STANDING COMMITTEE ON WATER RESOURCES
(2011-2012)

12

FIFTEENTH LOK SABHA

MINISTRY OF WATER RESOURCES

AUGMENTATION OF DEPLETED GROUND WATER LEVEL, SUSTAINABLE DEVELOPMENT, CONSERVATION, MANAGEMENT, USE OF GROUND WATER AND PREVENTION OF WATER POLLUTION

{Action Taken by the Government on the Recommendations/Observations contained in the Tenth Report (Fifteenth Lok Sabha) of the Standing Committee on Water Resources}

TWELFTH REPORT

LOK SABHA SECRETARIAT

March, 2012/ Bhadrapada,1933 (Saka)

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Presented to Lok Sabha on 27.03.2012

Laid in Rajya Sabha on 27.03.2012

LOK SABHA SECRETARIAT
NEW DELHI

March, 2012 /Bhadrapada, 1933 (Saka)

WRC NO. 31

Price:

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SECRETARIAT

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2.	Shri B.S. Dahiya	-	Director
3.	Smt. Rita Jailkhani	-	Additional Director
4.	Shri G. Guite	-	Committee Officer
5.	Shri Samresh Kumar Parcha	-	Sr. Committee Assistant

INTRODUCTION

I, the Chairman, Standing Committee on Water Resources (2011-2012) having been authorised by the Committee, do present on their behalf the Twelfth Report to Parliament on the Action Taken by Government on the recommendations/observations contained in the Tenth Report (Fifteenth Lok Sabha) of the Standing Committee on Water Resources (2010-2011) on "Augmentation of Depleted Ground Water Level, Sustainable Development, Conservation, Management, Use of Ground Water and Prevention of Water Pollution".

2. The Tenth Report of the Committee was presented to Lok Sabha on 30th August, 2011. The replies of the Government to all the recommendations contained in the Report were received on 13th December, 2011.

3. The replies of the Government were examined and the Report was considered and adopted by the Committee at their sitting held on 29th February, 2012.

4. An analysis of the Action Taken by the Government on the recommendations/observations contained in the Tenth Report (Fifteenth Lok Sabha) of the Committee is given in Appendix-II.

NEW DELHI;
13 March, 2012
23 Phalguna, 1933 (Saka)

DIP GOGOI,
Chairman,
Standing Committee on Water Resources

CHAPTER I

REPORT

This Report of the Standing Committee on Water Resources deals with the action taken by the Government on the recommendations / observations contained in their Tenth Report (15th Lok Sabha) on "Augmentation of Depleted Ground Water Level, Sustainable Development, Conservation, Management, Use of Ground Water and Prevention of Water Pollution" which was presented to Lok Sabha on 30 August 2011.

2. Action taken notes were received from the Government in respect of all the 23 recommendations/observations of the Committee which have been categorised as follows:-

(i) Recommendations/Observations which have been accepted by the Government:

Para Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 and 22 (Total - 22)

(ii) Recommendations/Observations which the Committee do not desire to pursue in view of the Government's replies:

Nil (Total -NIL)

(iii) Recommendations/Observations in respect of which replies of the Government have not been accepted by the Committee:

Para Nos. 23 (Total -01)

(iv) Recommendation/Observation in respect of which final reply of the Government is still awaited:

Nil (Total - NIL)

3. The Committee will now deal with the action taken by the Government on some of the recommendations/observations in the succeeding paragraphs.

A. Management of ground water depletion.

Recommendation (Para No. 1)

4. The Committee noted that the country possesses an estimated 1,123 billion cubic meters (bcm) of utilizable water per year. Unfortunately, the share of replenishable ground water is only 433 bcm and only 58 per cent of the total replenishable ground water is being utilized for various purposes. Over 80 per cent of India's rural domestic water requirement and about 50 per cent of its urban and industrial water needs are being met from ground water sources. In addition, approximately 45 per cent of created irrigation potential in the country is through exploitation of ground water resources. However, the development of ground water in different areas of the country is highly uneven. The Committee had noted with grave concern the alarming trends in the last few decades of indiscriminate exploitation of ground water resources for domestic, irrigation and industrial uses and also due to vast urbanization which have resulted in depletion of limited ground water resources in certain parts of India. They had also noted that as per the analysis made by the Ministry on ground water levels during May, 2009, as compared with the mean water levels of the previous decade (May 1999-May 2008), ground water levels had shown a decline in about 55 per cent of observation wells during the period. Further, fall in water level of more than 2 meters on long term basis has been observed in areas like parts of Madhya Pradesh, Uttar Pradesh, Gujarat, Eastern Rajasthan, Haryana, Punjab and eastern Maharashtra. Taking note of the indiscriminate over exploitation of ground

water and alarming fall in the water table particularly in certain areas, the Committee had strongly urged the Government for immediate and comprehensive ground water resource planning, development and management on a long term basis. The exploitation of ground water resources be so regulated as not to exceed the recharging capacities of the underground aquifers in particular aquifer zones and ground water recharge projects be developed and effectively implemented by the Government for improving both the quality and quantity of scarce ground water resource.

5. The Ministry, in its action taken note replied as under :

"In order to have aquifer wise planning for ground water resource development and management it is proposed to take up aquifer mapping to delineate the aquifers as unit for water management in the country through integration of geologic, geophysical, hydrogeologic, hydrologic, and water quality data during XII Plan. This will help in comprehensive planning and development of the ground water resources of the country. It is also envisaged to develop a web based Aquifer Information and Management System (AIMS) on GIS platform for sustainable management of ground water resources. This would involve preparation of layered thematic maps using 1:50,000 scale digital data, Paper maps / remote sensing data / Satellite data as per NRIS code.

To facilitate regulation of ground water development by States/ UT Governments, Ministry of Water Resources has already circulated the Model Bill to regulate and control the development of ground water. So far, States of Andhra Pradesh, Bihar, Goa, Himachal Pradesh, Kerala, Tamil Nadu, West Bengal and UTs of Chandigarh, Dadra &

Nagar Haveli, Lakshadweep and Puducherry have enacted ground water legislation. Another 19 states and UTs have initiated the action for enactment of legislation on the lines of Model Bill. Central Ground Water Authority constituted under Section 3(3) of the Environment (Protection) act of 1986 has notified 82 areas in the country for regulation of ground water development.

Government of Gujarat through a resolution vide reference No. GWR/1095/6/1.1/Ja-1 dated 19.9.2001 has constituted Gujarat Ground Water Authority under the administrative control of Narmada and Water Resources Authority for systematic administration of ground water management, its development, control and regulation. Government of NCT, Delhi vide Order No. F8(348)/EA/Env/09 dated 31.3.2009 has notified all the districts of NCT, Delhi for regulation of ground water development."

6. The Committee note the Government propose (i) to take up aquifer mapping to delineate the aquifers as unit for water management in the country through integration of geologic, geophysical, hydrogeologic, hydrologic, and water quality data during XII Plan; (ii) to develop a web-based Aquifer Information and Management (AIMS) on GIS platform for sustainable management of ground water resources through preparation of layered thematic maps using 1:50,000 scale digital data, paper maps/remote sensing data/Satellite data as per NRIS code.

The Committee would like the Ministry to expeditiously complete the exercise for 'aquifer mapping' within the scheduled period of XII Plan and also concretise the proposed development of web-based AIMS on GIS platform.

7. The Committee further note the Ministry's reply that apart from the States of Andhra Pradesh, Bihar, Goa, Himachal Pradesh, Kerala, Tamil Nadu, West Bengal and UTs of Chandigarh, Dadra & Nagar Haveli, Lakshadweep and Puducherry which had enacted ground water legislation, another 19 States and UTs had initiated the action for enactment of legislation on the lines of Model Bill and that CGWB has notified 82 areas in the country for regulation of ground water development. Further, the Committee have also noted that the State of Gujarat has constituted state Ground Water Authority and the Government of NCT Delhi had, on 31.3.2009, notified all the districts of NCT Delhi for regulation of ground water development. The Committee, while applauding these efforts made by different States/UTs and CGWB towards prevention of ground water depletion, urge the Ministry to prod the remaining 19 States/UTs to complete the enactment of legislation on the lines of Model Bill. Additionally, these States/UTs may also be financially incentivized specially the States having water scarcity areas. Noting the Ministry's reply that the Government of Gujarat has banned construction of new wells in Over-exploited and Critical category areas in the State, the Committee strongly recommend that the example of Gujarat be held out to those States/UTs as model for dealing with problems of ground water in areas having similar problems. While acknowledging the fact that 'Water' is a State subject, the Committee recommend that the Ministry offer enhanced Central assistance to make States/UTs adopt innovative methods and techniques of ground water recharge and management, including enactment of 'Ground Water Code' as already done in the State of Arizona, USA. The Committee also reiterate their earlier recommendation regarding innovative methods

adopted by Oman for sustainable ground water management and, therefore, urge the Government for circulating Model Code to States/UTs on this vital issue, viz. mandatory registration of all wells, maintaining of national well inventory and well metering, so that the issue of ground water depletion is dealt with all seriousness by all the States/UTs of the country. They would like to be apprised of progress made in this regard at the earliest.

B. Need for tackling the problem of untreated effluent discharged from industrial units.

Recommendation (Para No. 8)

8. The Committee observed that in some parts of the country, especially eastern Uttar Pradesh polluted water from sugar factories and distilleries greatly affected the quality of ground water to the extent that it gives a reddish colour to the water. However, no case of punishment awarded to water polluters or environmental offenders in the country had been brought to the notice of the Committee. The Committee had, therefore, recommended that the Government pull up its socks and attempt to get existing pollution control laws enforced strictly by concerned bodies such as Central Pollution Control Board, Central Ground Water Authority and by the State Governments. They had also desired the Government to tone up the functioning of these bodies by calling for biennial reports on the status of pollution levels of rivers and water bodies located all over the country, and also by insisting on regular inspection of factories, including tanneries located in high-pollution areas/ zones like Kanpur in Uttar Pradesh by the Central Pollution Control Board and District Collectors and submission of their

findings to CGWA at least twice a year. The Committee had also desired that they be informed of the steps taken by the Ministry in this regard.

