-WRIS, a layer on water bodies has been developed in which 798908 water bodies have been mapped. A 16 digit code for these water bodies has been generated.

In addition, MI Census collects information on number of Minor Irrigation Structures of Ground Water and Surface Water used for irrigation in rural areas. There are five type of MI structures namely Dugwell, Deep Tubewell, Shallow Tubewell, Surface flow and Surface lift schemes. From Minor Irrigation Census information, data on water bodies is indirectly compiled but this information is limited to number of water bodies in villages used for minor irrigation."

Hydrology Project

2.13 Hydrology Project – II (HP-II) was being implemented with the World Bank assistance in thirteen States, viz. Andhra Pradesh, Chhattisgarh, Gujarat, Goa, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Odisha, Tamil Nadu, Puducherry and Punjab and eight Central Agencies viz. Central Water Commission (CWC), Central Ground Water Board (CGWB), National Institute of Hydrology (NIH), Central Water and Power Research Station (CWPRS), Central Pollution Control Board (CPCB), Bhakra Beas Management Board (BBMB), India Meteorological Department (IMD), and the Ministry of Water Resources, River Development & Ganga Rejuvenation. The estimated cost of the project was Rs. 631.83 crore. The World Bank funding was in the form of a loan of US \$104.94 million from International Bank for Reconstruction and Development (IBRD). The objective of the project was to extend and promote the sustained and effective use of Hydrological Information System (HIS) by all potential users concerned with Water Resources planning and management both in public and private. The project was started in April, 2006 and has been completed on 31 May, 2014.

2.14 Giving further information on Hydrology Project, the Ministry submitted a written reply as follows:

“Hydrology Project Phase-I (HP-I) was implemented in 9 Peninsular States and 6 Central Government organizations of the country during the period 1996-2003 with World Banks assistance at an estimated cost of about Rs 605 crore for water resources data collection, storage and dissemination. Hydrology Project Phase-II (HP-II) was implemented at an estimated cost of Rs. 631.83 crore during 2006-2014 in 13 States and 8 Central Organizations as a follow-up of HP-I and focused on increased geographical coverage and analytical usage of Hydrological Information System (HIS) created under HP-I. The projects aimed at establishment of Hydro-meteorological monitoring network and data centres, developing protocols for data collection, collation, storage and dissemination of hydro-met data. The Project also piloted the development of Decision Support Systems for water resources planning, Flood forecasting and Reservoir Operations, Pilot project on Aquifer mapping for setting the protocols for the flagship programme NAQUIM of the MoWR, RD &GR.”

2.15 Regarding the objectives of Hydrology Project and the extent of achievement of these objectives, the Ministry furnished the following information:

“The objectives of HP-II are:

(a) To extend and promote the sustained and effective use of HIS by all implementing agencies in 13 States and 8 Central agencies as given below:

States		Central Agencies	
1.	Andhra Pradesh	1.	Bhakra Beas Management Board
2.	Chhattisgarh	2.	Central Water Commission
3.	Goa	3.	Central Ground Water Board
4.	Gujarat	4.	Central Water & Power Research Station
5.	Himachal Pradesh	5.	Central Pollution Control Board
6.	Karnataka	6.	Indian Meteorological Department
7.	Madhya Pradesh	7.	National Institute of Hydrology
8.	Maharashtra	8.	Ministry of Water Resources

9.	Orissa	
10.	Punjab	
11.	Puducherry	
12.	Tamil Nadu	
13.	Kerala	

(b) Strengthening the capabilities of implementing agencies at state/central level in using HIS for efficient water resource planning and management;

(c) To achieve awareness building and outreach services about HIS use.

HP-I and HP-II had several accomplishments and benefits for water resources management in the States and Organisations where the projects were implemented, viz.:

- Establishment and consolidation of Modernized and standardized Water Resources Measurement System through procurement and commissioning of innovative hydro-meteorological equipment like - Automatic /Digital water level recorders, Radar sensors, Acoustic Doppler Current Profilers, etc.; Weather/Climatic equipment like - Automatic Weather Stations, Rain Gauges, Snow Pillows; Geophysical Equipment like – Resistivity meters, loggers, etc.; Water quality equipment like - Atomic Absorption Spectrophotometers, UV Spectrophotometers, etc.; IT related hardware, software etc. The reliable and automated data generated from these equipment goes as a direct input to Centralized database system namely India Water Resources Information System (India-WRIS) and Surface Water Information System (e-SWIS), Ground Water Estimation & Management System (e-GEMS).

- Introduction to applications of latest technology, through

- a. Development of software for national level standardized data storage and dissemination;

- b. Development of various national web based applications, like e-GEMS (Ground Water Estimation & Management System), e-SWIS (Surface Water Information System), e-WQIS (Water Quality Information System) etc.

- c. Development of Real Time Decision Support Systems for Flood Forecasting and Reservoir Operations by Bhakra Beas Management Board and by Maharashtra Water Resources Department
- d. Development of Decision Support System - Planning for 13 river sub basins in 9 States for water resources planning, conjunctive use etc.
- e. Development of Hydrological Design Aids (HDA) for designing cost effective irrigation and hydraulic structures.
- f. Establishment of 13 no. of Real-time Water Quality Monitoring Systems in Ganga river basin.
- g. Application of advanced geophysical surveys, including Heliborne survey for aquifer mapping for the first time in the country.
- Establishment of protocols for inter-agency data collection, collation, processing and validation.

Capacity building through establishment of State and District level data centers, water quality labs; Capacity building of officers and staff through regular trainings, workshops etc.”

2.16 Asked about the amounts of funds received from the IBRD and spent on Hydrology Project (year-wise), the Ministry furnished the following information:

Table – 7 : Year-wise financial assistance received from IBRD on Hydrology Project

Hydrology Project (Phase-I)

Year	Amount (in M USD)
1996	4.00
1997	2.07
1998	6.19
1999	15.84
2000	16.84
2001	15.40
2002	14.77
2003	13.14
2004	10.70

2005	-3.99
Total	94.95

Hydrology Project (Phase-II)

Year	Amount (in M USD)
2006	0.52
2007	11.28
2008	2.30
2009	6.61
2010	6.95
2011	13.47
2012	9.59
2013	22.09
2014	9.12
2015	9.64
Total	91.58

2.17 The Committee wanted to know about the monitoring mechanism put in place to monitor the progress of Hydrology Project. To this query, the Ministry replied:

“It has been envisaged to establish a web based Management Information System (MIS) for monitoring the physical and financial progress. The MIS shall require monthly updation by all the implementing agencies.”

2.18 The Ministry have further stated that the State and Central Implementing Agencies have constituted a Project Monitoring Unit (PMU). States have also finalized the Project Implementation Plans for their respective Agencies.

2.19 When asked whether the loan assistance received from World Bank has been fully repaid, the Ministry submitted:

"The loan assistance from the World Bank has not yet been fully repaid. As per the Loan Agreement for HP-II, the last amortization of the loan amount is scheduled for 15th September, 2024."

National Projects

2.20 The Union Cabinet in its meeting held on 7th February, 2008 gave its consent to the proposal of the Ministry of Water Resources, River Development & Ganga Rejuvenation implementation of National Projects with Central Assistance of 90% of the cost of the project. So far, 16 projects have been selected in the scheme of National Projects. Gosikhurd Irrigation Project (Maharashtra), Teesta Barrage Project (West Bengal), Shahpur Kandi Project (Punjab) and Saryu Nahar Pariyojana (UP) have been funded under scheme of National Projects. The scheme of National Projects has been approved for continuation and implementation in the 12th Plan (2012-17) by the Cabinet Committee on Economic Affairs on 12.09.2013.

2.21 Apprising the Committee about the 16 National Projects, the Ministry in a written reply further submitted:

"There are 4 Projects presently under execution apart from Indira Sagar Polavaram Project. All other Projects are under appraisal, Detailed Project Report stage or under Project Feasibility Report Stage."

The Ministry also, inter-alia, furnished the present status of National Projects, project-wise including fund allocation target date of completion, bottlenecks etc. which have been reproduced at Annexure – II.

2.22 When the Committee enquired during evidence as to whether the Central Government has cleared the Chevella – Kaleshwaram Project as a national project, the Ministry submitted:

"The Detailed Project Report (DPR) of Dr B R Ambedkar Pranahita-Chevella Sujala Sravanthi Project was submitted to CWC by Govt of Telangana (erstwhile Andhra

Pradesh). The techno-economic appraisal was done and shortcomings were noticed in the Planning Aspects of Project which were communicated to State Government accordingly. The State Government agreed to revise the DPR as informed during the visit of Additional Secretary, MoWR, RD & GR on 05.09.15. The revised DPR is yet to be submitted by the State Government.

The Preliminary Report of Kaleshwaram Lift Irrigation scheme to lift 4.50 TMC water from Godavari River near Kannepalli village was submitted by Govt. of Telengana (erstwhile Andhra Pradesh) in December 2012 to accord 'In principle' consent for preparation of DPR. The proposal was examined by CWC and certain suggestions/views were communicated to State Govt. during March-July 2013 on planning parameters i.e. Water assessment, Irrigation planning and Interstate with a request to address the issues. The State Govt. has not submitted the compliance till date, hence Preliminary Project Report is deemed to be returned to State Govt.

The process of inclusion of the Integrated Chevella-Kaleshwaram Project in the scheme of National Project can only be examined after the State Government submit the requisite DPR as mentioned above and it is accepted by Advisory Committee of MoWR, RD & GR and investment clearance of the project is available for the same.

Therefore, necessary action in this regard is to be taken by the Government of Telangana."

2.23 The Committee also pointed out during evidence that there have been oppositions to the Polavaram Project about projected population displacement estimated to be about 3000 or 4000 in the States of Chhattisgarh and Odisha due to this Project. Further, the State of Odisha has even filed a Petition in the Hon'ble Supreme Court about the disputes. Asked to comment on the issue, the Ministry have in a written statement submitted:

"As intimated by Polavaram Project Authority (PPA)/State Government, due to construction of Polavaram Irrigation Project, there will be submergence of eight revenue villages of Malkangiri district in Odisha State displacing 6,316 persons in 1002 Project affected Families (PAFs) (including 913 Scheduled Tribe PAFs). The extent of

submergence in Odisha State as per detailed Survey conducted by Andhra Pradesh is 648.05 ha (inclusive of 102.16 ha of reserve forest), which falls within the flood margins of Sabari river. The extent of submergence in Chhattisgarh State is 795.59 ha in four villages of Sukuma district displacing 11766 persons in 2335 PAFs (including 1294 Scheduled Tribe PAFs) and falls within the flood margin of Sabari river. These submergences would occur, if no meditative measures are taken.

The States of Odisha and Chhattisgarh are opposing to submergence of their lands and properties situated within their territories.

By providing remedial measures i.e., by forming protective embankments for a length of 30 km along the Sileru and Sabari Rivers in the State of Odisha, and 29.12 km along the Sabari river in Chhattisgarh, the submergence in the territories of Odisha and Chhattisgarh can be avoided completely.

In order to completely avoid submergence of lands and properties above RL +150 ft i.e. FRL of the Project, in the territory of Odisha State and to protect the interests of tribal people, the Government of Andhra Pradesh proposed to provide protective embankments with adequate drainage sluices along Sileru river, as per the directions of the Ministry of Environment and Forests, Ministry of Tribal Affairs, Central Water Commission and other statutory bodies as per the provisions of Inter State Agreement dated 02.04.1980 and GWDT Award.

After taking into consideration the views expressed by the concerned States (Odisha and Chhattisgarh) and the recommendation of Central Empowered Committee (CEC) as well as the report of Central Water Commission dated 11.04.2007 and resolution of Gram Sabhas conducted as PESA Act 1986 in the affected areas of Polavaram Project, the Ministry of Tribal Affairs, Government of India granted clearance of R&R plan of STs PAFs in respect of construction of Polavaram Irrigation Project vide F. No. 2011/15/2015-CP&R (NGO), dated 17.04.2007 with certain conditions.

The Government of Andhra Pradesh has given assurance to form and maintain the protective embankments including drainage/pumping arrangement so that no land will be

submerged in Odisha and Chhattisgarh States and there will not be displacement of any population in these two States.

Further, the State of Odisha has filed a petition in the Hon'ble Supreme Court, which is yet to be decided."

Budget Allocation (Medium Irrigation)

2.24 The Committee observe that the Budget allocation for Non-Plan expenditure increased from Rs. 282.09 crore in 2015-16 (BE) to Rs. 320.51 crore in 2016-17. The reasons attributed by the Ministry to this increase was basically due to hike on account of Dearness Allowance, new recruitment, increase in cost of procurement of goods and services, accounting for inflation, etc. The Committee also note with dismay that the Ministry have not furnished information about the steps taken by them to curb the tendency to increase allocations for the Non-Plan expenditure, which is indicative of the casual approach of the Ministry towards the issue of proper Budgetary projections, allocations and fund utilizations. The Committee strongly recommend that the Ministry make all-out efforts to achieve full utilization of the allocation of Rs. 320.51 crore made towards Non-Plan expenditure in 2016-17 - while at the same time making continuous efforts for curbing the general tendency towards increasing expenditure under this Head year after year. They also recommend that concrete steps be taken by the Ministry to avoid drastic reduction of Rs. 467.44 crore allocated for Plan expenditure in 2016-17 at RE stage

Repair, Renovation and Restoration of Water Bodies

2.25 The Committee note that under the pilot scheme on Repair, Renovation and Restoration (RRR) of water bodies initiated in 2005, a total of 1098 water bodies were taken up, out of which 1085 water bodies were completed and irrigation potential of 0.78 lakh hectare was restored through Rs. 197.3 crore released as Central grant. After the pilot scheme, two schemes of RRR of water bodies, one with domestic support with an outlay of Rs. 1250 crore and another with external assistance with an outlay of Rs. 1500 crore, were launched during 12th Plan. Under the RRR scheme with domestic support, Rs. 917.259 crore were released as Grant during 11th Plan for 3341 water bodies, out of which 2501 were completed and 1.195 lakh hectare of irrigation potential restored. While noting the Ministry's reply that Rs. 2175 crore was sought for allocation for PMSKY (SMI, CADWM, GW&RRR) during 2016-17, the Committee were surprised to know that only Rs. 500 crore was provided, meaning thereby that allocation for RRR scheme would be still much less than adequate. Further, the little available fund allocated will be utilized for only ongoing RRR schemes. The Committee further note, in this connection, that a query was made by the Committee to the Ministry as to whether the Government has carried out any survey about encroached water bodies in the country, and also whether any stringent action / penalty has been proposed for those guilty of willful encroachments of water bodies in the country. Sadly however, the reply of the Ministry in the matter shows that the Government is putting the onus on the shoulder of State Governments on the plea that the works related to water resources development are taken by the concerned State Governments and that the Central Government act as catalyst by providing Central Assistance to eligible schemes as per the guidelines. The Committee want the Ministry to take a proactive role with regard to RRR of water bodies in the country. Noting further

that the guidelines issued in October, 2013 for implementation of the RRR scheme enjoins the State Governments to take steps for declaring the water body boundary through a government order and to ensure removal of encroachment in the water body before submitting the proposal for release of 2nd installment of grant for the RRR scheme, the Committee recommend that the Government keep strict tab on the State Governments to ensure that these guidelines are scrupulously complied with by them before release of funds or approval of projects under the RRR scheme. The Committee also recommend that the Ministry within three months of presentation of this Report issue common, mandatory guideline to all States / UTs enjoining them to identify, record and compile the number of encroached water bodies in their territories and complete the exercise within a year for purpose of compiling a national database at the Centre in this regard. They further recommend that the Ministry vigorously pursue all the concerned States / UTs through consultation, meetings, etc. to ensure that the advisory issued by Secretary, Ministry of Water Resources, River Development and Ganga Rejuvenation on 26 February, 2016 is duly complied and the guilty (if any) are punished in case of the encroachments on the water bodies. The Committee also categorically desire that a scientific study / mapping of water bodies be taken up on priority basis by the Ministry and the Committee be apprised of the results of such study / mapping.

Hydrology Project

2.26 The Committee note that Hydrology Project (HP) was implemented during 1996-2003 with World Bank assistance in 9 peninsular States and 6 Central Government Organisations at an estimated cost of about Rs. 605 crore for water resources data

collection, storage and dissemination. During 2006-14, Hydrology Project Phase – II was implemented in 13 States and 8 Central organizations at an estimated cost of Rs. 631.83 crore as a follow up of HP-I and which focused on increased geographical coverage and analytical usage of Hydrological Information System (HIS) created under HP – I. The Committee note that a total of Rs. 94.95 crore was received from the World Bank (IBRD) on Hydrology Project Phase – I between 1996 and 2005 and a total of Rs. 91.58 crore was received for Hydrology Project Phase – II between 2006 and 2015. The Committee are encouraged to further note that HP-I and HP-II had achieved several accomplishments in the States and Organizations - where the projects were implemented, viz. (i) establishment and consolidation of modernized and standardized water resources measurement system through the procurement and commissioning of innovative hydro-meteorological equipment like automatic / digital water level recorders, radar sensors etc., weather / climatic equipment like Automatic Weather Stations, Snow Pillows etc, Geophysical equipment like meters, logges etc, water quality equipment like Atomic Absorption Spectrophotometers, UV Spectrophotometers etc, IT related hardware, software etc. (ii) introduction to applications of latest technology through development of software for national level standardized data storage and dissemination, development of various national web based applications like e-GEMS (Ground Water Estimation and Management System), e-SWIS (surfaced water information system), e-WQIS (water quality information system), development of Real Time Decision Support Systems for Flood Forecasting and Reservoir Operators by Bhakra Beas Management Board and by Maharashtra Water Resources Department, Development of 13 no. of Real Time Water Quality Monitoring Systems in Ganga river basins, application of advanced geophysical surveys, including Heliborne survey for aquifer mapping for the first time in the country etc. (iii)

establishment of protocols for inter-agency data collection, collation, processing and validation and (iv) capacity building through establishment of State and District level data centres, water quality labs and through regular training and workshops etc. The Committee want the Ministry to keep a tab on the implementation of Hydrology Project so that the country derive maximum benefits from it on water resources front. The Committee also note that the Ministry has envisaged to establish a web based Management Information System (MIS) for monitoring the physical and financial progress of the Hydrology Project - which shall require monthly updation by all the implementing agencies. Besides, the Committee also note that the State and Central implementing Agencies have constituted a Project Monitoring Unit (PMU) and also States have finalized the project implementation plans for their respective Agencies. The Committee, therefore, recommend that the Ministry should take up the matter with the States in order to have their project implementation plans concretised at the ground level at the earliest. The Committee would like to be apprised of further development in the matter.

National Projects

2.27 The Committee note that 16 National Projects have been approved by the Government for implementation in the country. However, although the proposal was approved as early as 2008, only 4 National Projects apart from Indira Sagar Polavaram Project are presently under execution, viz. Gosikhurd Irrigation Project (Maharashtra), Shahpurkandi Dam Project (Punjab), Teesta Barrage Project (West Bengal) and Sanju-Nahar Pariyojana Project (Uttar Pradesh), while the remaining 10 National Projects have been under appraisal, Detailed Project Report (DPR) stage or under Project Feasibility

Report (PFR) stage. The Committee are further distressed to observe that even the 5 National Projects reportedly under execution / implementation are at present facing hurdles in their smooth execution due to various problems like land acquisition, R&R issue, inter-State disputes etc. due to which at least 3 of those National Projects have passed well beyond their targeted date of completion (i.e. March, 2015) viz. Goshikhurd Irrigation Project (Maharashtra), Shahpurkandi Dam Project (Punjab) and Teesta Barrage Project (West Bengal). Even for the remaining National Projects which are under appraisal, DPR stage or under Project Feasibility Report stage, no targets have been fixed for their timely / scheduled completion, even as the Sanju-Nahar Pariyojna Project is targeted to be completed by March, 2017. The Committee recommend that the Ministry should promptly initiate action in consultation with the concerned State Governments to sort out the issues / hurdles that have led to 3 National Projects failing to meet their targeted date of completion (March, 2015) viz. Gosikhurd Irrigation Project (Maharashtra), Shahpurkandi Dam Project (Punjab) and Teesta Barrage Project (West Bengal). They also recommend that concerted efforts should be made by the Ministry to achieve the completion of Saryu-Nahar Pariyojna Project (Uttar Pradesh) in coordination with the State Government of Uttar Pradesh - which is targeted by March, 2017. The Committee further recommend that realistic, achievable targets be also fixed for timely completion of the remaining National Projects which are at various stages of execution appraisal, DPR stage or under PFR stage after addressing all contentious issues in consultation with the concerned States, viz. Indira Sagar Polavaram Project (Andhra Pradesh), Lakhwar – Vyasi Multipurpose Project (Uttarakhand), Renuka Dam Project (Himachal Pradesh), Ujh Multipurpose Project (Jammu & Kashmir), Kishau Multipurpose Project (Himachal Pradesh / Uttarakhand), Ken-Betwa Link Project (Madhya Pradesh), Kulsi Dam Project

(Assam), Noa-Dihing Dam Project (Arunachal Pradesh), Bursar HE Project (Jammu & Kashmir), Gyspa HE Project (Himachal Pradesh), 2nd Ravi-Vyas Link Project (Punjab) and Upper Siang Project (Arunachal Pradesh). The Committee would like to be updated of the action taken in the matter. The Committee would also like that the Dr. B. R. Ambedkar Pranahita – Chevella Project should also be expedited and to this end, necessary consultations with the State Government of Telangana be initiated by the Ministry at the earliest to avoid cost and time escalations. The Committee would further like to be apprised of action taken in this regard.

CHAPTER III

MINOR IRRIGATION

Ground Water Management & Regulation

3.1 The Ground Water Management & Regulation (GWM&R) scheme was launched with the merger of some 10th Plan Scheme at a cost of Rs. 460 crore for implementation by the Central Ground Water Board (CGWB) during 11th Plan.

The Budget allocation for Ground Water Management & Regulation (Plan scheme) is given below:

Table – 9 : Budget allocations for Ground Water Management & Regulation

(Rs. in crore / gross)			
Actual 2014-15	Budget Estimate 2015-16	Revised Estimate 2015-16	Budget Estimate 2016-17
138.21	188.00	188.00	328.38

3.2 The Budget Allocations were kept at Rs. 188.00 crore during 2015-16 at RE stage, which was the same as BE 2015-16. But the allocations were again increased at BE 2016-17 to Rs. 328.38 crore despite actual expenditure at Rs. 138.21 crore in 2014-15. When asked the reason for the Ministry to increase the Budget allocation from Rs. 188.00 crore in BE 2015-16 to Rs. 328.38 crore in BE 2016-17, the Ministry submitted:

“The increased allocation during 2015-16 and 2016-17 is slated for undertaking data generation activities for aquifer mapping in 8 priority states through outsourcing.”

3.3 When asked about the regulatory tools available with the Ministry / authorities to control the excess withdrawal of ground water and its wasteful wages and to what extent these have been effective in practical use, the Ministry in a written reply stated:

“Water being a State subject, legislation for Regulation and management of ground water is to be enacted by the States. Ministry of WR, RD & GR has circulated Model Bill for regulation and control of Ground Water to all the States/UTs (2005) in order to enable them to enact suitable legislation for regulation and control of ground water development. So far 15 states have enacted Ground Water Legislation.

In addition, Central Ground Water Authority has been constituted under Environmental Protection Act (1986) to control and regulate ground water withdrawal. So far, CGWA has notified 162 areas in the country for regulation of ground water development and management.”

3.4 Regarding the physical achievements of the Ground Water Management & Regulation scheme during 12th Plan (i.e. 2012-13 to 2015-16 as on 29 February, 2016), the Ministry also furnished the following information:

“The major achievement are:-

1. Compilation of existing data (Target- 8.89 lakh sq.km.)

The targets of various activities envisaged in the programme such as data collection & compilation have been completed for the entire area of 8.89 lakh sq.km.

2. Identification of Data Gap(Target- 8.89 lakh sq.km.)

The targets of various activities envisaged in the programme such as data gap analysis have been completed for the entire area of 8.89 lakh sq.km.

3. Data Generation Activities

- The pilot projects on Aquifer Mapping covering an area of 3006 sq.km. in the states of Bihar, Rajasthan, Maharashtra, Karnataka and Tamil Nadu has been completed.
- Aquifer mapping has been completed in NCR area in states of Uttar Pradesh, Haryana and Delhi encompassing an area of 26185 sq.km and ground water Management Plan have been prepared.

- 9988 nos Vertical Electrical Sounding (VES) and 430 nos bore hole logging have been conducted.
- 3037 nos ground water exploration wells have been constructed.
- 98184 ground water samples have been analyzed.

4. Aquifer Map and Aquifer Management Plan

- The Aquifer Map and Aquifer Management Plan for Pilot Project areas are prepared. Reports have been finalized and uploaded in the website of the department.
- Aquifer mapping and Aquifer Management Plan has been completed in NCR area in states of Uttar Pradesh, Haryana and Delhi encompassing an area of 26185 sq.km.
- Based upon high level of ground water extraction for addressing over-exploited/critical assessment units, aquifer-mapping area has been reprioritized in 8 states and Bundelkhand Region incorporating an area of 5.25 lakh sq.km. The states are Haryana, Punjab, Rajasthan, Gujarat, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu and Bundelkhand areas of Uttar Pradesh and Madhya Pradesh. Action plans for each state has been prepared.
- State-wise progress under National Aquifer Mapping and Management Programme in the last three years is given in Annexure III.”

3.5 According to Secretary, Ministry of Water Resources, River Development & Ganga Rejuvenation, there is 23 lakh hectare mappable area, and the Aquifer Mapping is expected to be completed by 12th & 13th Plan.

3.6 When asked as to how the Ministry have proposed to achieve the ambitious goal of mapping 23 lakh hectare by 13th Plan, the Ministry in a written reply submitted:

“Aquifer Mapping, which started in the 12th Plan, is a flagship programme of the Ministry, is expected to complete more than 5 lakh sq. km. by 2016-17. The remaining areas of total target 8.89 lakh sq km will be completed by 2017-18, thereby completing the entire targeted area of 12th Plan. The remaining mappable area of more than 14 lakh sq km will be covered in phases during 2017-22 period, during which the activities related to Aquifer Mapping will be carried out.”

3.7 The Ministry have further stated that in order to secure coordinated efforts of the Central and State Government to achieve this goal, the concerned departments of State Governments have been associated with CGWB in various activities related to Aquifer Mapping . State Ground Water Coordination Committees have also been constituted in most of the States in this regard.

3.8 On being asked about the target set and funds allocated for Aquifer Mapping programme in this financial year 2016-17, the Ministry replied as follows

“It is envisaged to cover around 3 lakh sq km area for aquifer mapping during 2016-17. The fund allocated under GWM&R scheme is Rs 303.39 cr.”

3.9 Asked further whether Government has initiated any study on aquifers getting contaminated in rural India due to large numbers of latrines constructed under Swachh Bharat Mission, the Ministry have replied that no such study is being taken up by the CGWB.

3.10 On being specifically asked by the Committee as to whether the allocated funds for Aquifer Mapping Programme during the year 2016-17 would be adequate to achieve the desired goal, thereunder the Ministry submitted that the funds allocated will not be adequate to achieve the targets. The requirement of funds ranges from Rs. 700 to Rs. 800 crore annually.