9. The Ministry, in its action taken note replied as under :

"CGWA had requested all the Regional Directors for inspection of industries to whom NOCs have been provided by forming multi disciplinary groups. Process has been initiated by the Regional Offices.

WQAA has taken up special studies involving NIH, CGWB and CWC jointly to study contamination of surface and ground water by Simbhaoli Sugar Mills and distilleries in U.P. Directives have been issued to CPCB for initiation of punitive action. CPCB issued directives to Simbhaoli Sugar Mills under Section 5 of Environment Protection Act, 1986 for compliance. As per the directives of WQAA, Central Ground Water Board has taken up special studies on ground water pollution around Breweries and Distilleries in all over India. A project 'Study of Water Quality of the Existing Water Bodies of Meerut District on GIS Platform' has been initiated with full financial support from WQAA by Janhit Foundation, Meerut. Under this project water quality of 653 water bodies of Meerut district are being studied including pesticides. Directives have been issued to Central Ground Water Board for preparation of detailed reports on contamination of ground water in 88 Industrial clusters of India."

10. The Committee note that the CGWA had requested all the Regional Directors for inspection of industries issued NOCs for forming multi-disciplinary groups and that the Regional Offices, CGWA have initiated the process in the matter. The Committee would like to be apprised of the reports of inspection of industries already initiated by Regional

Offices of CGWA. The Committee have also noted that Water Quality Assessment Authority (WQAA) had taken up special studies involving NIH, CGWB and CWC jointly to study contamination of surface and ground water caused by Simbhaoli Sugar Mills and distilleries in Uttar Pradesh. Directives had been issued to CPCB for initiation of punitive action and, accordingly, CPCB had issued directives to that concerned sugar mill under Section 5 of Environment Protection Act, 1986 for compliance. The Committee also observe that a project called 'Study of Water Quality of the Existing Water Bodies of Meerut District on GIS Platform' had been initiated by Janhit Foundation, Meerut with full financial support from WQAA under which water quality of 653 water bodies of Meerut district are being studied including pesticides. The Committee desire to be apprised of the outcome of the study carried out by Janhit Foundation, Meerut of 653 water bodies of Meerut. They ardently hope that violators of pollution control laws, including the above stated factories in Uttar Pradesh are reined in under relevant laws at the earliest, so that water polluters/environmental offenders in the country are effectively deterred from causing grievous harm to the quality of ground water. Noting that directives had been issued to CGWB for preparation of detailed reports on contamination of ground water in 88 industrial clusters of India, the Committee also desire to see early completion of compilation of detailed reports by CGWB in this regard . They would like to be appeised of the details of this report at the earliest.

C. Need to complete WRIS project in time.

Recommendation (Para No. 9)

11. The Committee had noted that the Government has taken up a new Plan Scheme called Development of Water Resources Information System (WRIS) in the Eleventh Plan for developing information system on water resources at the national level. The first phase of WRIS was inaugurated by the Ministry of Water Resources on 7 December 2010 and the project is scheduled to be completed by December 2012. The Committee had desired that the WRIS be completed by the scheduled date positively. The Committee had further noted that the CGWB has developed a 'Web-enabled Ground Water Information System (WEGWIS) in collaboration with NIC, which aims at providing a unified internet-based access to water related information (spatial/ non spatial) for policy planning and management. The Committee recognized the potential value of WEGWIS for effective management of our precious ground water resources, and desired the Ministry to get the data and information on this system updated regularly so that the policy-makers, decision-makers, and the public at large benefit from this advanced modern web-enabled information system.

12. The Ministry, in its action taken note replied as under :

"The Web enabled Ground Water Information System (GWIS) has been developed by CGWB in collaboration with National Informatics Centre (NIC) to provide users web based access to groundwater related information for policy planning and management. Various thematic layers related to ground water have also been placed at the website. Ground water level and water quality data for last five years have been posted at the

website so that any user may access the data. The data is being updated regularly at the website.

Water Quality Division, Ministry of Water Resources is providing secretariat services to Water Quality Assessment Authority. For the dissemination of Information and for the creation of a database for direct utilisation by the end user/public a MIS based Website has been designed. Some of the salient features are, Compliance with Government "Guidelines for Indian Government Websites", Accessible Website Structure via Internet Explorer, Mozila Firefox and other browser with support to Mobile Phones and will be Disabled friendly, Website designing with a better User Interface, Dynamic Content Management System Feature, Bilingual Management Module Development (Hindi & English), Water Quality Assessment Information Management Module, Reports/Publication Management Module with Content Integration."

13. The Committee, while noting the reply of the Government that the ground water level and water quality data posted on WEGWIS for the last 5 years is being regularly updated, are perturbed that the reply is studiously silent on the Committee's recommendation relating to timely completion of WRIS project. This speaks volume about the importance attached to such a vital matter by the Ministry. The Committee, therefore, reiterate their earlier recommendation and desire that the project be completed according to its scheduled date, viz. December, 2012. They would like to be informed of further action in the matter.

D. Need for additional efforts on artificial recharge to ground water/rainwater harvesting schemes.

Recommendation (Para No. 15)

14. The Committee had noted that apart from artificial recharge to ground water, rain water harvesting is another great potential method of augmentation of ground water resources. The Committee had also noted that the Central Ground Water Authority (CGWA) has directed all States having 'over-exploited' areas to promote / adopt rain water harvesting, and that as a result of which 18 States and 4 Union Territories (UTs) have amended building by-laws for making rain water harvesting mandatory. Similarly, the Committee were also pleased to note that the CGWA directions for adoption of roof top water harvesting system to Group Housing Societies, Institutes, Hotels, Industries, Farm Houses, etc. in the notified areas of Delhi, Faridabad, Gurgaon, Ghaziabad and other areas of NCT Delhi having water table 8 meters below ground surface, has received encouraging responses, and that the Delhi Jal Board in NCT Delhi is providing assistance of 50 per cent of the cost uptoRs. 1 lakh to Group Housing Societies, RWAs, Charitable Institutions, etc. to motivate them to opt for rain water harvesting. It is noted that financial assistance has been approved in 206 cases and that a total of 299 training programmes have so far been conducted for capacity building of stakeholders in designing of rain water harvesting structures to augment ground water in different terrains and hydrological conditions. The Committee had desired that the Government explore the possibility of making rain water harvesting mandatory in all the buildings of the Government – Central as well the States, wherein their Ministries/ Departments, etc. are located. They had

felt that if more attractive incentives are offered for rain water harvesting, achievement of the desired objectives may not be far off.

15. The Ministry, in its action taken note replied as under :

"For promoting Rain Water Harvesting/adoption of Artificial Recharge to Ground Water in the country (except in the water logged areas), Central Ground Water Authority has issued directions for implementation of rain water harvesting and ground water recharge for arresting rainfall runoff occurring along all National Highways, State Highways, and other major roads by Central Road Research Institute, National Highways Authority of India, Central Public Works Department, State Public Works Departments; along rail tracks and other establishments of Indian Railways, in the Stadia by Sports Authority of India, Board of Control for Cricket in India, Departments of sports and Youth Affairs and in the Airports by Airport Authority of India, Ministry of Civil Aviation.The Authority has also directed the Chief Secretaries/ Administrators of all the States/ Union Territories and Ministry of Urban Development to take necessary action to adopt rain water harvesting/ artificial recharge on all the Government buildings. Ministry of Water Resources have also instituted Ground Water Augmentation Awards & National Water Award which are aimed at encouraging Non-Governmental Organizations (NGOs)/ Gram Panchayats/ Urban Local Bodies/ Institutions/ Corporate Sector and Individuals for adopting innovative practices of ground water augmentation by rainwater harvesting and artificial recharge, promoting water use efficiency, recycling & re-use of water and creating awareness through people's participation. In total, there are 20 Ground Water Augmentation Awards for six categories consisting of Rs. 1 lakh

and a plaque with citation and one National Water Award consisting of a cash award of Rs. 10 lakh and a plaque with citation."

16. The Committee note the reply of the Ministry that CGWA had issued directions for implementation of rain water harvesting and ground water recharge for arresting rainfall runoff occurring along National Highways, State Highways, and other major roads by Central Road Research Institute, National Highways Authority of India, CPWD, State Public Works Departments; along rail tracks and other establishments of Indian Railways; in the stadia by SAI, BCCI, Departments of Sports and Youth Affairs; and in the airports by Airport Authority of India, Ministry of Civil Aviation. The Committee reiterate their recommendation contained in their 10th Report that the Government make rain water harvesting mandatory in all Government buildings and organizations part of the State. They are of the considered view that office buildings/premises belonging to State Governments also be covered under the directions, and that necessary steps be initiated by the Ministry in this regard. Besides, the Committee would also like to reiterate that the MOWR keep effective tab on enforcement of rain water harvesting laws in those 18 States by calling for biennial reports of progress made by various offices, authorities, organizations and institutions falling under State Governments. Additionally, they are also of the view that the remainder States may be persuaded to take up similar measures, first by enactment of mandatory rain water harvesting laws and secondly, by proper enforcement of these laws. The Committee desire that financial incentives in the form of enhanced Central Grants be offered to States/UTs which have demonstrated comparatively better performances in regard to implementation of schemes/laws on

ground water recharge and rain water harvesting to stimulate a sense of urgency among the States, in addition to the system of cash awards, citation, etc. presently put in place by the Ministry. Taking note the reach of the media, both print and electronic, concerted efforts be made by the Government to heighten public awareness to build a national movement for effective and futuristic water augmentation and water management throughout the country.