Rajiv Gandhi National Training & Research Institute for Ground Water

3.11 The Budget allocation for Rajiv Gandhi National Training & Research Institute for Ground Water (Rajiv Gandhi NGWT&RI) is given in a table as follows:

Table – 10 : Budget allocations for Rajiv Gandhi NGWT & RI
(Rs. in Crore)

Actual 2014-15	Budget Estimate 2015-16	Revised Estimate 2015-16	Budget Estimate 2016-17
5.11	7.0	6.65	8.0

3.12 Giving an overview of the Rajiv Gandhi National Training & Research Institute for Ground Water (Rajiv Gandhi NGWT&RI), the Ministry submitted:

“RGI plan scheme was first adopted during 9th five year plan and is running continuously since 1997. The Rajiv Gandhi National Ground Water Training and Research Institute (RGI) is only central institute of its kind catering the needs not only of Central Ground Water Board but also acting as key resource center for many of the institutions like Rajiv Gandhi Drinking Water Mission, Public Health and Engineering Departments, World Bank aided Hydrology Project in the Country and State Groundwater agencies etc.

The challenges faced by the country with regard to ground water management and regulation are to be handled by a multidisciplinary single organization having expertise in all the areas of ground water management and regulation at one place to facilitate comprehensive understanding of the problem and finding solution for the same through aquifer mapping.

Considering the emerging problems of sustainable ground water management being faced in the country. For proper planning, sustainable development and management of ground water resources, its extent and disposition need to be fully delineated aquifer wise. It is therefore essential that the professionals handling this resource are adequately and appropriately equipped with practical training including knowledge of new and innovative technologies. It is also necessary that skill is developed among grass-root level workers in the management. As per an estimate within the country about 10000 professionals, 20000 sub-professionals and nearly 100000 skilled personnel are employed in the work of ground water investigation, development and management. Training facilities in the groundwater sub-sector in the country are meager. The CGWB is playing its role in organizing various programme but faces inadequate facilities and organizational set-up. Therefore strengthening of the CGWB infrastructure and manpower to handle its training and research activities is highly essential. Professionals have to be trained overseas in the application of advanced technologies to ground water investigations, development and management programs, and benchmarking of practices and technology used. Further applied research in the fields of ground water is lacking except work done by CGWB to a limited extent. A high level multidisciplinary committee constituted in 1990 had strongly recommended establishment of a National Institute for Ground Water Research & Training and organization of all India coordinated research projects involving appropriate institution and universities, in order to foster the growth of a national grid of R&D institutions covering different aspects of ground water conservation and utilization.

In 12th Plan, RGNGWTRI Plan Scheme is a component of HRD and Capacity Building Scheme of MoWR, RD & GR. During 12th Plan, Rajiv Gandhi National Ground Water Training and Research Institute (RGNGWTRI) is implementing a three tier training programme keeping in view the capacity building requirements of professionals of CGWB, different State and Central Govt. Agencies and other organizations in the field of ground water with a special emphasis on the requirements of the National Project on Aquifer Management.

- Aquifer Level: Capacity building to rural youth to enable them to function as para-hydrogeologists, capable of providing information on the status of groundwater at the aquifer level to strengthen the groundwater planning by Panchayat, thus promoting groundwater equitability and sustainability.
- State Level: Training at State Government level to built capacity mainly groundwater staff to assess the status of their aquifers and for developing suitable policy and programmers.
- National Level: Capacity building for national and regional organizations to develop standards of mapping aquifer, groundwater assessment and capacity building.

These trainings are aimed at over all capacity building in ground water sector and creation of a trained workforce for implementation of National Project on Aquifer Management for sustainable development of ground water resources. The approved out lay of RGI component is 90 crores for targeted 1646 (174+222+1250) training courses.

The main objectives of the scheme are:

- To be an international center of excellence in Training, Research and Development in the groundwater sector
- To provide training to ground water professionals and sub-professionals in various fields of ground water
- To train NGO, PRIs and other stake holders of ground water
- To train various stake holders for taking up ground water monitoring and data collection work for Aquifer Mapping under Participatory Ground Water Management Program of National Project on Aquifer Management (NAQUIM)
- To undertake Research and development works in Ground Water Sector."

3.13 Regarding the achievements made by Rajiv Gandhi NGWT&RI during 12th Plan pertaining to training programme, the Ministry furnished the information as reproduced below:

Table – 11 : Achievements of Rajiv Gandhi NGWT & RI during 12th Plan for training programme

Trainings conducted under aegis of RGNGWTR I	Tier-I training (National Level)		Tier-II training (State level)		Tier-III training (Block level)		Total Trainings	
	No. of trainings	No. of trainees	No. of trainings	No. of trainees	No. of trainings	No. of trainees	No. of trainings	No. of trainees
2012-13	32	565	36	1160	100	15640	168	17365
2013-14	32	486	36	1112	97	12686	165	14284
2014-15	33	581	50	1615	*35	4930	118	7126
2015-16 (up to Feb, 2016)	31	624	*20	640	*29	4319	80	5583
Total	128	2256	142	4527	261	37575	531	44358

*Targets reduced due to non-availability of funds.

3.14 The Ministry also informed that the Rajiv Gandhi NGWT&RI has been taking up R&D studies which are still in progress, including (i) Surface water-groundwater interaction through stable isotope studies with PRL, Ahmedabad; (ii) Mathematical modelling based approach for Sustainability of aquifer system underlying Bemetara Block, Chhattisgarh; (iii) Per-chlorate contamination in parts of Kerala State with NIIST, Thiruvananthapuram; (iv) Artificial Intelligence in ground water management with IIT, Kharagpur (proposal). Other achievements of the Institute include the following:

- Six papers and one keynote address presented in National/ International Seminars.
- Three Research publications in Peer reviewed International Journals.
- Android App developed for Dissemination of groundwater data available in Google Play.
- Android App on Designing of Artificial Recharge Structure is under development.
- RGNGWTRI has adopted the Training Policy of Ministry of Water Resources, RD & GR(2014) and is under Implementation.
- Has created a training database.

- Mandatory trainings including induction trainings at various levels have been worked out.
- Annual Trainings Plans for CGWB are prepared and Implemented by RGNGWTRI.
- The officers of RGNGWTRI have undergone different Trainer Development Program (TDP) of DoPT.

3.15 Asked about the main challenges faced by the Rajiv Gandhi NGWT&RI, the Ministry submitted:

“Inadequate posting of officers in RGI- Officers of important discipline such as Hydrology, Chemistry, Hydrometeorology and Engineering streams have not been posted. The institute is poorly staffed. Menial jobs are being attended to by faculty. Proposal of strengthening of RGI by phased manner by creation of posts as per the recommendations of committee constituted by ministry is pending and is now merged with restructuring proposals of CGWB.

Guest Faculty- RGNGWTRI is unable to attract expert Guest faculties/ eminent scientists from other cities and abroad to enrich the course content due to constrains in paying TA/DA etc. The proposal in this regard is being moved.

International exposures to the RGNGWTRI faculty- Since its inception RGI has made several attempts for overseas training but could not able to send any batch. The proposal of overseas training has been incorporated even in the SFC of XII plan (present scheme) and has an approval. Till date approval on yearly proposal sent to ministry has not been materialised.

Outsourcing of tier-III training courses, works like making short educational films and procurement of software are constraints and hampering physical and financial progress.

Lack of Infrastructure facility - The Institute is not having its own building, laboratory etc. The RGNGWTRI building has been taken over by Govt. of Chhattisgarh which affected the targeted achievements. Hence the institute is not running in its full potential and R&D activities could not be re-launched full-fledged.

Hostel and Guest house- In absence of own hostel building, RGNGWTRI faces problem to attract professionals from State Government and academic institutions and therefore nomination for the courses are poor many a time.

Shortage of vehicles- As on date there are only 4 vehicles in RGI. Out of 2 buses only one bus is somehow working and is >15 year old.

Absence of own building- Since its inception in 1997, RGNGWTRI has witnessed several relocations and re-launching affected the operations of RGNGWTRI and delayed its establishment and strengthening. Presently RGI is running in rented accommodation.

Training & research policy- The institute does not have approved training and research policy. There is need for Training Need Assessment of ground water professionals working in various departments based on which training program and curriculum should be formulated and developed.”

Ground Water Management & Regulation

3.16 The Committee observe that the Budget allocation for the Plan scheme, Ground Water Management & Regulation (GWM&R) during 2016-17 was increased to Rs. 328.38 crore from Rs. 188.00 crore allocated during 2015-16, and Rs. 188.00 crore was also the figure during Revised Estimate stage (2015-16). The reason attributed by the Ministry for this hike in Budget allocation was for “undertaking data generation activities for aquifer mapping in 8 priority States through outsourcing”. The Committee note that several major achievements have been made under the GWM&R scheme from 2012-13 to 2015-16 (as on 29 February, 2016), under which (i) the pilot projects on Aquifer Mapping covering an area of 3006 sq. km. in the States of Bihar, Rajasthan, Maharashtra, Karnataka and Tamil Nadu have been completed, (ii) Aquifer Mapping has been completed in NCR area in the States of Uttar Pradesh, Haryana and Delhi encompassing an area of 26185 sq. km. and Ground Water Management Plan have been prepared (iii) 9988 nos. of Vertical

Electrical Sounding (VES) and 430 nos. of bore hole logging have been conducted (iv) 3037 nos. of ground water exploration wells have been constructed, and 98184 ground water samples have been analyzed. The Committee also note that Aquifer mapping area has been reprioritised in 08 States and Bundelkhand region incorporating an area of 5.25 lakh sq. km., viz. Haryana, Punjab, Rajasthan, Gujarat, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu and Bundelkhand areas of Uttar Pradesh and Madhya Pradesh, for which action plans for each State has been prepared. They further note the Ministry's reply that under National Aquifer Mapping and Management Plan, a total area of 116347 sq. km. has been covered in the last 3 years covering 16 States, NCT Delhi and area covered under pilot aquifer mapping in parts of the 5 States of Rajasthan, Maharashtra, Karnataka, Tamil Nadu and Bihar. Given the fact that the ground water levels in many parts of the country are fast depleting and also deteriorating qualitatively to a large extent, the Committee see a great potential in Aquifer Mapping as an effective plan component for addressing the depressing ground water scenario obtaining in the country. They, therefore, recommend that the allocation of Rs. 328.38 crore made in 2016-17 be fully utilized to achieve optimum results under the Ground Water Management & Regulation scheme. They also recommend that efforts be made by the Ministry to extend the coverage of National Aquifer Mapping and Management Plan from the 16 States, NCT Delhi and parts of 05 States as exists during the last 03 years, to the remaining parts of the country - which are currently outside Aquifer Mapping. They further recommend that the latest techniques on Aquifer Mapping be roped in and introduced in all priority areas such as critical, semi-critical, over-exploited and quality-affected ground water areas in the country for the benefit of all the stake-holders, and that the Ministry come up with an action plan to achieve this goal within this financial year, i.e. 2016-17. The Committee also

hope and expect that the Government will make earnest efforts to achieve about 3 lakh sq. km. area for Aquifer Mapping envisaged during 2016-17. While taking note of the submission made by the Ministry before the Committee in regard to the inadequacy of the funds for Aquifer Mapping, the Committee recommend that the sufficient funds ranging from Rs. 700 to Rs. 800 crore annually be made available to the Ministry for completing the programme within a span of three years as envisaged by them.

Rajiv Gandhi National Training & Research Institute for Ground Water

3.17 The Committee note that the Rajiv Gandhi National Training & Research Institute for Ground Water (Rajiv Gandhi NGWT&RI) is the only Central Institute of its kind catering the needs not only of Central Ground Water Board but also acting as key resource centre for many of the institutions like Rajiv Gandhi Drinking Water Mission, Public Health and Engineering Departments, World Bank – aided Hydrology Project in the country and State Groundwater agencies etc. A Budget allocation of Rs. 8.00 crore was made for the financial year 2016-17 towards Rajiv Gandhi NGWT&RI, which was higher than Rs. 7.00 crore allocated in 2015-16. The Committee were apprised that during the 12th Plan, 531 nos. of trainings have been imparted in the Institute so far comprising of 44358 trainees. Further, the Institute is implementing a three-tier training programme in view of the capacity building requirements of professionals of CGWB, different State and Central Government agencies and other organisations in the field of ground water with a special emphasis on the requirements of the National Project on Aquifer Management, i.e. Aquifer level, State level and National level. These trainings are aimed at overall capacity building in ground water sector and creation of a trained workforce for implementation of National

Project on Aquifer Management for sustainable development of ground water resources. The Committee see a pivotal role for the Rajiv Gandhi NGWT&RI in the coming years given the fact that groundwater has emerged as a pressing national focus of attention due to the potential water scarcity situation likely to be faced by this country in the near future. The Committee, therefore, recommend that the Government should make earnest efforts to strengthen, equip and modernise the Institute so that it is fully equipped to handle the task of capacity building for its trainees in the vital ground water sector and for creation of a trained, dedicated workforce for implementing National Project on Aquifer Management for sustainable development of ground water resources. The Committee would like to be apprised of action taken in this regard at the earliest. Noting further that the Institute has been taking up R&D studies now still in progress, viz. (i) surface water-groundwater interaction through isotope studies, (ii) mathematical modelling based approach for sustainability of aquifer system underlying Bemetara block, Chhattisgarh, (iii) per-chlorate contamination in parts of the State of Kerala, and (iv) Artificial intelligence in groundwater management, the Committee recommend that these studies be completed in a time-bound manner. The Committee also recommend that the challenges faced by the Rajiv Gandhi NGWT&RI, i.e. inadequate posting of officers, constraints in Guest Facility due to fund shortage, inadequate international exposure to the Institute's faculty, lack of infrastructure facility, absence of own building for office, hostel and Guest House, lack of training and research policy, etc. be taken up at the earliest with the Government for remedial measures to enable the Institute to function smoothly in fulfilling its mandate.