E. Need to invoke people's participation in augmentation of ground water.

Recommendation (Para No. 21)

17. The Committee were in their earlier report pleased to note that the Government had in 2007 instituted two annual awards, namely 'Ground Water Augmentation Awards' (Bhoomijal Samvardhan Puruskar) and 'National Water Award' carrying cash awards of Rs. 1 lakh and Rs. 10 lakh respectively to encourage the NGOs/Gram Panchayats/Urban Local Bodies (for population upto 1 lakh)/ institutions/ Corporate Sector and individuals for adopting innovative practices of ground water augmentation by rain water harvesting and creating awareness in the target areas. Besides the Ministry's proposal to use IT Kiosks installed in big villages to propagate information on ground water in local language with pictorial depiction and also plans to make available the expertise of scientists deployed in districts for teaming up with district magistrates and panchayats in its drive to have effective water conservation, development, augmentation and exploitation. The Committee had also noted that the Ministry plans to deal with the problem of shortage of scientific manpower at district levels. The Committee hoped

that the efforts of the Ministry to encourage the local bodies etc. and to create awareness among the target areas will fructify soon. They liked to be apprised of the positive outcome of the steps initiated by the CGWB for mass awareness campaigns throughout the country by involving Central/ State/NGOs, Voluntary Organizations/ RWAs, educational institutions, industries and individuals as also the impact of all other connected efforts.

18. The Ministry, in its action taken note replied as under :

"The Mass Awareness and Training Programmes conducted and other efforts made by Central Ground water Board have received positive response from the Central/State Government Organisations, NGOs/ Voluntary Organisations, RWAs, educational institutions etc. Many State Governments/ NGOs/ VOs/ RWAs have undertaken actions for adoption of rainwater harvesting and artificial recharge."

19. The Committee note that the Mass Awareness and Training programmes conducted and other efforts made by CGWB had reportedly elicited positive responses from the Central/State Government organizations, NGOs/voluntary organizations, RWA, educational institutions, etc. However, considering the serious scenario obtaining on the ground water front in India at present, the Committee believe that efforts made by various groups and organizations, including educational institutions, NGOs, RWA and local bodies need to be streamlined and better channelized, so that these synchronise with the schemes/programmes of the Central/State governments, to produce the intended results. For this, it is imperative that the Ministry pursue the State Governments to keep tab on efforts made by various groups and organizations, including educational institutions, NGOs, RWA and local bodies within their respective

jurisdictions, so that targets are set and the results achieved thereon be compiled and made available to respective State Governments at least on annual basis. It is also possible that better results may be achieved in this regard if cash incentives are provided to educational institutions, NGOs, RWA and local bodies by State Governments. The Committee, therefore, desire that the Ministry pull up its socks and make all-out and vigorous efforts to keep tab on all connected efforts of various groups and organizations, including educational institutions, NGOs, RWA and local bodies within their respective jurisdictions to achieve tangible results on the ground water front.

F. Need to build national consensus to bring water either in the Union List or in the Concurrent List.

Recommendation (Para No. 22)

20. The Committee had urged the Government to initiate steps in the right earnest to strive to build national consensus to bring water either in the Union List or in the Concurrent List after due consultation with the State governments so that a comprehensive national plan of action is evolved for water conservation, development, exploitation and equitable distribution in the larger and long term national interest. The Committee had recommended that the draft proposal in this regard be initiated by the Ministry expeditiously.

21. The Ministry, in its action taken note replied as under :

"The Cabinet Secretariat constituted a Committee on Allocation of Natural Resources (CANR) under the chairmanship of Shri Ashok Chawla vide order dated 31st January

2011. The Committee submitted its report on 31st May 2011. The committee inter-alia recommended as follows:-

The Committee sees an urgent need to have a comprehensive national legislation on water. This can be done either through bringing water under the Concurrent List and then framing the appropriate legislation; or by obtaining consensus from a majority of the States that such a "framework law" is necessary and desirable as a Union enactment. The legal options in this regard need to be examined by the Ministry of Water Resources. The national legislation should clarify a common position on a number of issues, e.g., need to consider all water resources as conjunctive, unified whole; water as a common property resource; principles of allocations and pricing and so on. The framework legislation should recognize that pollution also leads to conjunctive use of water, which makes the resources unusable for other purposes".

The recommendations of CANR have been referred to a Group of Ministers.

It is further stated that Ministry of Water Resources has established National Water Mission Secretariat to achieve goals & Strategies identified under National Water Mission.

Two of the five goals of the National Water Mission are:

i) Promotion of citizen and State actions for water conservation, augmentation and preservation.

ii) Focused attention to vulnerable areas including over exploited area.

The strategies for achieving the above Goals as stipulated in the Mission Document of National Water Mission are as follows:

Goal: Promotion of citizen and State actions for water conservation, augmentation and preservation

- Empowerment and involvement of Panchayati Raj Institutions, urban local bodies, Water Users' Association and primary stake holders in management of water resources with focus on water conservation, augmentation and preservation
- Promote participatory irrigation management
- Sensitization of elected representatives of over-exploited areas on dimensions of the problems and to orient investment under MNREGP toward water conservation.
- Provide incentives for water neutral and water positive technologies.
- Encourage participation of NGOs in various activities related to water resources management, particularly in planning, capacity building and mass awareness.
- Involve and encourage corporate sector/industries to take up, support and promoted water conservation, augmentation and preservation within the industry and as part as corporate social responsibility.

Goal: Focused attention to vulnerable areas including over-exploited areas

- Expeditious implementation of water resources projects particularly the multipurpose projects with carry over storages benefitting drought prone and rain deficit areas.
- Promotion of traditional system of water conservation.

- Physical sustainability of groundwater resources.
- Intensive programme for ground water recharge in over-0exploited, critical and semi-critical areas.
- Conservation and preservation of wetland.
- Intensive programme for addressing the quality aspects of drinking water
- Systematic approach for coping with floods."

22. The Committee note that the Cabinet Secretariat constituted a Committee on Allocation of Natural Resources (CANR) under the chairmanship of Shri Ashok Chawla vide order dated 31st January 2011. The Committee submitted its report on 31st May 2011 which, among others, has spelt out an urgent need to have a comprehensive national legislation on water, either through bringing water under the Concurrent List and then framing the appropriate legislation; or by obtaining consensus from a majority of the States that such a "framework law" is necessary and desirable as a Union enactment and the legal options in this regard need to be examined by the Ministry of Water Resources. The recommendations of CANR have also reportedly been referred to a Group of Ministers. The Committee further note that Ministry of Water Resources has established National Water Mission Secretariat to achieve goals & Strategies identified under National Water Mission. The Committee expect and hope that the Ministry take follow up action in the matter in right earnest, including exploring the required legal option as recommended by the CANR in its report dated 31st May, 2011 so that the stage set for enactment of a comprehensive national legislation on water in the near future.

The Committee also desire to be apprised of further action taken by the Ministry in this regard.

G. Need to collect data of the major river systems of the country.

Recommendation (Para No.23)

23. Keeping in view the apprehension of diversion of waters of some international rivers by the riparian country, the Committee had urged the Government to furnish complete data of the major river systems of the country, indicating the volume of water in each river system at the point where the river enters India and the volume at the point where it falls into the sea or it flows into the territory of adjoining country, and also the volume of water diverted or utilized for irrigation purposes within the country, river-system wise for the last ten years.

24. The Ministry, in its action taken note replied as under :

"On Brahmaputra and its tributaries originating in China viz. Siang, Subansiri and Lohit, data collection near Indo-Tibet border has started in late2006. As such, average estimate of volume of water at the points where these streams enter India have been estimated on the basis of the rainfall-runoff data being collected at various project sites in Arunachal Pradesh using hydrological methods as follows:-

Name of River	Monsoon	Non Monsoon	Total
Siang	56.12	21.98	78.10 BCM
Subansiri	12.85	4.82	17.67BCM
Lohit	20.77	10.29	31.06BCM

The volume of water at the point where river Brahmaputra enters into Bangaladesh has been estimated on the basis of data observation at Dhubri as 629.05BCM in monsoon and 188.03BCMin Non-monsoon). An Index map indicating the above information is enclosed."

25. The Committee observe that the reply of the Ministry is silent regarding the data on other major river systems of the country. They further note that even while information/data pertaining to the Brahmaputra and its tributaries has been provided by the Ministry, the period pertaining to the above stated information/data has not been specified. The Committee deprecate the half-baked reply furnished by the Ministry. Convinced that compilation of complete data of major rivers in the country is an essential tool for planning and judicious management and utilization of water, the Committee reiterate that the Government consider the desirability of compiling complete data of the major river systems of the country at the earliest, indicating the volume of water in each river system at the point where the river enters India and the volume at the point where it falls into the sea or it flows into the territory of adjoining country, and also the volume of water diverted or utilized for irrigation purposes within the country, river-system wise.

CHAPTER II

RECOMMENDATIONS/OBSERVATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

Recommendation (Para No.1)

The Committee, while recognizing the fact that water is a scarce and valuable resource, note that the country possesses an estimated 1,123 billion cubic meters (bcm) of utilizable water per year. Unfortunately, the share of replenishable ground water is only 433 bcm and only 58 per cent of the total replenishable ground water is being utilized for various purposes. Over 80 per cent of India's rural domestic water requirement and about 50 per cent of its urban and industrial water needs are being met from ground water sources. In addition, approximately 45 per cent of created irrigation potential in the country is through exploitation of ground water resources. However, the development of ground water in different areas of the country is highly uneven. While ground water exploitation is very high in western, north western and southern parts of the country covering the States of Rajasthan, Haryana, Punjab, Western Uttar Pradesh, Gujarat, Maharashtra, Andhra Pradesh and Tamil Nadu, the level of ground water exploitation in States like eastern Uttar Pradesh, Bihar, West Bengal, most parts of Orissa and entire North-East is very low. The Committee also note that the sub-optimal development of ground water in Assam (North East), Bihar, West Bengal and parts of Uttar Pradesh as compared to Haryana, Punjab and Western Uttar Pradesh is attributed to availability of surface water resources, coupled with socio-economic factors like fragmented land holdings, lack of adequate infrastructural facilities and financial condition of majority of farmers. However, the Ministry quoting the Report 'Food Security, Water and Energy Nexus' of the National Rainfed Area Authority, Ministry of Agriculture, find that 'puddle rice cultivation is the main culprit of excessive exploitation of ground water in north-west India and hence decline in ground water table". The Committee note with grave concern the alarming trends in the last few decades of indiscriminate exploitation of ground water resources for domestic,

irrigation and industrial uses and also due to vast urbanization which have resulted in depletion of level of limited ground water resources in certain parts of India. They also note that as per the analysis made by the Ministry on ground water levels during May, 2009, as compared with the mean water levels of the previous decade (May 1999-May 2008), ground water levels have shown a decline in about 55 per cent of observation wells during the period. Further, fall in water level of more than 2 meters on long term basis has been observed in areas like parts of Madhya Pradesh, Uttar Pradesh, Gujarat, Eastern Rajasthan, Haryana, Punjab and eastern Maharashtra. According to the Report of Central Ground Water Board, as on March, 2004, against availability of ground water of 0.28 bcm, withdrawal for irrigation, domestic and industrial use is being made annually to the tune of 0.48 bcm in NCT Delhi. Out of 9 zones in Delhi, only 2 are safe zones, while the remaining 7 were reported to be over-exploited ones in terms of ground water development. Observations made by CGWA on 197 wells in regard to changes in the past 10 years, i.e. between January 2000 and January 2009, reportedly reveals that ground water levels registered a fall in 143 wells as against rise noticed in only 54 wells. Fortunately, ground water which occurs in a variety of geological formations across the country, is a replenishable resource. Rainfall is the principal source of recharge to ground water followed by canals, irrigated fields and water bodies as other sources of recharge. Taking note of the indiscriminate over exploitation of ground water and alarming fall in the water table particularly in certain areas, the Committee strongly urge the Government for immediate and comprehensive ground water resource planning, development and management on a long term basis. The exploitation of ground water resources be so regulated as not to exceed the recharging capacities of the underground aquifers in particular aquifer zones and ground water recharge projects be developed and effectively implemented by the Government for improving both the quality and quantity of scarce ground water resource.

Reply of the Government

In order to have aquifer wise planning for ground water resource development and management it is proposed to take up aquifer mapping to delineate the aquifers as unit for water management in the country through integration of geologic, geophysical, hydrogeologic, hydrologic, and water quality data during XII Plan. This will help in comprehensive planning and development of the ground water resources of the country. It is also envisaged to develop a web based Aquifer Information and Management System (AIMS) on GIS platform for sustainable management of ground water resources. This would involve preparation of layered thematic maps using 1:50,000 scale digital data, Paper maps / remote sensing data / Satellite data as per NRIS code.

To facilitate regulation of ground water development by States/ UT Governments, Ministry of Water Resources has already circulated the Model Bill to regulate and control the development of ground water. So far, States of Andhra Pradesh, Bihar, Goa, Himachal Pradesh, Kerala, Tamil Nadu, West Bengal and UTs of Chandigarh, Dadra & Nagar Haveli, Lakshadweep and Puducherry have enacted ground water legislation. Another 19 states and UTs have initiated the action for enactment of legislation on the lines of Model Bill. Central Ground Water Authority constituted under Section 3(3) of the Environment (Protection) act of 1986 has notified 82 areas in the country for regulation of ground water development.

Government of Gujarat through a resolution vide reference No. GWR/1095/6/1.1/Ja-1 dated 19.9.2001 has constituted Gujarat Ground Water Authority under the administrative control of Narmada and Water Resources Authority for systematic administration of ground water management, its development, control and regulation. Government of NCT, Delhi vide Order No. F8(348)/EA/Env/09 dated 31.3.2009 has notified all the districts of NCT, Delhi for regulation of ground water development.

Comments of the Committee

(Please see Para No. 6 and 7 of Chapter-I of the Report)

Recommendation (Para No. 2)

The Committee further observe that withdrawal of ground water in excess of natural recharge capacity has caused decline in ground water table in some parts of the country, as also did other contributory factors such as (i) increasing demand of ground water for agriculture, industrial and drinking purposes, (ii) change in cropping pattern and growing of paddy and cash crops that consume large quantities of water, (iii) flat rate/free electricity to farmers for extracting water in certain States (iv) rapid pace of urbanization resulting in reduced natural recharge to aquifers and (v) scanty rainfall in arid and semi-arid regions. Noting that the exploitation of water being a State subject under the constitutional set-up, the Committee call upon the Ministry to induce all the States to adopt an appropriate and uniform regulatory mechanism to curb wasteful, excessive withdrawal of ground water by water-users such as farmers, industries, etc. The Committee would also like to caution that flat rate/ free electricity granted by some State Governments for extracting ground water will lead to indiscriminate exploitation and water scarcity in the long run. The Committee also recommend that ground water exploitation be regulated judiciously by involvement of local bodies like panchayats and Water User Associations (WUAs) and the need for building strong public awareness for water harvesting, conservation and sustainable exploitation.

Reply of the Government

A Model Bill to regulate and control development of ground water has been circulated to States/ UT Governments by the Ministry of Water Resources to facilitate enactment of suitable ground water legislation. So far, States of Andhra Pradesh, Bihar, Goa, Himachal Pradesh, Kerala, Tamil Nadu, West Bengal and UTs of Chandigarh, Dadra & Nagar Haveli, Lakshadweep and Puducherry

have enacted ground water legislation. Another 19 states and UTs have initiated the action for enactment of legislation on the lines of Model Bill.

Central Ground Water Authority, constituted under Section 3 (3) of the Environment (Protection) Act, 1986 to regulate and control development and management of ground water resources in the country, has been conferred with the following powers:

(i) Exercise of powers under section 5 of the Environment (Protection) Act, 1986 for issuing directions and taking such measures in respect of all the matters referred to in sub-section(2) of section 3 of the said Act.

(ii) To resort to penal provisions contained in sections 15 to 21 of the said Act.

(iii) To regulate and control, management and development of ground water in the country and to issue necessary regulatory directions for the purpose.

(iv) Exercise of powers under section 4 of the Environment (Protection) Act, 1986 for the appointment of officers.

Central Ground Water Authority (CGWA) has requested the Chief Secretaries/Adinistrators of States/UTs for formation of district level committees involving local authorities for evaluation of project proposals seeking clearance for ground water withdrawal for new/ expansion industries.

Central Ground Water Authority is also carrying out IEC activities in the country which include Mass Awareness Programmes, Water Management Trainings, Jalyatras and distribution of brochure/pamphlets etc., for creating awareness about conservation of water. In these activities rural population is also involved including Panchayats and Water User Associations. From the year 2010-11 Ministry of water resources is also conducting painting competition for the students of 4th, 5th and 6th Standards to make them aware about need for water conservation.

Recommendation (Para No. 3)

The Committee are seriously concerned that India's initial National Communication to United Nations Framework and Convention on Climate Change (NATCOM, 2004)) submitted by the Ministry of Environment and Forests projects a very gloomy future scenario about the impact of climate change on water availability in country. The report has predicted that climate change is likely to adversely affect the water balance in different parts of India due to changes in precipitation and evapotranspiration and rising sea levels, leading to increased saline intrusion into coastal and island aquifers. Increased frequency and severity of floods is expected to affect ground water quality in alluvial aquifers, while increased rainfall intensity may lead to higher runoff and the possibility of reduced recharge. Fully aware of the threat posed by the reality of global climate change, the Committee desire the Ministry to devise a long term action plan in consultation with other associated Ministries such as Agriculture, Environment and Forests, Industry and Commerce and Science and Technology to meet this challenge so that its adverse affect on the country's water resources is minimized to the extent possible. The Committee also recommend that the Government explore application of water saving techniques, viz. rotational cropping system, drip and sprinkler irrigation and ground water recharge method in areas where traditional canal irrigation holds sway, so that the country's limited ground water resources do not go waste.

Reply of the Government

A Comprehensive Mission Document has been prepared under National Water Mission to meet the challenges of Climate Change on ground Water. Various goals and strategies have been identified in groundwater domain to achieve the Mission Goals. The Mission aims to place a comprehensive water database in the public domain, promote citizen and state action for water

conservation. In this regard Central Ground Water has already placed ground water level and ground water quality data in public domain. All Regional Directors of CGWB have been advised to contact the implementation agencies for Artificial Recharge schemes as well as State Government Department dealing with MGNREGA activities to sensitize the panchayats on water conservation measure of construction of recharge structures. Further, under the scheme of CGWB "Groundwater Management & Regulation" during XI Plan, 82 schemes covering Over-exploited areas have been sanctioned and fund released for implementation of artificial recharge schemes.