CHAPTER IV

FLOOD CONTROL & DRAINAGE

4.1 The following are the total Budget allocation for Flood Control in the country:

Table – 12 : Budget allocations for Flood Control

Year	Plan	Non-Plan	Total
2014-15 (Actuals)	149.97	84.63	234.60
2015-16 (BE)	112.00	91.54	203.54
2015-16 (RE)	103.26	86.48	189.74
2016-17 (BE)	138.37	99.90	238.27

The Plan allocation for Flood Control for the year 2015-16 was earmarked at Rs. 112.00 crore. However, it was reduced to Rs. 103.26 crore at the Revised Estimate stage for the same financial year and increased to Rs. 138.37 crore for 2016-17.

4.2 When asked to state the reasons for reduction of Plan allocation for Flood Control at RE stage in 2015-16, the Ministry submitted:

“Under the Central Sector, the Plan Scheme ‘Flood Forecasting’ was approved in December, 2015 due to which no new activities of modernisation and expansion of network could be commenced. Therefore, the requirement was reduced at RE Stage.”

4.3 Regarding the reasons for increase in Plan allocation in BE 2016-17 from Rs. 112.00 crore in BE 2015-16, the Ministry further stated:

“Considering requirement of bank protection works on common border rivers and funds required for meeting expenditure of newly set up Pancheshwar Development Authority, there the provision in BE : 2016-17 has been increased.”

Flood Management Programme

4.4 During 11th Plan, the Government of India launched "Flood Management Programme" (FMP) for providing Central Assistance to the State Government for undertaking the works related to river management, flood control, anti-erosion, drainage development, flood-proofing including flood prone area development programme, restoration of damaged flood management works and anti-sea erosion works.

4.5 The Ministry of Water Resources, River Development & Ganga Rejuvenation, in a written reply, have furnished the updated details of works approved, funds released and area protected under the Flood Management Programme which have been reproduced in Annexure – IV.

4.6 When the Committee asked to give the magnitude of flood damage in India, the Ministry have informed that during 2012-14, floods have affected a total area of 36.044 mha and 45.704 million population , and resulted in damages to crops of the value of Rs. 5368.115 crore, houses 987940 nos. valued at Rs. 873.261 crore, 202602 cattle nos., and public utilities valued at Rs. 14640.340 crore. The total number of human lives lost was 4152.

4.7 On being asked to suggest about the short-term, medium-term and long-term approaches and methods to be adopted to manage and control recurrent floods in the country, the Ministry did not furnish any reply.

Flood Forecasting

4.8 The objective of the scheme is to strengthen flood forecasting and inflow forecasting network in India and develop forecast information system. The Budget outlay on Flood Forecasting for 2015-16 were Rs. 50.00 crore. However, it was reduced to Rs. 35.00 crore at the Revised Estimate stage for the same year and increased to Rs. 59.67 crore for 2016-17.

4.9 According to the Ministry of Water Resources, River Development & Ganga Rejuvenation, Rs. 50.00 crore was allocated for flood forecasting during 2015-16 (BE), which

was reduced to Rs. 35.00 crore at the RE stage in the same financial year. A total expenditure of Rs. 33.37 crore was actually made upto February, 2016.

4.10 When the Committee enquired about the reasons for reduction in allocation from Rs. 50.00 crore at the BE 2015-16 to Rs. 35.00 crore at RE 2015-16, the Ministry submitted:

“BE: 2015-16 of Rs. 50.00 crore has been reduced to RE: 2015-16 of Rs. 35.00 crore because of inability to take up new works of establishing 100 new flood forecasting stations as the scheme approval was granted by the government in December 2015 only.”

4.11 Asked to state the action taken / proposed to be taken to avoid reduction of Budget allocation at RE stage during 2016-17, the Ministry submitted:

“Various steps taken to avoid reduction of budget 2016-17 include placing a system to monitor progress of works by Member (RM), CWC. In addition, tender issues for implementation of works have been standardised through formulation of Model tender document and specification of equipments. Similarly active action has been taken to enter into protocol with state governments for acquisition of land wherever required.”

4.12 The Ministry of Water Resources, River Development & Ganga Rejuvenation, through its apex technical arm, Central Water Commission (CWC) performs the activity of flood forecasting on major rivers and their tributaries in the country. For this purpose, the CWC maintains a network of 175 flood forecasting stations which consists of 147 level forecast stations and 28 inflow forecast stations.

4.13 Asked about the measures taken / proposed to be taken to upgrade, expand and improve the qualitative and quantitative aspects of flood forecasting in India, the Ministry have submitted:

“Regarding improvement of flood warning system, Central Water Commission has undertaken plan-wise modernization and extension of its data collection network and

flood forecast formulation/dissemination. 445 nos. of stations have been modernized with telemetry system upto 11th Plan. During the 12th Plan, remaining 219 stations of existing flood forecast network are proposed to be modernized. Additional 100 nos. of level/inflow forecasting stations alongwith 310 base stations are proposed to be established for various towns and reservoirs/dams in the country. All stations of extended network will be modernized with telemetry system. Rainfall runoff in conjunction with hydro-dynamic mathematical modeling for forecast formulation has been developed and being used for some of the FF stations and is under development for the rest of the stations. Development of inundation forecast model on pilot basis is also planned for 12th Plan to give information about the area likely to be flooded. For forecast dissemination, the existing website has been upgraded to make more user friendly and informative w.e.f. 2014. SMS based dissemination has also been made operational.”

Flood Forecasting in Jammu & Kashmir

4.14 The Committee (2014-15) had in their 3rd Report (16th Lok Sabha), noted that CWC was not maintaining flood forecasting network in the State of Jammu & Kashmir, and had, therefore, recommended that the flood forecasting network in that State be augmented through concrete steps by the Ministry.

4.15 When asked about the progress made by the Ministry / CWC for setting up / augmenting flood forecasting network in Jammu & Kashmir, and also the details of infrastructure set up in this regard in that state the Ministry submitted:

“CWC has developed a rainfall based Flood Forecasting model for Ram Munshibag (Srinagar) on Jhelum River utilizing available hydrometeorological and river morphological data integrating India Meteorological Department (IMD) real time data of rainfall as well as Quantitative Precipitation Forecast for 3 days. The forecast is being issued from monsoon 2015.

Presently, the existing data collection from CWC Hydrological stations in Jhelum basin alongwith rainfall data from IMD network is being utilised for forecast formulation at

Rammunshbag (Srinagar). Installation of sensor based automatic data collection and satellite based transmission system is under process after approval of SFC memo.”

4.16 It is stated that a three-member Group, comprising of Chairman, Central Water Commission (CWC), and Director, National Institute of Hydrology, Roorkee was constituted on 18.09.2014, and based on its recommendation, CWC has developed a rainfall based Flood Forecasting model at Ram Munshibag (Srinagar) on Jhelum River.

4.17 When asked about whether the Flood Forecasting model developed by the CWC has been made fully functional, the Ministry in a written reply stated as under:

“Yes, the model has been made fully functional during 2015.”

River Basin Management

4.18 The objective of this Plan scheme, ‘River Basin Management’ (RBM) is to provide a forum to all the co-basin States for taking up necessary studies, evaluation, etc. for finding optimum method for development and utilization of water resources within that basin and meeting the aspirations of all stake-holders.

4.19 The Budget allocations and Actual expenditure under River Basin Management (RBM) are as follows:

Table – 13 : Budget allocations & Actual expenditure under River Basin Management

(Rs. in crore/gross)			
Actual 2014-15	Budget Estimate 2015-16	Revised Estimate 2015-16	Budget Estimate 2016-17
155.52	119.00	165.16	173.60

4.20 When the Committee enquired about the reasons for increasing Budget allocation for 2016-17 to Rs. 173.60 crore against Rs. 119.00 crore at BE 2015-16, the Ministry submitted:

“(1) Investigation of Water Resources Development Scheme (IWRDS)

Various reason for increasing Budget allocation and thus variation for BE 2016-17 are provision for preparation of PFRs, FRs & DPRs of Inter State and Intra State links, survey investigation, due to increase in the rates of various goods & services, purchase of survey & scientific instruments and revisions of rates, enhancement of DA/increment and implementation of 7th Pay Commission Report etc.

(2) Brahmaputra Board

The BE for 2016-17 has been increased by Rs. 6.20 crore vis a vis BE for 2015-16 for taking up flood protection in Majuli Island.”

4.21 Asked further about the extent to which the objectives of RBM have been achieved till February 2016, the Ministry in a written reply submitted:

“Presently, RBM Plan Scheme comprises of two components only (1) Invesigation of Water Resources Development Scheme (IWRDS) and (2) Brahmputra Board. The various objectives of the Scheme are being met as per the aspiration of the stakeholders. The details of which are given as under:

(1) IWRDS:

(a) IWRDS of NWDA Component:

Three DPRs of Ken-Betwa Phase I & II, Damanganga-Pinjal and Par-Tapi-Narmada link projects have been completed. Two DPR of Intra State links have also been completed during the Plan.

(b) IWRDS of CWC Component:

DPR of Two projects have been completed and submitted to the State Governments.

(2) Brahmaputra Board:

During 12th Plan, Brahmaputra Board is preparing 13 nos. Master Plans out of which 8 nos. have already been approved by the Board and remaining 5 are in the process of being taken up by the Board for approval.

Flood protection works at Majuli Island, Dhola Hatiguli, Blat, Mankachar Kalair Alga and Maslabari etc. are also being executed by the Brahmaputra Board.

Brahmaputra Board is carrying out the execution of 3 nos. Drainage Development schemes viz. Borbhnag, Jengrai & Jakaichuk.

Detailed Project Reports for 5 nos. projects viz. Noa-Dehing Multipurpose project, Kulsi Multipurpose project, Simsang Multipurpose project, Jiadhal project and Killing project are also being prepared by Brahmaputra Board."

4.22 During evidence on Demands for Grants (2016-17), Secretary, Ministry of Water Resources, River Development & Ganga Rejuvenation stated that Integrated Water Management over river basin has become an important issue. He also stated that for this, a separate River Basin Authority should be formed. An attempt to frame a law in this regard was made but it could not be passed. The Secretary inter alia stated that this law is a necessity to manage both the supply and demand side of water.

Role of Central Water Commission in Flood Management

4.23 The Central Water Commission (CWC) with its Headquarters at New Delhi is a premier technical organisation in the field of water resources in the country since 1945. The commission has been entrusted with the general responsibility of initiating, coordinating and furthering, in consultation with the State Governments concerned, schemes for control, conservation and utilization of water resources throughout the country for the purpose of Flood Control, Irrigation, Drinking Water Supply and Water Power Development.

The Budget Allocations (Non-Plan) for CWC 2014-15, 2015-16 and 2016-17 are given below:

Table – 14 : Budget allocations for Central Water Commission

(Rs. in crore/gross)			
Actuals (2014-15)	BE (2015-16)	RE (2015-16)	BE (2016-17)
257.75	282.15	265.42	322.55

4.24 When asked to give an overview of the various flood-related works / schemes being carried out by CWC in the country since 1945, the Ministry in a written reply stated:

"The main activities of CWC may be summarized are:

- Flood Forecasting and Assistance to State Governments in Flood Management - There are 176 flood forecasting stations, of which 148 are level forecasting and 28 are inflow forecasting stations on major dams/barrages. It covers 10 major river systems in the country including 72 river sub-basins and 17 States viz., Andhra Pradesh, Assam, Bihar, Chattisgarh, Gujarat, Haryana, Jharkhand, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Telengana, Tripura, Uttaranchal, Uttar Pradesh & West Bengal and one Union Territory Dadra & Nagar Haveli and National Capital Territory of Delhi.
- Collection and Analysis of Hydrological Data - Central Water Commission is operating a network of 954 hydro-meteorological observation stations throughout the country on all major river basins to observe (i) water level (gauge), (ii) discharge, (iii) water quality, (iv) silt besides (v) selected meteorological parameters including snow observations at key stations.
- Techno-Economic Appraisal of Projects -
- Monitoring of Selected Projects including those receiving Central Assistance
- Planning & Design of Projects
- Surveys, Investigations and Preparation of Detailed Project Report (DPR)
- Studies on Environmental and Socio-Economic issues
- Studies Related to Irrigation Planning and Water Management
- Basin Planning and Management

- National Water Resources Assessment
- Assistance in Resolution of Inter-State Water Disputes
- Construction Equipment Planning
- Studies on Dam Safety
- Research and Development
- Standardization of Engineering Practices
- Operation of Reservoirs
- Training and Capacity Building
- International Co-operation in Water Sector"

4.25 When asked about the reasons for reducing of allocations from Rs. 282.15 crore at BE 2015-16 to Rs. 265.42 crore at RE stage, the Ministry replied that the allocation at RE stage is based on progress of expenditure and need for additional funds for Ministry's flagship scheme of PMKSY. They have also stated that this reduction of allocation at RE stage will not lead to curtailment of works.

4.26 The Committee, in their 3rd Report (16th Lok Sabha) on Demands for Grants (2015-16), had expressed dissatisfaction over delay in the proposed restructuring of the Central Water Commission (CWC), which was said to be due to disagreement on some observations of the Ministry of Finance. It is also stated that although the proposal for "Restructuring of CWC" had been sent to Ministry of Finance, however, the observation of Ministry of Finance, received in April 2014 did not reflect shared vision of the CWC and Ministry of Water Resources, River Development & Ganga Rejuvenation as it completely ignored the requirements for basin level approach for integrated water resources management and other functional needs in view of growing challenges. The proposal is being revised accordingly, to address the issues raised by Ministry of Finance and meet the genuine needs to the CWC.