Ministry of Water Resources is implementing Farmers Participatory Action Research Programme (FPARP), under which improved irrigation methods like micro irrigation techniques (Sprinkler/ Drip irrigation), improvements of water use efficiency through suitable crop rotations, multiple cropping and water harvesting technologies (low cost micro rain water harvesting structure i.e. jalkund, storage tanks, percolation tanks, check dams, recharging wells etc.) are being demonstrated to the farmers to promote water saving techniques at the users end.

Recommendation (Para No. 4)

The Committee are concerned to note the sea water ingress into fresh water aquifers in coastal areas in Gujarat, Kerala, Tamil Nadu, Andhra Pradesh and Orissa is causing severe constraints in ground water development. The Committee observe that some models of artificial recharge and ground water management have been successfully employed outside India. For example, in Arizon a (U.S.A.), the problem of over-exploitation and falling water levels is addressed by law that mandates balancing abstraction with recharge, and Ground water Code (1980) has been enacted to meet this challenge. Similarly, Oman has adopted a successful strategy for sustainable ground water management which include obligatory registration of all wells, introduction of well permits, national well

inventory, well metering, improving irrigation techniques, public awareness campaigns for water conservation, etc. on demand side, while the supply side measures include large recharge dams. The Committee, therefore, recommend the Government to explore earnestly the viability of replicating such models of artificial recharge/ ground water management in India so that positive and tangible improvements are made on ground water front in the near future. The Committee also calls upon the Ministry to be on the look out always as to what measures have been initiated in this direction.

Reply of the Government

'Water' being a state subject, necessary measures for regulation of ground water development and promotion/ implementation of artificial recharge measures are to be undertaken by the State Governments. However, Central Ground Water Authority has made installation of meters on ground water abstraction structures mandatory for all the projects (Industrial/Infrastructure/Mining etc.) which are seeking NOC from CGWA for ground water abstraction. As per the guidelines of issuance of NOC by Central Ground Water Authority, ground water recharge is an essential component to be incorporated in to the project proposal before abstraction of additional ground water.

The Model Bill circulated by Government of India provides for regulation of ground water development as well as implementation of artificial recharge measures to address the problem of over-exploitation and falling water levels. The Bill has a provision for setting up of State Ground Water Authority, notification of areas for regulation, registration of wells, permits for new wells, issuing directions to various State Departments or individuals for construction of rain water harvesting structures, promotion of rain water harvesting and artificial recharge through public awareness campaigns etc.

Government of Gujarat has banned construction of new wells in Over-exploited and Critical category areas in the state. Government of Gujarat has also adopted an aggressive recharge strategy that has contributed significantly in stabilizing the ground water levels and even reversing the trend of ground

water depletion in Saurashtra region. The State Govt. has extended strong support to communities to expand this work in a participatory mode under the Sardar Patel SahakariJalSanchayYojana. Recharge structures constructed under the scheme include check dams, boribandhs, farm ponds, percolation tanks etc. Other State/ UT Governments need to replicate these measures.

Ministry of Drinking water and Sanitation has been encouraging the states which have coastal areas to adapt suitable groundwater recharge measures, and groundwater protection measures under sustainability component of NRDWP, in order to restrict the sea water ingression. Further Pilot projects on sustainability of Drinking water sources in ten different states in over exploited/critical blocks have been taken up by the Ministry. These pilot projects shall aim at development of models for supply side as well as demand side management including crop pattern management, groundwater management and self regulation by Panchyati raj institutions and village populace themselves. Based on their results, and experiences, these models will be up scaled to different water stressed regions in the country for implementation Drinking water sustainability plans.

Recommendation (Para No. 5)

The Committee note that the quality of ground water resources in the country is another crucial aspect that demands earnest consideration and stringent monitoring on a continual basis. The Central Ground Water Board (CGWB) monitors the quality and level of ground water through a network of 15,640 observation wells (Piezometers) in addition to the efforts of the State Ground Water Organizations. Empirical observations show the presence of fluoride in ground water in excess of maximum permissible limit of 1.5 mg/l as prescribed by the Bureau of Indian Standards (BIS) in as many as 227 districts of the country. The situation in respect of other harmful chemical constituents like arsenic, nitrate, iron and also inherent salinity (electrical conductance) which are collectively

termed geogenic contaminants is reportedly alarming in certain agricultural belts. The Committee note that there are 1,79,999 habitations in the country having water problems associated with fluoride, arsenic, iron, salinity and nitrate. Fluoride is present in 33,363, arsenic in 9,504, iron in 11,872, salinity in 32,689 and nitrate in 2,571 habitations of the country. This is over and above the hazard posed by anthropogenic/ man-made contaminants such as manganese, lead, chromium, cadmium, etc. in ground water in some parts of the country, resulting from mining activities or seepage from untreated industrial wastes. Further, the growing construction of septic tanks for want of sewer lines in the countryside has become another possible source of sub-soil contamination. The Committee, therefore, recommend that appropriate action be initiated to deal with the situation. The Committee are shocked to learn that some industries in the name of aquifer recharge, made structure for aquifer recharge, but actually ended up discharging the polluted water to the aquifer below the ground. They are also deeply dismayed that the Ministry of Environment and Forests have no schemes to tackle this problem of ground water contamination. The Committee, therefore, urge the Government to bring out a comprehensive national plan after due consultation with the concerned Ministries for containing the alarming trend of ground water contamination in the country so as to ensure supply of safe drinking water for the present as well as future generation. They would also like to be apprised of the action taken by the Government in this matter at the earliest. The Committee would also like to know the break-up of contaminated habitations indicating the nature of contamination state-wise.

Reply of the Government

The date quoted in Recommendation no.5 is from the IMIS of the Ministry of Drinking Water and Sanitation as on 01.04.2009. Updated data giving the state wise break up of habitations with contaminated groundwater is placed below.

As on 01.04.2011, out of 16,64,186 habitations in the country, as reported by the states on the IMIS of Ministry of Drinking water and sanitation, 7.27% i.e. 121046 are quality affected habitations, out of which i.e. 23107 (1.388%) are Fluoride affected, 5339 (0.320%) are Arsenic affected, 64220 (3.86%) are Iron affected, 24522 (1.47%) are salinity affected, and 3866 (0.232% are Motrate affected.

No of Quality Affected Habitations as on 01.04.2011

S.No.	**State**	**Contamination Wise Number of Habitations**					
		Total	**Fluoride**	**Arsenic**	**Iron**	**Salinity**	**Nitrate**
1	**2**	3	4	5	6	7	8
1.	Andaman & Nicobar	0	0	0	0	0	0
2	Andhra Pradesh	585	459	0	0	126	0
3	Arunachal Pradesh	0	0	0	0	0	0
4	Assam	18683	192	2089	16402	0	0
5	Bihar	18427	3338	1111	13978	0	0
6	Chandigarh	0	0	0	0	0	0
7	Chhattisgarh	7845	188	0	7534	123	0
8	Dadra & Nagar Haveli	0	0	0	0	0	0
9	Daman & Diu	0	0	0	0	0	0
10	Goa	0	0	0	0	0	0
11	Gujarat	323	111	0	0	65	147
12	Haryana						
13	Himachal Pradesh	0	0	0	0	0	0

14	Jammu & Kashmir	26	2	0	1	23	0
15	Jharkhand	808	93	5	709	0	1
16	Karnataka	7599	3114	42	1813	861	1769
17	Kerala	969	109	0	623	191	46
18	Lakshadweep	0	0	0	0	0	0
19	Madhya Pradesh	2917	2651	0	4	261	1
20	Maharashtra	2696	860	1	1	591	482
76221	Manipur	4	0	0	4	0	0
22	Meghalaya	102	0	0	102	0	0
23	Mizoram	0	0	0	0	0	0
24	Nagaland	166	0	0	166	0	0
25	Orissa	14810	475	0	13190	1117	28
26	Pondicherry	0	0	0	0	0	0
27	Punjab	55	22	0	2	31	0
28	Rajasthan	31698	10319	8	54	20211	1106
29	Sikkim	0	0	0	0	0	0
30	Tamil Nadu	509	3	0	428	75	3
31	Tripura	6196	0	0	6196	0	0
32	Uttar Pradesh	1038	204	331	53	449	1
33	Uttarakhand	14	1	0	11	0	2
34	West Bengal	5546	939	1752	2351	504	0
	Total	**121046**	**23107**	**5339**	**64220**	**24522**	**3866**

Under NRDWP (National Rural Drinking Water Program), administered by Ministry of Drinking Water and Sanitation, up to 65% of the funds allocated to the states are provided for vicarage of partially covered and quality affected habitations. Further, 20 % funds are allocated for sustainability measures which are also used by the state water supply agencies for insitu dilution of geogenic contamination by groundwater recharge.

Under the NRDWP, the National Rural Water Quality Monitoring and Surveillance is implemented through which states are to test water quality of all drinking water sources in rural areas, once a year fr Chemical contamination and twice a year for bacteriological contamination.

Under the program 693 District level laboratories, 840 Sub District level laboratories have been set up. Testing for 5 chemical contaminates i.e. Fluoride, Arsenic, Nitrate, Iron, and salinity and two types of Bacteriogical contaminations i. E-Coli and Total Colliform are carried out in these laboratories. During the financial year 2010-11, 856048 sources were tested with the testing of 1047792 samples for Chemical and bacteriological contamination. During the current year, 326437 sources have been tested with testing of 373159 samples, as reported by the states, till 13.10.2011.

Regarding the concern for sub soil water contamination due to toilets, Ministry of Drinking Water and Sanitation would like to submit that under TSC (Total Sanitation Campaign), on site sanitation practices or decentralized sanitation systems are promoted taking into consideration all aspects like cost of sewerage transport and treatment. TSC also has the flexibility of implementation with respect to a menu of technology options so as to ensure that effluents can be disposed of to the environment without causing any harm or used for useful purposes such as being used in agriculture.

The technologies promoted under TSC like use of high slope Pans, awareness about lesser consumption of water for flushing, and use of suitably designed seats to reduce the hydraulic load, lessen the chances of Groundwater pollution.

TSC also has a provision for upto 10% of the project funds earmarked for tackling Black and Grey water in a Rural Environment friendly manner.

CGWA had requested all the Regional Directors for inspection of Industries to whom NOCs have been provided by forming multi disciplinary groups. In eight Regions multi disciplinary groups have been formed.

Further, Under the directives of WQAA, reports on Ground Water and Surface Water pollution hotspots were prepared and uploaded to WQAA website for public use. Central Ground Water Board has prepared the report on Ground Water Quality of Shallow Aquifers identifying the pollution hotspots of ground water. Similarly, CWC has prepared surface water pollution hotspots for intensive monitoring of these sites. Apart from these, Working groups constituted by WQAA have prepared reports on various aspects of assessment and monitoring of pollution in surface water and ground water. Few of the important reports prepared by different organization under the directives of WQAA are:

- Contamination of Ground Water by Sewage
- Approach paper on Ground Water Quality issues in Andaman & Nicobar and Lakshadweep Islands
- Mitigation and Remedy of Ground Water Arsenic Menace in India

In addition, process is on to study and finalize reports on:

- Ground Water Quality Issues in Indian Himalayan Region
- Report on Baseline Ground Water Quality in NCT, Delhi

Apart from these, Ministry of Drinking Water and Sanitation is being pursued to link the village wise water quality data available with them with the WQAA web site. A mission document on National Groundwater Quality Mission (NGWQM) has been prepared and discussed in the 8th Meeting of WQAA. The mission document has been circulated to various government organizations for their

comments. WQAA has taken up matter with MoEF to empower it for notifying water quality standards for various uses. The decision of MoEF is awaited.

Recommendation (Para No. 6)

The Committee, therefore, strongly recommend that Government of India evolve expeditiously some innovative mechanism to keep tab on the efforts of State Governments as well as concerned Central Pollution Control agencies to ensure a harmonious and effective coordination among them in order to tackle the problem of water pollution and depletion lock, stock and barrel within a speedy time frame.

Reply of the Government

WQAA in its first meeting has recommended to constitute the WQRC at state level for preparation of state level management plans for improving the water quality. Again in its sixth meeting, WQRC's have been reconstituted to make them more effective. So far WQRC's have been reconstituted in states of Kerala, Mizoram, Maharashtra, Goa, Orissa, West Bengal, Sikkim, Arunachal Pradesh, H.P., Bihar, Chattishgarh and Haryana. Considering the importance of scientific planning in talking the issues of water quality, A National Level Workshop on Water Quality Management Plan (WQMP) by CPCB under the directives of WQAA was organized in December, 2008. The guidelines for preparation of State Level Water Quality Management Plans were framed and circulated to all the State governments for preparation of WQMP's in their respective states. Only on state (Goa) has submitted the Plan till date. All other states are being pursued for preparation of WQMP's so that the water quality issues.

Recommendation (Para No. 7)

The Committee note that a major factor causing pollution to the rivers in India is the discharge of untreated sewage in the rivers. However, reportedly the capacity to generate sewage treatment in the country is only 30 per cent and the remainder 70 per cent sewage is discharge untreated. The Committee note that the measures relating to reducing pollution of rivers/ water bodies in the country are being taken by the concerned State Governments with some support by the Ministry of Environment and Forests. Distressingly, the Central Sector Schemes like Jawaharlal Nehru National Urban Renewal Mission (JHNURM) and Urban Infrastructure Development Scheme for Small and Medium Towns as well as State Sector Schemes, run by municipalities have failed to deliver despite huge investments being made in them due to many problems including operational and maintenance issues, problems in power supply, etc. The Committee are of the considered view that environment is part of every Ministry and that pollution of rivers / water bodies also involves convergence of activities of several Ministries such as Water Resources, Environment and Forests, Agriculture and still others. The Committee, therefore, underline the need for greater interaction and sharing of knowledge and data among the Ministries of Water Resources, Agriculture, Environment and Forests and others in a continuous process. The Committee ardently hope and expect that the process of exchange of data on ground water resources and the coordination of activities among the Ministries concerned will continue and lead to tangible outcomes in redressing the problem of water pollution through their sustained, innovative and integrated efforts. The Committee also note that the Ministries of Environment and Forests and Water Resources have collectively set up a convergence mechanism in the form of an authority called 'Water Quality Assessment Authority' for which efforts are being made to get investments under UN Environment Programme and other agencies. The Committee hope that the efforts for concretizing 'Water Quality Assessment Authority' would bear fruits and results would

become visible on the water quality monitoring front in the near future. The Committee desire to have updated information as to the remedial action taken in the matter.

Reply of the Government

A "Water Quality Assessment Authority (WQAA)" has been established under Environmental Protection Act. The powers and functions of WQAA include the powers to issue necessary directions to various government/local bodies/non-governmental agencies to standardize water quality monitoring methods, ensure proper treatment of wastewater to restore the water quality of surface and ground waters, take up R&D activities related to water quality management and promote recycling and reuse of treated wastewater. The Authority has its secretariat in the Ministry of Water Resources.

Main Achievements of WOAA during last Two Years

- A Working Group has also been constituted by WQAA to deal with issues relating to Minimum Environemntal Flows in riverine systems. A sub-committee on has been constituted to analyse the recommendations on the minimum flow prepared by working group under the chairmanship of member (RM), CWC and also to interact with state governments on Minimum Environmental Flows.
- A Memorandum of Understanding (MoU) has been signed on 17th March, 2011 between WQAA, Govt. of India & WHO in the area of Water Quality Monitoring and Assessment activities.
- State Level Water Quality Review Committees (WQRC) have been re-constituted so far in 9 states as per information received in the Secretariat, WQAA. The remaining states are being persuaded to re-constitute WQRC.
- A number of Training programmes were conducted by CWC and CGWB under the guidance of WQAA on various aspects of Water Quality Assessment and Management.
- A one-day Workshop was organized by the CGWB under the aegis of the WQAA on Radon contamination

of groundwater and application of isotopes in groundwater studies on 26-03-2010 at Bangalore. Several scientists from various reputed institutes viz, BARC, NGRI, IISC, Bangalore and other institutions participated in the workshop. The deliberation of Workshop have been published in the form of a book and uploaded in WQAA web site.

- Financial assistance has been given to University of Delhi for organizing "International Workshop on Sustainability and Water Quality" on 17-20th January, 2011. This workshop was hosted by the Global Innovation Imperatives (GII) a collaborative venture between the American Chemical Society (ACS) and the Society of Chemical Industry (SCI).
- A project on preparation of status report on base line ground water quality of NCT, Delhi has been completed in collaboration with NEERI. This is one of the important projects to establish the status of ground water quality and is useful for establishment of future monitoring network in NCT, Delhi.
- Financial support has been given to Genentech Foundation, 811 Vishwadeep Tower, District Centre, Janakpuri, New Delhi for organizing 11th Global Environment Conference & Awards programme on 11, 12 &13th December, 2010. Recommendation of the workshop are placed on WQAA website.
- A project 'Study of Water Quality of the Existing Water Bodies of Meerut District on GIS Platform' has been initiated with full financial support from WQAA by Janhit Foundation, Meerut. Under this project water quality of 653 water bodies are being studied including pesticides.
- Financial assistance has been given to Green Institute of Research & Development and Delhi Technological University, Delhi towards organising of a National seminar on Sustainable and Innovative Solutions for Water Woes on 28.03.2011.
- A Task force for up gradation & accreditation of WQ laboratories constituted for processing of up gradation of labs.

- Special studies have been initiated by NIH, CGWB and CWC jointly to contamination of surface and ground water by Simbhaoli Sugar Mills and distilleries in U.P. Directives have been issued to CPCB for initiation of punitive action. CPCB issued necessary directives to Simbhaoli Sugar Mills for compliance.
- Action has been initiated to prepare reports on Baseline groundwater Quality in NCR region by WAPCOS under financial support by WQAA.
- A Working Group constituted under Member (SAM), CGWB to prepare 'Groundwater Quality Issues in Himalayan Regions' has submitted its Report.
- WQAA has taken up matter with MoEF to empower it for notifying water quality standards for various uses. The decision of MoEF is awaited.
- A base line survey on surface water quality in Ganga Basin is also being carried out by CWC under the guidance of WQAA.
- An independent web portal of the Authority having web address http://wqaa.gov.in/ has been created and the following reports /publications has been uploaded on the web portal
- Following reports /publications has been uploaded on the web portal

http: / wqaa.gov.in/

- Uniform Protocol on Water Quality Monitoring
- Report of Working Group to Advise WQAA on the Minimum Flows in the Rivers
- MoU signed between WQAA and World Health Organisation (WHO)
- List of Laboratories (Level I to Level-III) in CWC
- Status of Water Quality in India-2009 of CPCB, MoEF, Government of India.
- Basin wise Water Quality stations in Central Water Commission
- Water Quality parameters analysed by CWC

- River Water Quality Status
- Surface Water Quality status and remedial measures taken to improve the quality of Surface Water
- Contamination of Ground Water by Sewage
- Approach paper on Ground Water Quality issues in Andaman & Nicobar and Lakshadweep Islands
- Mitigation and Remedy of Ground Water Arsenic Menace in India
- Recommendation of 11th Annual Greentech Environment Global Conference 2010
- Guidelines for preparation of Water Quality Management Plan (WQMP) & Recommendations of CPCB workshop on WQMP
- Report on Groundwater Quality in Jai Bheem Nagar, Meerut, U.P.
- Workshop Volume on "Radon Contamination in Groundwater and application of Isotopes in Groundwater Studies"
- Ground Water Quality in Bathinda, Mansa & Patiala District of Punjab
- Water Quality Standards for various uses of Water
- Ground Water Quality in Shallow aquifers of India