4.27 Giving the updated status of the proposed restructuring of the CWC, the Ministry submitted:

"The proposal for "Restructuring of CWC" was under review in Central Water Commission/Mo WR, RD& GR in light of issues raised by M/o Finance and to meet the dual needs of meeting of goals of Integrated Water Resources Development and Management in the Country as well as cadre restructuring of various services operating in CWC. Subsequently in September, 2015, M/o WR, RD & GR constituted a Committee under the Chairmanship of Dr. Mihir Shah, Ex-Member, Planning Commission to undertake a detailed study and make suitable recommendations on restructuring of CWC and CGWB by May, 2016."

4.28 The Ministry further stated that as per Terms of Reference of the Committee, it was required to submit its report within a period of 3 months, which has last been extended for a further period of three months i.e. upto 10.03.2016 with the approval of Competent Authority. Further, two months extension beyond 11.03.2016 has been granted.

Budgetary Allocations

4.29 The Committee note that the Plan allocation for Flood Control for the year 2015-16 was earmarked at Rs. 112.00 crore. However, it was reduced to Rs. 103.26 crore at the Revised Estimate stage for the same financial year and then increased to Rs. 138.37 crore for 2016-17. The reason cited by the Ministry for this reduction in Budget allocation at the RE stage in 2015-16 was that the Plan scheme for Flood Forecasting was approved in December, 2016 due to which no new activities of modernization and expansion of network could be commenced leading to the requirement being reduced at RE stage. For the increase in Plan allocation in the BE 2016-17 to Rs. 138.37 crore from Rs. 112.00 crore in the BE 2015-16, the Ministry stated that the reason therefor was consideration of the requirement of protection works on the common border rivers and funds required for

meeting the expenditure of newly set up Pancheshwar Development Authority. The Committee are convinced that the inordinate delay in approval of the Plan scheme Flood Forecasting by as late as December, 2016 which led to reduction in allocation at RE stage in 2015-16, is indicative of the casual approach of the Ministry to tackle the persistent issue of reductions of allocations at the RE stage, against which the Committee strongly had been advising the Ministry in their earlier Reports on Demands for Grants (2011-12, 2012-13, 2013-14, 2014-15 and 2015-16). The Committee are of the opinion that the Ministry have not taken the recommendation of the Committee seriously despite their repeated assurances to the contrary. The Committee, therefore, recommend that the Ministry make concerted efforts to formulate their Budget estimates judiciously through an objectively conducted pre-planning exercise and by exercising effective control over its various Offices / Agencies so that no room is left for reduction at the Revised estimate stage in Budget estimates. They also want the Ministry to immediately take concrete action to simplify and streamline the process of getting approval of schemes especially under the Head Flood Control so as to avoid wastage of manpower and resources in the frequent process of estimation of allocations. They Committee desire to be apprised of the outcome of efforts made in regard to flood protection works on the common border rivers and progress made regarding the Pancheshwar Dam project during 2016-17.

Flood Management Programme

4.30 As per information provided by the Ministry, flood have affected during 2012-14 a total area of 36.044 Mha. and 45.704 million population, and resulted in damages to the crops of the value of Rs. 5368.115 crore, 987940 nos. of houses valued at Rs. 873.261 crores, 202602 nos. of cattle, and public utilities valued at Rs. 14640.340 crore. The total

number of human lives lost was 4152 in the same period. In this connection, the Committee observe that during 11th Plan, the Government of India launched "Flood Management Programme" (FMP) for providing the Central Assistance to the State Government under this scheme, during 11th Plan, the nos. of works approved was 420, for which fund amounting to Rs. 3566.00 crore was released. In comparison, during 12th Plan, the nos. of works approved under FMP is only 97 while a total fund of Rs. 1057.40 crore has been released till date. The Committee note that the 12th Plan is in its last phase - while the achievements made so far under FMP remain meager to say the least. The Committee, therefore, recommend that the Ministry pull up their socks and make all-out efforts to increase the achievements under the FMP during 11th Plan through coordinated efforts with the State Governments and other implementing Agencies. The Committee are however, dismayed to note that the Ministry have not furnished reply regarding short-term, medium-term and long-term approaches and methods to be adopted to manage and control recurrent floods in the country, and they recommend that the relevant information in this regard should be submitted to the Committee within three months after presentation of this Report.

Flood Forecasting

4.30 The Committee note that the Ministry of Water Resources, River Development & Ganga Rejuvenation, through its apex technical arm, the Central Water Commission (CWC), performs the activity of flood forecasting on major rivers and their tributaries in the country, through a network of 175 flood forecasting stations - which consist of 147 level forecast stations and 28 inflow forecast stations. Regarding the measures taken / proposed to be taken to upgrade, expand and improve flood forecasting in India, the

Ministry stated that 445 nos. of stations have been modernized with telemetry system upto 11th Plan, and the remaining 219 stations of existing flood forecasting network are proposed to be modernized. Additionally, 100 nos. of level / inflow forecasting stations alongwith 310 base stations are proposed to be established for various towns and reservoirs / dams in the country. All the stations of extended network are to be modernized with telemetry system. Other measures including development of inundation forecast model on pilot basis is also planned for 12th Plan to give information about the area likely to be flooded. The Committee are happy to see the Ministry making ambitious plans for achievements during 12th Plan on the flood forecasting front, but at the same point in time they are equally surprised to note that the Budget allocation for flood forecasting had to be reduced during 2015-16 from Rs. 50.00 crore to Rs. 35.00 crore because of the inability of the Ministry to take up new works of establishing 100 new flood forecasting stations due to delayed approval of the scheme by the Government as late as December, 2015. The Committee want the Ministry to make fresh initiatives to curb the issue of delays in securing approval for flood forecasting schemes - which is responsible for reduction of allocations at RE stage during 2016-17 itself and also inform the Committee of the outcome of such efforts made. The Committee, however, recommend the Ministry to initiate specific steps to achieve the ambitious action plan envisaged for flood forecasting during 12th Plan without any loss of time and apprise the Committee accordingly. Noting that a rainfall-based Flood Forecasting model at Ram Munshibag (Srinagar) on river Jhelum has been developed by the CWC and made fully functional during 2015, the Committee recommend that similar models be introduced for other areas of the country facing annual recurrent floods, i.e. Assam, Bihar, West Bengal, Odisha,

Andhra Pradesh, Mumbai region etc. as well. The Committee would like to be apprised of further developments in this regard within the next six months.

River Basin Management

4.31 The objective of the Plan scheme, 'River Basin Management' (RBM) is to provide a forum to all the co-basin States for taking up the necessary studies, evaluation, etc. for finding optimum method for the development and utilization of water resources within that basin and meeting the aspiration of all the stake-holders. The Budget allocation was increased from Rs. 119.00 crore in 2015-16 (BE) to Rs. 173.60 crore in 2016-17 (BE), which, according to the Ministry, was for the preparation of PFRs, FRs & DPRs of Inter-State and Intra-State links, survey and investigation, due to increase in the rates of various goods and services, purchase of survey & scientific instruments and revisions of rates, enhancement of DA/increment and implementation of 7th Pay Commission Report, etc. and also for taking up flood protection in Majuli Island. The RBM Plan scheme comprises of two components (i) Investigation of Water Resources Development Scheme (IWRDS) and (ii) Brahmaputra Board. The Committee note that three DPRs of ILR projects, viz. Ken-Betwa Phase I & II, Damanganga – Pinjal, and Pai-Tapi-Narmada link projects have been completed alongwith two DPRs of Intra-State links under IWRDS of NWDA component. Under IWRDS of CWC component, DPR of two projects have been completed and submitted to the State Governments. The Committee recommend that the details of these projects including the time required for completing them, their final status, costs incurred, etc. should be furnished to them within 3 months so that these projects do not incur needless time and cost overruns. The Committee are convinced that the time has come for the country to have an Integrated Water Management for the entire country which

would timely assist in fructifying the ambitious scheme of Inter-Linking of Rivers (ILRs) being implemented in the country. The Committee, therefore, recommend that the Government create an over-arching National Authority (River Basin Authority) at the Centre which will serve as the apex body for an integrated management of river basins in the country - so as to in turn ensure that the ILRs scheme is provided the much-needed impetus - while at the same time the process of solution of various Inter-State Disputes on river waters is simplified and streamlined for the lasting benefit to all the concerned parties. The Committee would like to be kept informed of the developments made in this regard.

Role of Central Water Commission in Flood Management

4.32 The Committee note that under the Central Water Commission (CWC), various activities have been carried out since its inception in 1945, including Flood Forecasting and Assistance to State Governments in Flood Management, with 176 flood forecasting stations covering 10 major river systems including 72 river sub-basins and 17 States; Collection and Analysis of Hydrological Data, through a network of 954 hydro-meteorological observation stations throughout the country on all the major river basins to observe water level, discharge, water quality, silt etc.; Techno-economic Appraisal of Projects; Monitoring of selected projects including those receiving Central assistance; Planning & Design of projects; surveys, Investigations and Preparation of Detailed Project Report (DPR); Studies on Environmental and Socio-economic issues; Studies related to Irrigation Planning and Water Management; National Water Resources Assessment; Assistance in Resolution of Inter-State Water Disputes; Studies on Dam Safety; Operation of Reservoir; Training and Capacity Building; International Co-operation in Water sector

etc. The Committee understand and underline the pivotal role being played by the CWC as a premier technical organisation in the field of water resources in the country. In their 3rd Report (16th Lok Sabha) on Demands for Grants (2015-16), the Committee had expressed dissatisfaction over delay in the proposed restructuring of the CWC which, according to the Ministry, was due to disagreement on some observations of the Ministry of Finance. The Committee now note that in September, 2015, the Ministry constituted a Committee under the Chairmanship of Dr. Mihir Shah, Ex-Member, Planning Commission to undertake a detailed study and make suitable recommendations on restructuring of the CWC along with the CGWB by May, 2016, and the Terms of Reference of the Committee was reportedly extended upto 10.03.2016. The Committee recommend that submission of the Mihir Shah Committee Report should be hastened so that the restructuring of the CWC will see light of the day soon. The Committee would, however, like to be informed of the progress made in this regard within 2 months.

CHAPTER V

INITIATIVES IN THE NORTH - EAST

Brahmaputra Board

5.1 The main objectives of Brahmaputra Board are Survey, Investigation and Preparation of Master Plan, DPRs for Drainage Development Schemes and DPRs for Multipurpose Projects, Operation & Maintenance and Upgradation of NEHARI, Construction of HQ complex & R&M of assets created by the Board, Upgradation of IT & GIS, Climate Change studies, etc., execution of (i) Drainage Development Scheme (ii) Anti-Erosion schemes & Flood Management schemes and (iii) Construction of raised platform.

5.2 The Committee desired to know to what extent the objectives of the Brahmaputra Board have been achieved specially with regard to integrated implementation of measures for control of flood and bank erosion. To this query, the Ministry in a written reply submitted as under:

“In order to achieve integrated implementation of measures for control of flood and bank erosion, Brahmaputra Board has so far prepared 57 master plans out of which 49 has been approved by Government of India and remaining 8 have been approved by Board and CWC is in process of submission to Ministry. 41 DDS have been identified under these master plans. Of these, 2 schemes have been executed, 4 are under execution, DPR techno-economically cleared for another 4, 3 schemes were found to be not feasible and remaining are under various stages of DPR preparation. Board has also carried out execution of following flood control and anti-erosion schemes:

A. Protection of Majuli Island

Sl. No.	Description	Estimated Cost (Rs. in crore)	Actual Expenditure (Rs. in crore)	Remarks
1	Immediate Measures (Year 2004-2005)	6.22	6.09	Completed
2	Phase- I (Years 2005-2011)	56.07	52.63	Completed
3	Emergent Measures (Year 2008)	4.99	4.75	Completed
4 B	Phase-II & Phase-III (Started in 2009 and continuing)	115.99	113.27 (up-to Feb 2016)	91.96% of physical progress has been achieved. Targeted to be completed by June 2016.
Total	183.27	176.74		

B. Avulsion of Brahmaputra at Dhola-Hatighuli

Sl. No.	Description	Estimated Cost (Rs in crore)	Actual Expenditure (Rs in crore)	Remarks
1	Phase-I (January 2003 to July 2004)	10.47	9.65	Completed
2	Phase- II (January 2004 to July 2004)	5.22	3.76	Completed
3	Phase-III (March 2007 to July 2007)	8.47	8.45	Completed
4	Phase-IV	54.43	52.12 (up-to Upto August 2015)	Physical Progress - 99.8%
	Total	78.59	73.98	

C. Protection of Mankachar, Kalair-alga international Border area from erosion of river Brahmaputra- Estimated cost Rs. 23.79 crore.

Year 2012

Assam

Dibrugarh, Neamatighat, Tezpur, Goalpara, Dhubri on River Brahmaputra and River Beki at Road Bridge, River Jia-Bharali at N T Road Crossing, RiverKopili at Kampur and River Kushiyara at Karimgunj flowed in High Flood Situation i.e. within 0.5 m of its previous HFL during the year 2012. River Brahmaputra and its tributaries as well as Barak and its tributaries flowed in Low to Moderate flood situation in the remaining stations except at Naharkatia where it did not cross warning level.

Year 2013

Assam

River Brahmaputra at Dibrugarh, Neamatighat and River Desang at Nanglamoraghat flowed in High Flood Situation.

River Brahmaputra and its tributaries as well as Barak and its tributaries flowed in Low to Moderate Flood Situation in remaining FF Stations except at Kampur, Dharamtul on river Kopili and Naharkatia on river Buridehing.

Tripura

The river Gumti flowed in low flood situation while Kailashahar did not cross Warning Level.