Recommendation (Para No.8)

The Committee observe that in some parts of the country, especially eastern Uttar Pradesh polluted water from sugar factories and distilleries greatly affected the quality of ground water to the extent that it gives a reddish colour to the water. However, no case of punishment awarded to water polluters or environmental offenders in the country has been brought to the notice of the Committee. According to the Ministry, the main responsibility for implementation of the Environment (Protection) Act, 1986 is of the State Pollution Control Boards. Admittedly, the State Pollution Control Boards have not been able to perform their jobs for various reasons. Further, role of the Central Pollution Control Board is only to give technical advice and overall guidance to the State Pollution Control Boards. The representative of Ministry of Environment and Forests informed the Committee that their role in prevention of pollution by industries is confined only to the giving of environmental clearance for new industries, viz. before a new industry or an infrastructural project is established, environmental clearance is given by the Ministry of Environment and Forests. The Committee note that Section 10 of the Environment (Protection) Act, 1986 provides that any person Empowered by the Union Government shall have the right to entry and inspection, at all reasonable times with necessary assistance, to check infiltration of pollutants. Further, the Central Ground Water Authority (CGWA) has also advised all the States to get the polluting industries inspected through District Collectors on a regular basis and submit a report to them. The Committee are, therefore, optimistic that, given the sense of commitment and credibility of inspecting officers, there is good scope even under the present arrangement for the Union Government to curb industrial pollution. The Committee, therefore, recommends the Government to pull up its socks and attempt to get existing pollution control laws enforced strictly by concerned bodies such as Central Pollution Control Board, Central Ground Water Authority and by the State Governments.

They also desire the Government to tone up the functioning of these bodies by calling for biennial reports on the status of pollution levels of rivers and water bodies located all over the country, and also by insisting on regular inspection of factories, including tanneries located in high-pollution areas/ zones like Kanpur in Uttar Pradesh by the Central Pollution Control Board and District Collectors and submission of their findings to CGWA at least twice a year. The Committee would like to be informed of the steps taken by the Ministry in this regard.

Reply of the Government

CGWA had requested all the Regional Directors for inspection of industries to whom NOCs have been provided by forming multi disciplinary groups. Process has been initiated by the Regional Offices.

WQAA has taken up special studies involving NIH, CGWB and CWC jointly to study contamination of surface and ground water by Simbhaoli Sugar Mills and distilleries in U.P. Directives have been issued to CPCB for initiation of punitive action. CPCB issued directives to Simbhaoli Sugar Mills under Section 5 of Environment Protection Act, 1986 for compliance. As per the directives of WQAA, Central Ground Water Board has taken up special studies on ground water pollution around Breweries and Distilleries in all over India. A project 'Study of Water Quality of the Existing Water Bodies of Meerut District on GIS Platform' has been initiated with full financial support from WQAA by Janhit Foundation, Meerut. Under this project water quality of 653 water bodies of Meerut district are being studied including pesticides. Directives have been issued to Central Ground Water Board for preparation of detailed reports on contamination of ground water in 88 Industrial clusters of India.

Comments of the Committee

(Please *see* Para No. 10 of Chapter-I of the Report)

Recommendation (Para No.9)

The Committee note that the Government has taken up a new Plan Scheme called Development of Water Resources Information System (WRIS) in the Eleventh Plan for developing information system on water resources at the national level. The first phase of WRIS was inaugurated by the Ministry of Water Resources on 7 December 2010 and the project is scheduled to be completed by December 2012. The Committee desire the WRIS be completed by the scheduled date positively. The Committee further note that the CGWB has developed a 'Web-enabled Ground Water Information System (WEGWIS) in collaboration with NIC, which aims at providing a unified internet-based access to water related information (spatial/ non spatial) for policy planning and management. The Committee recognize the potential value of WEGWIS for effective management of our precious ground water resources, and desire the Ministry to get the data and information on this system updated regularly so that the policy-makers, decision-makers, and the public at large benefit from this advanced modern web-enabled information system.

Reply of the Government

Web enabled Ground Water Information System (GWIS) has been developed by CGWB in collaboration with National Informatics Centre (NIC) to provide users web based access to groundwater related information for policy planning and management. Various thematic layers related to ground water have also been placed at the website. Ground water level and water quality data for last five years have been posted at the website so that any user may access the data. The data is being updated regularly at the website.

Water Quality Division, Ministry of Water Resources is providing secretariat services to Water Quality Assessment Authority. For the dissemination of Information and for the creation of a database for direct utilisation by the end user/public a MIS based Website has been designed. Some of the salient features are, Compliance with Government "Guidelines for Indian Government Websites", Accessible Website Structure via Internet Explorer, Mozila Firefox and other browser with support to Mobile Phones and will be Disabled friendly, Website designing with a better User Interface, Dynamic Content Management System Feature, Bilingual Management Module Development (Hindi & English), Water Quality Assessment Information Management Module, Reports/Publication Management Module with Content Integration.

Comments of the Committee

(Please *see* Para No. 13 of Chapter-I of the Report)

Recommendation (Para No.10)

The Committee observe that the Government has put into use satellite data generated by ISRO/NRSA for various studies related to ground water, including identification of areas suitable for ground water development and artificial recharge and that the findings of various studies are being shared with user agencies/stakeholders on a regular basis. The remote sensing data are reportedly being used in these works related to ground water: (i) preparing hydrogeomorphological maps whereby geomorphic units are delineated and their hydrogeological characteristics are studied and ground water potentiality and development prospects are assessed, (ii) demarcating lineaments in hard work area, which include identification of focused area for geophysical and detailed hydrogeological study and to pinpoint suitable sites for drilling. (iii) delineation of water logged areas in surface water based canal command areas taken up for conjunctive use (surface and ground water) studies, (iv) locating suitable areas for artificial recharge sites and (v) study of vulnerable areas of geogenic or arsenic contamination. The Committee recommend that the Ministry evolve an institutional mechanism to channelize the regular flow of remote sensing data to user agencies/stakeholders and apprise the Committee of the feedback received from user agencies/stakeholders within six months of the presentation of the report.

Reply of the Government

Ministry of Drinking water Supply and Sanitation has been concerned over the Groundwater conditions in the country, as most of the Rural Water supply schemes in a large part of the country are groundwater based. The monitoring of groundwater as well as advanced information on various groundwater components has become important for sustainability of these schemes as well. In order to support the state departments involved in Rural Drinking waters supply, by way of hydro-scientific

information and groundwater data management, hydro-geomorphological maps for various regions are being prepared by National Remote Sensing Centre Hyderabad, and are being provided by Ministry of Drinking water and Sanitation to State departments/boards dealing with Rural Drinking Water Supply for better management of Drinking water sources, and locating new sources with the help of these HGM maps.

These maps shall guide the state departments to identify targets for groundwater abstraction, groundwater recharge, and rainwater harvesting. Source sustainability, evaluation of existing sources and development of new/alternative sources as well as multi source systems shall also be facilitated by these maps.

Till Oct 2011 out of 4839 maps required for the country 3928 have been prepared and handed over to the states.

GIS application is very useful in identification of point source of pollutions from industries, urban polluted areas and non-point pollution sources like pesticides/fertilizers pollution from intense agricultural activity areas, selections of sites for Sewage disposal for pollution abatement in polluted rivers, mapping of potential hotspots and environmental hazards. Land degradation maps can also be prepared using remote sensing data where saline ground water areas and poor water quality areas may be demarcated. Apart from this, remote sensing is also very useful in demarcation of stretches where water is highly polluted in different rivers of the country. National Remote Sensing Centre, Hyderabad is being pursued to take up projects for assessment of water quality and mapping of pollution hotspots using remote sensing data.

Recommendation (Para No.11)

The Committee note that a high-level Task Force under the chairmanship of Member, CWC has been appointed to study the entire hydrological pattern of the country, and its recommendations

are to be submitted shortly. The Committee would like to be apprised of the main highlights of the report of this Task Force as and when it is received by the Ministry.

Reply of the Government

A working Group for 'Assessment of Surplus monsoon runoff and recharge potential of aquifers in India', was constituted having Shri A.K. Ganju, Member (CWC), Dr. S.C. Dhiman, Member(SML), CGWB and representatives from CW&PRS, NIH, MoEF, IMD, GSI and Inland Waterways Authority of India as its members. Summary of the report is as below:-

Detailed analysis of data of river flows at the terminal sites of major rivers draining into the sea indicates that, the total annual runoff being lost to the sea is about 1183.48 BCM of which the monsoon runoff is 984.60 BCM which is about 83.2% of total.

After deducting the committee flows and storages totaling to about 172 BCM, the balance surplus annual runoff is about 1011 BCM, out of which 776.40 BCM is the contribution from the Ganga-Brahamaputra and Meghna Basin. Remaining 234.60 BCM of flow is going to the sea from other basins.

The recharge potential of aquifers has been worked out based on the post monsoon water level. A total of about 25.95 lakh sq.km of area is available in different parts of the country where aquifer recharge can be taken up depending upon the availability of source water in timeand space. The volume of water required to fill the unsaturated zone of aquifer up to 3 meter below ground level works out to be about 1240 BCM.

Pilot study carried out for Brahmani basis indicates that about 17 BCM of the annual runoff is flowing in to the sea as observed at the terminal gauging point.

Recharging the de-saturated aquifer upto 3 meters below ground level will require only 0.3 BCM of water for sub-surface storage. This clearly indicates that there is need of detailed study at watershed level to assess the availability of surplus water as well as recharge potential of underlying aquifers.