Year 2014

Assam

River Brahmaputra at Dibrugarh, Neamatighat, RiverBuridehing at Chenimari (Khowang) and River Beki at Road Bridge flowed in High Flood Situation. Remaining stations on river Brahmaputra, Barak and its tributaries were flowing in Low to Moderate Flood Situation except at Naharkatia on river Buridehing and Annapurna Ghat on river Barak where the river level did not cross warning level.

Tripura

Rivers did not cross warning level during the year 2014.

Year 2015

Assam

Unprecedented Flood Situation:

River Buridehing at Chenimari (Khowang) flowed in Unprecedented Flood Situation.

River Aie at Aie N H Crossing in Barpeta district of Assam, River Jia-Bharali at N T Road Crossing in Sonitpur district, River Beki at Road Bridge in Barpeta district and River Katakhal at Matizuri in Hailakandi district of Assam and River Brahmaputra at Dibrugarh flowed in High Flood Situation.

River Champamati at Bahalpur in Dhubri district of Assam and River Lohit at Kibithu in Anjaw district of Arunachal Pradesh in High Flood Situation.

Moderate Flood Situation:

River Brahmaputra at Neamatighat in Jorhat district, Tezpur in Sonitpur district, Guwahati in Kamrup district, Goalpara in Goalpara district, Dhubri in Dhubri district, River Dikhow at Sibsagar and River Desang at Nanglamoraghat in Sibsagar district, River Dhansiri (S) at Numaligarh in Golaghat district, River Kopili at Kampur in Nagaon district, River Puthimari at N H Crossing in Kamrup district, River Pagladiya at N T Road Crossing in Nalbari district, River Manas at N H Crossing in Barpeta district, River Sankosh at Golokganj in Dhubri district, River Barak at Annapurnaghat in Cachar district and River Kushiya at Karimganj in Karimganj district of Assam.

Low Flood Situation:

River Subansiri at Badatighat in Lakhimpur district, River Buridehing at Naharkatia in Dibrugarh district, River Dhansiri (S) at Golaghat in Golaghat district, River Kopili at and Dharamtul in Morigaon district of Assam

Tripura

Rivers did not cross warning level during the year 2015.

(iv). Flood control measures are carried out primarily by State Govt. and some works by Brahmaputra Board as per request of State Govt. As a result of works carried out by Brahmaputra Board mentioned under (i) above, following are achieved –

- Protection of Majuli Island: Erosion in the Island was @ 2.5 Sq km/year from 1973 to 2004 as per satellite imagery of the respective years. The trend has been reversed due to works of Brahmaputra Board and presently overall deposition rate is 1.84 Sq km/year.
- Avulsion of Brahmaputra at Dhola-Hatighuli: 11 villages under Doomduma Revenue Circle in an area of about 1500 ha got protection from floods, since the year 2004 onwards, on construction of retirement bund at Hatighuli area on Left bank of Lohit river. An area of about 900 ha just behind the Tie-bund, on country side, got protection from floods and erosion, on construction of Tie-bund in the year 2003-04. Cultivation has started, afresh, in the area between the Tie-bund and the Ghoramora channel.
- Protection of Nagrijuli, Rangia town, Mukalmua and Borbhag from flood and erosion of River Puthimari in Assam: Relief to entire Nagrijuli, Rangia town, Mukalmua and Borbhag area from flood and erosion
- Anti-Erosion measures to protect Kushiabil & Durgajan village at Dimapur of river Dhansiri(S) in Nagaland: An area of 35.11 ha is benefitted in the township of Dimapur and nearby areas
- Other schemes are under execution.

Total expenditure during last 3 years against execution of flood control and anti-erosion works by Brahmaputra Board is Rs106.42 crore.”

5.3 It has been stated that the Ministry / Brahmaputra Board has completed 05 DPRs for Multipurpose projects in the North-East region, viz. Siang Single Stage, Subansiri Single Stage in the Arunachal Pradesh, Tipaimukh in Manipur and Mizoram, Pagladiya in Assam and Bairabi in Mizoram. DPR for 05 projects, namely, Noa-Dehing, Jiadhal, Kushi, Killing and Simsang are at various stages of investigation / preparation / examination.

5.4 When asked to provide the updated status of the 05 multipurpose projects, viz. Siang Single stage, Subansiri single stage, Tipaimukh, Pagladiya and Bairabi in the North-East, the Ministry submitted the reply as reproduced below:

“Status of 5 projects for which DPR completed

- (a) Siang single stage: The project proposal was handed over to NHPC in the year 2000. Presently, lower Siang is with Joyprakash Associates Ltd and Siang upper projects are with NEEPCO. Target is not known to Brahmaputra Board.
- (b) Subansiri single stage: The Subansiri single stage project is replaced by lower Subansiri project with much lower height. The project is with NHPC. The project construction has been stopped since the year 2007 due to protest against the project by various organizations.
- (c) Tipaimukh: Handed over to NEEPCO in 2000. Presently , the project is with NHPC
- (d) Pagladiya: The activities of Pagladiya Dam Project taken up by Brahmaputra Board has been closed due to non-completion of zirat survey. Presently there is no activity. However, the project is still under consideration by Assam Govt.
- (e) Bairabi: Handed over to Government of Mizoram. The Government of Mizoram allotted the work of execution for Bairabi Dam Project to M/s Sikaria Power Ltd., Kolkata on 10.08.2012. It has been intimated by Government of Mizoram that Bairabi Dam Project will be completed within seven years.”

5.5 When asked whether periodic monitoring is being done by the Government / Brahmaputra Board regarding the progress of work in the 05 multipurpose projects and with what

results, the Ministry have not furnished any reply. Asked about the progress of work for the other multipurpose projects which are at various stages of investigation / preparation / examination, the Ministry informed that DPRs of Noa-Dehing multipurpose project and Kulsu Multipurpose Project have been completed and they are under appraisal of CWC, whereas Simsang Multipurpose project (Meghalaya), Jiadhal Dam Project (Assam-Arunachal Pradesh), and Killing Dam (Assam-Meghalaya) project are under 'Survey & Investigation' and preparation of DPR in Brahmaputra Board.

5.6 Regarding the chronically flood and erosion affected Majuli Island (Assam), the Committee were informed that the Brahmaputra Board took up anti-erosion works at Majuli Island in 2003-04, as immediate measures and completed the same in 2004-05. The works on Phase I were completed in April, 2011 at an estimated cost of Rs. 53.40 crore. The Board is presently executing the Phase-II and Phase-III works combined together, which are likely to be completed during 2014-15.

5.7 When the Committee enquired about the updated status of works of protection of Majuli Island (Phase II & II) till February, 2016, the Ministry stated in a written reply that physical progress of work achieved under Phase II & III till February is 91.96%. An expenditure of Rs. 113.27 crore has been made till February, 2016 against the estimated provision of Rs. 115.99 crore. The revised target date of completion of works under phase II & II is June, 2016.

National Institute of Hydrology

5.8 The National Institute of Hydrology (NIH), a Government of India Society, under the Ministry of MoWR, RD&GR, established in December, 1978 at Roorkee, is conducting basic applied and strategic research in the fields of Hydrology and water resources development.

5.9 Giving an overview of the various research projects undertaken by the NIH in the fields of hydrology and water resources development, the Ministry in a written reply stated that the North Eastern Regional Centre (NERC) of NIH, Guwahati catering for the seven NE States, Sikkim and parts of West Bengal (Teesta basin) was established in August, 1988 and was working for various water resources problems of the region. Considering flood as the major problem in the region, the Ministry of Water Resources, Govt. of India decided to rededicate the Regional Centre towards service of the region and renamed it as NIH Centre for Flood Management Studies for the Brahmaputra Basin (NIH-CFMS) during September 2001. The NIH-Centre for Flood Management Studies, Guwahati is engaged in R&D studies related to flood estimation and routing, structural / non structural measures for flood management, integrated watershed management for flood control, hydrological data base management system, drainage congestion and erosion problems, water quality problems, socio-economic aspect of flood disaster and technology transfer activities.

The list of R&D studies carried out for North-Eastern States by NIH-CFMS is given at Annexure

– V.

Brahmaputra Board

5.10 The Committee note that the Brahmaputra Board under the Ministry of Water Resources, River Development and Ganga Rejuvenation in order to achieve an integrated implementation of measures for the control of flood and bank erosion, has so far prepared 57 Master Plans out of which 49 have been approved by Government of India and remaining 8 have been approved by the Board. Besides, 41 Drainage Development Schemes (DDS) have been identified under these Master Plans, out of which 2 schemes have been executed and 4 are under execution. In respect of the flood control and anti-erosion measures, the Committee further note that the Board has completed Phase – I of the works of protection of Majuli Island at the cost of Rs. 52.63 crore, while Phase – II and Phase – III, initiated in 2009, is completed upto 91.96% and targeted to be completed by June, 2016. The Ministry also informed that Phase – I, Phase – II and Phase – III of the works of Avulsion of Brahmaputra river at Dhola-Hatighuli have been completed while works on Phase-IV have been completed by upto 99.8%. The Committee, however, note that despite the tall claims about works on the flood control and anti-erosion undertaken by the Brahmaputra Board, Assam faced severe flood of unprecedented proportion in 2015 although an expenditure of Rs. 106.42 crore was incurred by the Board on flood control during the last 3 years. The Committee are also distressed to note that out of 5 DPRs for Multipurpose projects prepared by the Brahmaputra Board in the North-East region, viz. Siang Single Stage, Subansiri Single Stage, Tipaimukh, Pagladiya, and Bairabi, none of these projects have been completed till date. About the periodic monitoring being done by the Government / Brahmaputra Board regarding the progress of works in the 5 Multipurpose projects, the Ministry have not furnished any reply - which speak a lot about the lackadaisical attitude of the Government / Brahmaputra Board on this vital

issue. The Committee, therefore, recommend that the Ministry institute an appraisal panel to look into the delays in the execution of the 5 Multipurpose projects for which the Brahmaputra Board has prepared DPRs and apprise the Committee of its findings after fixing responsibility for lapses, acts of commission and omission on the part of the concerned implementing agencies. Side by side, the Committee also recommend that the Ministry should duly complete the balance works regarding protection of Majuli Island (Phase II & III) by the targeted time, i.e. June, 2016 and also wind up Phase – IV works on Avulsion of Brahmaputra river at Dhola-Hatighuli. They further recommend that the Ministry should vigorously pursue the progress of the other Multipurpose projects, viz. Noa-Dehing, Kulsi, Simsang, Jiadhal and Killing - which are at various stages of appraisal, Survey and Investigation and preparation of DPR in the Brahmaputra Board. The Committee would like to be apprised about the results of action taken by the Ministry in this regard within the next six months.

National Institute of Hydrology

5.11 The Committee note that the National Institute of Hydrology (NIH), a Government of India Society, under the Ministry of Water Resources, River Development and Ganga Rejuvenation established in December, 1978 at Roorkee (Uttarakhand), is conducting basic applied and strategic research in the fields of hydrology and water resources development. They also note that the NIH Centre for Flood Management Studies for Brahmaputra Basin (NIH-CFMS) established in August, 1988 is engaged in R&D studies related to flood estimation and routing, structural / non-structural measures for flood management, integrated management for flood control, hydrological database management system, drainage congestion and erosion problems, water quality problems,

socio-economic aspect of flood disaster and technology transfer activities. Noting further the multifarious R&D studies carried out for the North-Eastern States by NIH-CFMS, specially in the States of Assam, Arunachal Pradesh, Meghalaya, Mizoram, Manipur, Nagaland and Sikkim, the Committee strongly recommend that sufficient funds be allocated by the Ministry to enable the NIH-CFMS to undertake its R&D activities more effectively and more widely. Further, the Ministry should initiate steps so that the results of these R&D studies are utilized optimally in such a way that they translate in the flood control, anti-erosion and other related water resources development / management in the North-East.

NEW DELHI
29 April, 2016
9 Vaisakha, 1938 (Saka)

HUKUM SINGH,
Chairperson,
Standing Committee on Water Resources

SALIENT FEATURES OF DRAFT NATIONAL WATER FRAMEWORK BILL

- (1) The draft National Water Framework Bill proposes to establish an umbrella statement of general principles governing the exercise of legislative and/or executive (or devolved) powers by the Centre, the States and the local governing bodies, which should lead the way for essential legislation on water governance in every State of the Union and devolution of necessary authority to the lower tiers of government to deal with the local water situation.
- (2) It proposes eighteen Basic Principles for Water Management to bring different State legal interventions within a framework of governing principles and alignment of existing legislations both at the Central as well as State level to conform to the principles and provisions of this Bill.
- (3) It proposes that every individual should have a right to a minimum quantity of potable water (not less than 25 litres per capita per day) for essential health and hygiene and within easy reach of the household, which may be provided free of cost to eligible households, being part of pre-emptive need.
- (4) It proposes establishment of an independent statutory Water Regulatory Authority by every State for ensuring equitable access to water for all and its fair pricing on volumetric basis, for drinking and other uses such as sanitation, agricultural and industrial.
- (5) It proposes that all water resources projects conform to the River Basin Master Plan to be prepared, applicable efficiency benchmarks and take into account all social and environmental aspects in addition to techno-economic considerations.
- (6) It proposes that the groundwater be protected, conserved and regulated through appropriate laws and by adequate and efficient measures using precautionary approach, with active participation of Community Based Institutions.
- (7) It proposes conformance to the Service Level Benchmarks for water supply, sanitation, solid waste management and storm water drainage, as may be prescribed.
- (8) It proposes that Industries either withdraw only the make up water or have an obligation to return treated effluent to a specified standard back to the hydrologic system and to file annual 'Water returns'.
- (9) It proposes that the appropriate Government take all possible measures to synergise and integrate different development schemes including schemes for water conservation, sanitation and improvement of water quality at Panchayat or Municipality level, as the case may be, and further at sub basin and basin level.
- (10) It proposes that a High Powered Committee be set up at the Centre and in each State for coordination and policy support mechanism between different agencies dealing with water etc.

PRESENT STATUS OF 16 DECLARED NATIONAL PROJECTS

Sl. No.	Name of the Project	State	(1)Irrigation (ha.) (2) Power (MW) (3)Storage (MAF)	Central Assistance Released (Rs Cr.)	Irrigation Potential Created (In Ha.)	
1	Gosikhurd Irrigation Project	Maharashtra	(1) 2.50 lakh (2) 3 MW (3) 0.93 MAF	2008-09 = 450 2009-10 = 720 2010-11=1412.94 2011-12 = Nil 2012-13 =405 2013-14 = Nil 2014-15 = Nil Total = 2987.94.	53,275	Project is under Exec Land acquisit reports on complai quality of work are realising the poten completed by March seek extension of cor 2015.
2	Shahpurkandi Dam Project	Punjab	(1) 0.37 lakh (2) 168 MW (3) 0.012MAF	2009-10 = 10.80 2010-11 =15.236 2011-12 = Nil 2012-13 = Nil 2013-14 = Nil 2014-15 = Nil Total = 26.036	Nil	Project is under Exec Govt. of J&K has dec of Punjab required fo be resolved between was to be completed I
3	Teesta Barrage Project	West Bengal	(1) 9.23 lakh(NP component :5.27) (2) 1000 MW (3) Barrage	2010-11=81 2011-12= 97.20 2012-13 = Nil 2013-14 = Nil 2014-15 = Nil	1,97,020.	Project is under Exec Difficulty in land acq for minors and distri non-realisationof the completed by March 2

				Total = 178.20		
4	SaryuNaharPariyojna	Uttar Pradesh	(1) 14.04(NP Compone nt:4.73) (2) – (3) Barrage	2012-13=67.98 2013-14= 380.75 2014-15=210.85 Total = 659.58	63,070	Project is under Execu Project is targeted t 2017. Project Author gaps in canal reaches State funds.
5	Indira SagarPolavaram Project	Andhra Pradesh	(1) 4.68Lakh (2) 960 MW (3) 23.44 TMC of water to Vizagcity for drinking and industrial purpose and Diversion of 84.70 TMC to Krishna basin	2015-16 = 350.00	Nil	Project is under Execu After declaration of th it is to be executed by of the project, Polava has been created b Gazette Notification d.
6.	LakhwarVyasi Multipurpose Project	Uttarakhand	(1) 33,780 (2) 300 MW (3) 0.267 MAF	Nil	Nil	Lakhwar as stand: accepted by TAC. Th Investment Clearance GR in its meeting helc
7	Renuka Dam Project	HP	(1) Drinking water (2) 40 MW (3) 0.404 MAF	Nil	Nil	Forest Clearance of Technical clearances by HPPCL. Environm MoWF& CC was unc order dated 02 nd Feb discrepancies in t figures (forest and n Non-Government) different places (f

						DPR of the project, constituted a (Chairmanship of Prir Forest, Himachal I would inter-alia, a proposal of project p the actual forest and public and private. 1 land the project wo the cost of the projec The Committee has within 4 months.
8	Ujh Multipurpose project	J&K	(1) 0.32 lakh (2) 212 MW (3) 0.82 MAF	Nil	Nil	DPR under appraisal from JKSPC on some / CWC are pending.
9	Kishau Multipurpose Project	HP/ Uttarakhand	(1) 0.97 Lakh (2) 660 MW (3) 1.04 MAF	Nil	Nil	DPR prepared, MoU Govt. of UK and Gov to be formed. UJ compliance to observ. DPR of the project, w/ 11 can be submitted SPV.
10	Ken Betwa Link Project	Madhya Pradesh	(1) 6.35 lakh (2) 78 MW (3) 2.18 MAF	Nil	Nil	Updated cost estimate was submitted in CV 2016 which is under e DPR of Phase-II is ye
11	Kulsi Dam Project	Assam	(1) 20,500 ha. (2) 55 MW (3) 0.28 MAF	Nil	Nil	Under appraisal in CV observations of CWC project are pending.

12	Noa-Dihing Dam Project	Arunachal Pradesh	(1) 3605 ha. (2) 71 MW (3) 0.26 MAF	Nil	Nil	Under appraisal in CV observations of CWC project are pending.
13	Bursar HE Project	J&K	(1) 1 lakh (indirect) (2) 1230 MW (3) 1 MAF	Nil	Nil	DPR under p
14	Gyspa HE Project	HP	(1) 0.50 lakh ha (2) 300 MW (3) 0.74 MAF	Nil	Nil	DPR under preparat Pradesh. HPPCL has work of preparation However, works are i resistance from local p
15	2 nd Ravi Vyas Link Project	Punjab	Harness water flowing across border (about 0.58 MAF in non-monsoon period)	Nil	Nil	Unde Govt. of Punjab is rely the project. They ha project is technically carrying out any grou
16	Upper Siang Project	Arunachal Pradesh	(1) Indirect (2) 9500 MW (3) 1.44 MAF (4) Flood moderation	Nil	Nil	Unde

STATE-WISE PROGRESS UNDER NATIONAL AQUIFER MAPPING AND MANAGEMENT PROGRAMME IN
THE LAST THREE YEARS

Sl. No.	State	Area covered
		(in Km ²)
1	Bihar	2208
2	Chhattisgarh	1604
3	Gujarat	6600
4	Haryana *	24006
5	Jammu & Kashmir	2300
6	Karnataka	5938
7	Kerala	700
8	Madhya Pradesh **	2179
9	Maharashtra	8492
10	Odisha	2977
11	Punjab	8499
12	Rajasthan	13808
13	Tamil Nadu	7130
14	Telangana	4547
15	West Bengal	2977
16	Uttar Pradesh***	17893
17	NCT Delhi	1483
18	Area covered under pilot aquifer mapping in parts of five States (Rajasthan, Maharashtra, Karnataka, Tamil Nadu and Bihar)	3006
	Total	116347

* Include National Capital Region – 13428 sq.km.; Other areas – 10578 sq.km.

** Include Bundelkhand Region – 895 sq.km; Other areas – 1284 sq.km.

*** Include Bundelkhand Region – 3500 sq.km.; National Capital Region – 10800 sq.km.; other areas – 3593 sq.km.

STATE-WISE WORKS APPROVED, WORKS COMPLETED AND FUNDS RELEASED UNDER FLOOD MANAGEMENT PROGRAMS UNDER 11TH AND 12TH PLAN (UP TO 23.03.2016)

Sl. No.	State	11 th Plan			12 th Plan			Total (11 th + 12 th Plan) Status		
		Works Approved		Funds Released (11 th Plan)	Works Approved		Funds Released (12 th Plan)	Works Approved		Number of Works Completed (11 th + 12 th Plan)
		Nos.	Estimated Cost		Nos.	Estimated Cost		Nos.	Estimated Cost	
1	Arunachal Pradesh	21	224.69	81.69	0	0.00	59.67	21	224.69	11
2	Assam	100	996.14	748.86	41	1386.97	37.67	141	2383.11	94
3	Bihar	43	1370.42	723.18	4	447.63	184.64	47	1818.05	41
4	Chhattisgarh	3	31.13	15.57	0	0.00	3.75	3	31.13	
5	Goa	2	22.73	9.98	0	0.00	2.00	2	22.73	2
6	Gujarat	2	19.79	2.00	0	0.00	0.00	2	19.79	1
7	Haryana	1	173.75	46.91	0	0.00	0.00	1	173.75	
8	Himachal Pradesh	3	225.32	165.98	4	1139.62	171.87	7	1364.94	1
9	Jammu & Kashmir	28	408.22	252.57	14	163.18	82.81	42	571.40	8
10	Jharkhand	3	39.30	18.44	0	0.00	4.27	3	39.30	2

11	Karnataka	3	59.46	23.80	0	0.00	0.00	3	59.46	
12	Kerala	4	279.74	63.68	0	0.00	55.22	4	279.74	
13	Manipur	22	109.34	66.34	0	0.00	24.36	22	109.34	19
14	Meghalaya	0	0.00	3.81	0	0.00	0.00	0	0.00	0
15	Mizoram	2	9.13	14.48	0	0.00	1.93	2	9.13	
16	Nagaland	11	49.35	28.96	3	37.38	31.04	14	86.73	9
17	Odisha	67	169.00	101.12	1	62.32	0.00	68	231.32	60
18	Puducherry	1	139.67	7.50	0	0.00	0.00	1	139.67	
19	Punjab	5	153.40	40.43	0	0.00	0.00	5	153.40	
20	Sikkim	28	104.92	83.69	17	261.40	8.15	45	366.32	21
21	Tamil Nadu	5	635.54	59.82	0	0.00	0.00	5	635.54	
22	Tripura	11	26.57	23.62	0	0.00	0.00	11	26.57	8
23	Uttar Pradesh	26	667.57	290.69	3	382.27	111.22	29	1049.84	6
24	Uttarakhand	12	119.82	49.63	9	183.45	132.65	21	303.27	8
25	West Bengal	17	1822.08	643.26	1	438.94	146.14	18	2261.02	6
	Total	420	7857.08	3566.00	97	4503.16	1057.40	517	12360.24	293

R&D STUDIES CARRIED OUT FOR NORTH-EASTERN STATES BY NIH – CENTRE FOR FLOOD
MANAGEMENT STUDIES FOR THE BRAHMAPUTRA BASIN

Assam	
1.	Ground water quality monitoring and evaluation in and around Greater Guwahati (Assam) Part -I : Preliminary
2.	Application of HEC 2 programme for water surface profile determination of river Digaru at Sonapur, Assam
3.	Ground water quality monitoring and evaluation in and around Greater Guwahati (Assam): Part-II Chemical analysis
4.	Ground water quality monitoring and evaluation in and around Greater Guwahati (Assam) Part-III: Trace elements
5.	Ground water quality in Greater Guwahati, Assam with reference to trace elements
6.	Preliminary hydrological investigations of Deepar Beel and strategies for its monitoring and management
7.	Crop water requirements for Krishnai Irrigation Project (Medium) of Assam
8.	Raingauge network design for Pagaladiya basin
9.	Water balance study of Krishnai river basin according to Thornthwaite's concept of potential evapotranspiration
10.	Runoff and sediment modelling in a part of Brahmaputra River basin using ANN
11.	Study of sedimentation and useful life of Barapani reservoir using radiometric dating of sediments
12.	Design flood estimation of Krishnai basin
13.	Floodplain delineation and zoning in Burhi Dihing, Brahmaputra using remote sensing and GIS
14.	Floodplain delineation and risk zoning in Gai River of assam using remote sensing and GIS
15.	Study of shifting of a typical river using remote sensing and GIS techniques, Gabharu, Assam
16.	Hydro-meteorological Aspects of Dudhnai Sub-basin
17.	Infiltration Studies at Dudhnai Sub-basin
18.	Soil Classification of Dudhnai Representative Basin (Assam / Meghalaya)
19.	Watershed Prioritization of Jiadhhal Basin through R.S. & G.I.S.
20.	Estimation of Design Flood using GIUH approach for Jadukata basin
21.	Estimation of Design Flood for Kulsu Basin Using GIUH Approach
22.	Flood estimation of Jadukata basin with SCS method.
23.	Daily time series analysis of Discharge data of Tributeries of Brahmaputra.
24.	Determination of Soil Hydrologic Properties and Infiltration Modelling in a Hilly Watershed.
25.	Flash Flood Studies (Jiadhhal Basin)
26.	Hydrological Investigations of Dhansiri River Basin: Flood and Erosion Studies.
27.	Hydrological soil classification of Dudhnai sub-basin (Assam/Meghalaya) Part-I
28.	Hydrological Soil classification of Dudhnai sub-basin (Assam/Meghalaya) Part-II
29.	Implementation of SCS Model in Dudhnai sub-basin (Assam/Meghalaya)
30.	Hydrogeomorphological studies : Dudhnai sub-basin (Assam/Meghalaya)

Arunachal Pradesh

1.	Design Flood Estimation for Tenga Dam (Kameng Hydro-Electric Project, 600 MW), Arunachal Pradesh,
2.	Design Flood Estimation for Bichom Dam (Kameng Hydro-Electric Project, 600 MW), Arunachal Pradesh
3.	Design Flood Estimation for Kameng Hydro-Electric Project (600 MW), Arunachal Pradesh
4.	Modelling non-point source pollution : Rainfall-runoff modelling for Dikrong Basin using AvSWAT
5.	Flood hazard mapping in Dikrong Basin, Arunachal Pradesh.
6.	Design of Raingauge station network for Arunachal Pradesh.
Meghalaya	
1.	Geomorphological study of Myntdu river basin
2.	Development of geomorphological instantaneous unit hydrograph for Myntdu-Leska basin
3.	Precipitation network design for Myntdu-Leska basin
4.	Dam break study of Myntdu Leska dam using DAMBRK model
5.	Rainfall-Runoff Analysis using flood analysis and protection systems (FLAPS) Model
6.	Design flood estimation of Myntdu-Leska basin (Meghalaya)
7.	Flood Plain Mapping of Phulbari (Meghalaya) area using satellite data
8.	Reservoir sedimentation studies for Barapani reservoir using nuclear technique.
9.	Assessment of Water Quality in Meghalaya.
10.	Plan for upgradation water Quality monitoring network for Meghalaya
11.	Acid Mine Drainage in Coal mining areas of Meghalaya
12.	Hydrological soil classification of Dudhnai sub-basin (Assam/Meghalay) Part-I
13.	Hydrological Soil classification of Dudhnai sub-basin (Assam/Meghalay) Part-II
14.	Hydro meteorological aspects of Dudhnai basin (Assam/Meghalaya)
15.	Infiltration studies of Dudhnai sub-basin.
16.	Implementation of SCS Model in Dudhnai sub-basin (Assam/Meghalaya)
17.	Hydrological Soil Classification of Dudhnai Sub-Basin
18.	Hydrogeomorphological studies : Dudhnai sub-basin (Assam/Meghalaya)
Mizoram	
1.	Tuirial H.E. Project – Mathematical modeling for prediction of floods of various return periods
Manipur	
1.	Loktak Lake Studies
Nagaland	
1.	Network design of raingauge stations for Nagaland
Sikkim	
1.	Discharge measurement of river Teesta in Sikkim using tracer dilution method
2.	Assessment of Environmental Flow Requirement in River Teesta at Teesta Stage IV Project Site
3.	Chapter for Glacier & Climate Change Commission, Govt of Sikkim

MINUTES OF THE SIXTH SITTING OF THE STANDING COMMITTEE ON WATER RESOURCES (2015-16)
HELD ON WEDNESDAY, 30 MARCH, 2016

The Committee sat from 1130 hours to 1330 hours in Room No. 53, First Floor, Parliament House, New Delhi.

PRESENT

Shri Hukum Singh – Chairperson

MEMBERS

LOK SABHA

5. Shri Sukhbir Singh Jaunapuria
6. Shri B. Vinod Kumar
4. Dr. Sidhant Mohapatra
5. Shri Abhijit Mukherjee
6. Shri Rodmal Nagar
7. Shri Subhash Patel
8. Shri Sanjay Kaka Patil
9. Smt. Aparupa Poddar
10. Shri Vishnu Dayal Ram
11. Smt. V. Sathyabama
12. Shri Lallu Singh
13. Shri L. K. Vaghela

RAJYA SABHA

14. Shri Balwinder Singh Bhunder
15. Smt. Naznin Faruque
16. Mir Mohammad Fayaz
17. Shri V. Hanumantha Rao
18. Shri Amar Shankar Sable
19. Shri A.V. Swamy
20. Shri Lal Sinh Vadodia

SECRETARIAT

1. Shri Shiv Kumar - Joint Secretary
2. Smt. Rita Jaikhani - Director
3. Shri Kushal Sarkar - Additional Director

WITNESSES

Ministry of Water Resource, River Development & Ganga Rejuvenation

1. Shri Shashi Shekhar Secretary (MoWR, RD & GR)
2. Dr Amarjit Singh Special Secretary (MoWR, RD & GR)
3. Shri Nikhilesh Jha AS & MD (NWM)
4. Dr. Amita Prasad JS (GW&Admn.)
5. Shri Jagmohan Gupta JS & FA
6. Dr. B. Rajender JS(PP)
7. Dr. Rajat Bhargava JS (CAD)
8. Shri R.K. Gupta JS & Commissioner (Pen River)
9. Shri K.M.M. Alimalmigothi Economic Advisor
10. Shri Kushvinder Vohra Commissioner (SP)
11. Shri T. S. Mehra Commissioner (B&B)
12. Shri Chotey Lal Commissioner (Flood Management)
13. Shri Manish Tripathi Director Finance
14. Shri Arvind Chaudhury Director (PP)
15. Mrs. Sudha Midha A.D.G. (Stat.)
16. Shri M. Satyanarayana Advisor (C&M/NWM)
17. Shri Bhupender Singh SJC (Indus)
18. Shri S.K. Kamboj SJC (Pen. River)
19. Shri Atul Jain Chief Engineer (HRM)
20. Shri D.P. Mathuria Director (RMC)
21. Shri L.K. Taneja Director (DSO-DRIP)
22. Shri Ravi Bhushan Kumar Director (TC)
23. Dr. B.R.K. Pillai Director (Dam Safety)

Central Water Commission

24. Shri Anup Kumar Srivastava Secretary, CWC
25. Shri Narendra Kumar Member (RM), CWC
26. Shri Rajiv Kumar Director, CWC

Central Ground Water Board

27. Shri K.B. Biswas Chairman, CGWB

National Projects Construction Corporation

28. Shri H.L. Chaudhary CMD, NPCC

Water and Power Consultancy Services Limited

29. Shri R.K. Gupta CMD, WAPCOS

National Water Development Authority

30. Shri S. Masood Hussain DG, NWDA

Polavaram Project Authority

31. Shri R. K. Gupta Member Secretary

2. At the outset, the Chairperson welcomed the Members to the sitting of the Committee, convened to have evidence of the representatives of the Ministry of Water Resources, River Development & Ganga Rejuvenation (MoWR, RD & GR) - in connection with the examination of the subject "Demands for Grants (2016-2017)". Thereafter, the Chairperson welcomed the representatives of the Ministry.

3. The representatives of the Ministry informed the Committee that as compared to 2015-16, actually there is a reduction in allocation of funds for the year 2016-17. However, this was stated to be compensated by allocation of 86,000 crore over the next four years. About 89 projects under AIBP are to be completed with this fund. There are 46 ongoing projects out of which 23 happened to be in the priority sector which would have been completed by 17th March, 2016. Rest of the projects would be completed by the year 2020. And for the purpose, there will also be borrowing of funds from the market through NABARD - which will be repaid in about 15-20 years by the Ministry from these budgetary grants. The projects which used to take 15-20 years to be completed earlier, would now take about four years.

4. Also an amount of Rs. 6235 crore was stated to be allocated for Repair, Renovation and rehabilitation of tanks. He, however, pleaded with the Committee that if the allocation of funds is increased, more renovation works can be undertaken. The Secretary urged the Committee for favourable recommendation to this effect. Elaborating further about the Demands, the Secretary submitted that the National Hydrology Project is being implemented with an aid from the World Bank. The Expenditure Finance Committee (EFC) has done the appraisal of the project in record time. The total cost of the project would be Rs. 3680 crore. With this project, the data network, National Water Information System would be created - whereby details of the water position i.e. Ground water, surface water and quality of water can be collected and monitored. During evidence, the Committee also noted that the Central Ground Water Board have declared 171 Dark Blocks, 300 Critical and 600 as Semi-critical in the country.

5. On policy side, the Secretary informed the Committee that there is 23 lakh hectare mappable area. The mapping will be completed by the 12 & 13 Plans. Funds are a constraint in early completion of work. In view of the fact that water level in the country is way below the sustainable level, a thinking is needed so that a National Ground Water Act comes into place and the whole country follows it. The Secretary sought categorical intervention of the Committee in the matter. Further, he said that the National River Conservation Department which is being looked after by the River and Wetland, should not be with the Ministry of Environment, Forests and Climate Change. As per the EFC recommendation, it should be with the Ministry of Water Resources, River Development & Ganga Rejuvenation. He also informed the Committee about an elaborate plan for the State of Jammu and Kashmir and stated that this year Rs. 399 crore has been sanctioned for constructing a 88 km bypass canal. This would immensely help in flood management programme in the Jhelum River basin.

6. On Dam Safety Bill, he said that after detailed examination by the Law Ministry, the Solicitor General of India has given a favourable opinion on the Bill. The proposed protocol under the Bill would ensure allowing the local engineers to release water from the Dam as per flood forecast, which, in turn, will help in averting the major disasters. He also said that Integrated Water Management over River Basin has become an important issue. He opined that for this, a separate River Basin Authority should be formed. An attempt to frame a law in this regard was made but it could not be passed. This law is a necessity to manage both the supply and demand side of water. On the issue of Aquifer Mapping, he felt that the entire exercise can be completed in three years' time. For this, 2700 crore would be required. Water Management should also be brought in a different framework. To this, the Chairperson insisted that the Ministry should spell out whether they would bring legislation on it and if so under what power?

7. Continuing with the appraisal, the Special Secretary informed the Committee that the expenditure incurred by the Ministry was Rs. 4928 crore in the year 2014-15. In the year 2015-16, this amount has increased to Rs. 7400 crore. In all there has been an increase of 48% in expenditure of the Ministry. A sum of Rs. 1500 crore has been given as an additional amount to the Ministry which has been spent on AIBP project. As a result of this, the pending projects got cleared. The Committee desired to know, in particular, as to whether the State Governments were happy with the NABARD arrangement for the projects under AIBP, upon which the Secretary elaborated that a Committee has been formed for working on innovative functioning management for AIBP under the Chairmanship of the Ministry of Water Resources of Government of Chattisgarh. The Committee also have Ministers of Maharashtra and Telangana and Principal Secretaries of five more States. The State Governments are very happy with

NABARD arrangement because they get funding in the same proportion, namely, 60:40. 60% is to be funded by the Government of India and 40% to be funded by the State Governments. The Secretary of the Ministry further added that they are formulating the guidelines for the AIBP - in which many conditions are being incorporated. One idea is to promote competition among the private companies in implementing the projects. This would reduce the project cost substantially as has been their experience in some of the States. The second idea is the formation of Water Users' Associations, which is to be made mandatory. The concept is until and unless the farmers adopt the participatory Irrigation Management Scheme, money will not be given. The States have been taken on board in this regard. The whole idea is to bridge the gap of Irrigation Potential created and its non-utilization. The process in this regard has already started. Help of an Research Institute in Australia is being taken. IITs, CWC, CGWB, Agriculture Department, etc. are being roped in. Moreover, the farmers are being educated and sensitized for increasing their capacity. They should understand and know how to use water, how to install Drip Sprinklers and what cropping pattern they should adopt.

8. A few areas of concerns / issues were raised by the Committee with the officials of the Ministry which are: (a) the mapping of aquifers have not been able to contain fluoride content in water which is causing fluorosis; (b) there is no proper feedback system from State to Centre; (c) there is no practical regulatory mechanism for proper checking of utilization and wastage of water in the rural areas. Water being a State subject, it makes the matter more complicated; (d) there has been an agreement between States of Maharashtra and Telangana on Chevella – Kaleshwarram project. However, it was not clear whether the Centre has accorded the status of National Project to the Chevella Project on the lines of Polavaram project; (e) there is practically no water in many rivers in the country like States of Rajasthan - where rainfall is poor and river and dams are very polluted; (f) there is an urgent need for recharging and rejuvenating the rivers and equitable exploitation of water; (g) the recommendations and observations of the Standing Committee need to be monetarily articulated in most objective terms in the Budgetary proposals of the Ministry; (h) In States like Punjab where Flood irrigation method is prevalent a lot of water has to be extracted for the purpose and to control the same, drip irrigation and sprinkle irrigation system are required to be introduced. In this context, the Chairperson suggested that for drip irrigation to be successful, there is a need for constant supply of water from an overhead tank - which should remain filled with water and as and when required, the water can be used for a few hours at a stretch. With present technology, this is not possible and this aspect needs to be taken note of and addressed. Since these methods are cost prohibitive. The Government needs to provide funds to the

tune of 80% to poor farmers to enable them to switch over to new systems. Moreover, there is an imperative need for hastening the process of mapping so that the country is saved from the drought; (i) Linking of rivers also needs to be given priority; (j) there should be coordination between Centre and States and among the States in sharing information and taking measures at the local level with regard to control of floods. Also there is an urgent need to take all precaution so that the ground water does not get contaminated by discharge from the toilets; (k) there is a case for examining the methodology adopted by Gujarat under Kalpsay Yojana and replicate it in other States, in controlling flow of water from rivers to ponds during the Monsoon, which, in turn, would ensure availability of water in rivers during the winter.

9. Against this backdrop, the Hon'ble Chairperson pointed out that despite repeated recommendations, no action has been initiated by the Ministry to bring Water, which is currently in State List, in the Concurrent List. Accordingly, the whole exercise of the Ministry would be meaningless. He further observed that National Water Policies have been framed from time to time for water management in the country. However, barring a few, none of the States have implemented these policies. Even the Budget Proposals of Ministry have not been tailored accordingly.

10. While concluding the discussion, the Chairperson expressed his concerns regarding realizing the dream of irrigating an additional land of 80 lakh hectare as envisaged in the Budget proposals of 2016-17. This was due to the fact that "Irrigation means it is only water irrigation and there is scarcity of water". He asked the Ministry to consider all the suggestions given by the Hon'ble Members of the Committee in the meeting and concentrate their energy in solving the water related problems of the country.

11. The Committee, then, asked the Secretary, MoWR, RD & GR to furnish written replies to those queries raised by Members during the sitting - which could not be replied by the representatives orally.

The witnesses then withdrew.

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

The Committee then adjourned.

MINUTES OF THE SEVENTH SITTING OF THE STANDING COMMITTEE ON WATER RESOURCES (2015-16)
HELD ON FRIDAY, 29 APRIL 2016

The Committee sat from 1500 hours to 1530 hours in Committee Room 'C', Ground Floor, Parliament House Annexe, New Delhi.

PRESENT

Shri Hukum Singh – Chairperson

MEMBERS

LOK SABHA

2. Shri Radheshyam Biswas
3. Shri B. Vinod Kumar
4. Shri Maganti Murali Mohan
5. Shri Sidhant Mohapatra
6. Shri Sanjaykaka Ramchandra Patil
7. Shri Lallu Singh
8. Shri Liladharbhai Vaghela

RAJYA SABHA

9. Shri Amar Shankar Sable
10. Shri A.V. Swamy
11. Shri Lal Sinh Vadodia

SECRETARIAT

1. Shri Shiv Kumar - Joint Secretary
2. Smt. Rita Jaikhani - Director
3. Shri Kushal Sarkar - Additional Director

2. At the outset, the Chairperson welcomed the Members to the sitting of the Committee. Thereafter, the Committee took up for consideration and adoption of Draft Report on Demands for Grants (2016-17) of the Ministry of Water Resources, River Development and Ganga Rejuvenation. After some deliberations, the Committee adopted the aforesaid draft Report without any modification.

3. The Committee then authorized the Chairperson to present the above Report to both the Houses of Parliament in the current Budget Session.

The Committee then adjourned