The availability of monsoon runoff is however, not uniform in all the basins, resulting in surplus and deficit of monsoon runoff vis-avis the water required to recharge the vadose zone. There is ample scope for filling the existing water bodies and creation of small surface storage to harness the surplus runoff.

The sub-surface storages created would be free from environmental hazards and inter-state controversies, since the surface structures created for recharge would be of small dimensions.

The monsoon runoff conserved in sub-surface reservoir may improve the non monsoon flows in the rivers and enhance the base flows, resulting in improvement of eco-system of the riverine tract, and ensure sustainability of river based lift irrigation schemes.

In the coastal tract, the increased sub-surface fresh water outflow would ameliorate the situation, arising out of sea water ingress. The sea water/fresh water interface would be displaced sea ward.

This report presents a conceptual framework for utilization of surplus monsoon runoff in the country, and delineates priority areas to be taken up for artificial recharge at the first stage. This is to be followed by preparation of experimental schemes or pilot projects in select water sheds in the country, which will lead to preparation of operational schemes.

Recommendation (Para No.12)

The Committee also note that geophysical studies have been conducted by CGWB in several parts of the States of the country to support and supplement ground water management studies, ground water exploration and other related works. Upto 31 March, 2009 geophysical logging of 86 boreholes had been conducted by the CGWB in the States of Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal having consolidated

geological formations. The Committee observe such geophysical studies provide vital inputs for ground water management studies, selection of sites for drilling of bore/ tube wells, identification of areas suitable for construction of artificial recharge structure and for demarcation of areas having saline ground water, either inherent, or due to saline water ingress. Noting the significance of such studies for monitoring, management, utilization and preservation of ground water in the country, the Committee earnestly urge the Ministry to extend geophysical studies to the remaining States wherever possibilities exist. The Committee would like to be apprised of the follow-up action taken by the Ministry in the matter in course of time.

Reply of the Government

Geophysical logging studies in 100 and 90 boreholes were conducted during 2009-10 and 2010-11 respectively in the States of Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Jammu & Kashmir, Karnataka, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. Geophysical is need based and is associated with Ground Water Exploration Programme in the country.

Recommendation (Para No.13)

The Committee recognize artificial recharge to ground water as a key method for conservation and management of ground water. This technique is being employed (i) to enhance sustainable yield in areas affected by depleted aquifer due to over-exploitation; (ii) for conservation and storage of excess surface water for future; and (iii) to improve the quality of existing ground water through dilution. The Committee note that the CGWB is carrying out demonstrative artificial recharge studies in high water demand areas with over exploited/ critical storage of ground water development, and that demonstrative projects on artificial recharge to ground water have been implemented by the CGWB

during 2006-09 under the ongoing Central Sector Scheme called 'Ground Water Management & Regulation' in 8 identified areas of the States of Andhra Pradesh, Karnataka, Madhya Pradesh and Tamil Nadu. As of March, 2010 out of 200 artificial recharge structures approved for implementation under the scheme at a cost of Rs. 5.607 crores, 194 structures had been completed. The remaining 6 structures in the State of Karnataka are reportedly in progress. The Committee also note that the CGWB has set a target of 75 demonstrative artificial recharge projects for implementation apart from the above States at a total cost of Rs. 100 crore under the same scheme during the 11th Plan, and for which 14 projects were said to have been sanctioned for 8 States. The Committee feel that the Government should extend the Scheme to other areas facing critical ground water levels, such as Bundelkhand region of Uttar Pradesh and Madhya Pradesh. The Committee also expect the CGWB to meet its goal for completion of 75 demonstrative artificial recharge projects during the 11th Plan. The Committee would like to be informed of the progress made in this matter at the earliest. Also, the status of six projects already in progress be intimated to the Committee.

Reply of the Government

The scheme has been extended to other States facing critical ground water levels including the Bundelkhand region of Uttar Pradesh. A scheme for "Artificial Recharge to Ground Water & Water Conservation in Mauranipur Block, District Jhansi" has been taken up in the Bundelkhand region for construction of 32 check dams. Regarding the achievement of the target of 75 Demonstrative Artificial Recharge Projects, this is to submit that a total of 82 demonstrative Artificial Recharge Projects for construction of 1475 recharge structures are being implemented in 20 states. More projects are being received from various states & at present about 10 projects are under scrutiny. The remaining six recharge structures, which were under progress in Karnataka, have been completed.

Recommendation (Para No.14)

The Committee note that the Government has launched a State Sector Scheme of artificial recharge of ground water through dug wells in over exploited, critical and semi critical assessment units of 7 States viz. Andhra Pradesh, Maharashtra, Karnataka, Rajasthan, Tamil Nadu, Gujarat and Madhya Pradesh during the 11th Plan. The scheme was to be implemented in 1,180 blocks of these States in a time span of three years from 2007-2010 with the objective to facilitate improvement in ground water situation in the affected areas, increase the sustainability of wells during lean period, improve quality of ground water and community involvement in water resources management in the affected areas. The average cost of recharge structure per well was Rs. 4,000 for a total of 4.45 million dug wells and Rs. 1,536.75 crore were sanctioned for the scheme by the Ministry of Finance. The Committee learned from the Ministry that physical and financial status of this State Sector Scheme is being monitored on monthly basis in terms of number of beneficiaries identified, opening of bank account, release of subsidy in their bank accounts and construction of dug well recharge structure by the beneficiaries. They also note that a total of 7,72,249 beneficiaries were issued subsidy and an amount of Rs. 303.39 crore had been released against which Rs. 274.13 crore have been utilized in respect of the Scheme upto 31.05.2011. The Committee note that this scheme has been implemented mainly in areas predominantly underlain by consolidated rocks viz. Andhra Pradesh, Maharashtra, Karnataka, Rajasthan, Tamil Nadu, Gujarat and Madhya Pradesh since about 80 per cent of these ground water stressed areas (over-exploited, critical and semi-critical) are located in these States where rapid decline of ground water levels have been noticed on long-term basis. The Committee recommend financial as well as physical targets achieved under the Scheme.

Reply of the Government

The dug well recharge scheme was implemented during the period 2007-2010. As per information received from NABARD, an amount of Rs. 303.39 crore including subsidy of Rs. 283.519 crore to 7,74,261 beneficiaries was released in six States excluding Andhra Pradesh. As on August, 2011, subsidy of Rs. 260.921 crore has been utilized by 7,13,042 beneficiaries. A total of 1,07,249 structures have been completed so far. The scheme could not be implemented in Andhra Pradesh as the Nodal agency designated by the State Government had expressed its inability to implement the scheme.

Recommendation (Para No.15)

The Committee note that apart from artificial recharge to ground water, rain water harvesting is another great potential method of augmentation of ground water resources. This technique involves collection of rainfall either for direct use for drinking, domestic, irrigation or diversion to underground aquifers through suitable techniques of artificial recharge for augmenting the ground water reservoir. The Committee also note that the Central Ground Water Authority (CGWA) has directed all States having 'over-exploited' areas to promote / adopt rain water harvesting, and that as a result of which 18 States and 4 Union Territories (UTs) have amended building by-laws for making rain water harvesting mandatory. Similarly, the Committee are also pleased to note that the CGWA directions for adoption of roof top water harvesting system to Group Housing Societies, Institutes, Hotels, Industries, Farm Houses, etc. in the notified areas of Delhi, Faridabad, Gurgaon, Ghaziabad and other areas of NCT Delhi having water table 8 meters below ground surface, has received encouraging responses, and that the Delhi Jal Board in NCT Delhi is providing assistance of 50 per cent of the cost uptoRs. 1 lakh to Group Housing Societies, RWAs, Charitable Institutions, etc. to motivate them to opt for rain water harvesting. It is noted that financial assistance has been approved in 206 cases and that a total of 299

training programmes have so far been conducted for capacity building of stakeholders in designing of rain water harvesting structures to augment ground water in different terrains and hydrological conditions. During their study visit to the Central Leather Research Institute (CLRI), Chennai in June, 2011, the Committee were informed that the CLRI has become self-sufficient in water supply after they resorted to rain water harvesting. The Committee believe that while such promotional efforts for rain water harvesting by the Ministry and cognate agencies are indeed laudable, more emphasis is needed to enforce mandatory rain water harvesting laws in those 18 States and 4 UTs which have already opted for them. The remainder States may also be persuaded to take similar measures. The Committee are also of the view that the Government should explore the possibility of making rain water harvesting mandatory in all the buildings of the Government – Central as well the States, wherein their Ministries/ Departments, etc. are located. They further feel that if more attractive incentives are offered for rain water harvesting, achievement of the desired objectives may not be far off.

Reply of the Government

For promoting Rain Water Harvesting/adoption of Artificial Recharge to Ground Water in the country (except in the water logged areas), Central Ground Water Authority has issued directions for implementation of rain water harvesting and ground water recharge for arresting rainfall runoff occurring along all National Highways, State Highways, and other major roads by Central Road Research Institute, National Highways Authority of India, Central Public Works Department, State Public Works Departments; along rail tracks and other establishments of Indian Railways, in the Stadia by Sports Authority of India, Board of Control for Cricket in India, Departments of sports and Youth Affairs and in the Airports by Airport Authority of India, Ministry of Civil Aviation.The Authority has also directed the Chief Secretaries/ Administrators of all the States/ Union Territories and Ministry of Urban

Development to take necessary action to adopt rain water harvesting/ artificial recharge on all the Government buildings. Ministry of Water Resources have also instituted Ground Water Augmentation Awards & National Water Award which are aimed at encouraging Non-Governmental Organizations (NGOs)/ Gram Panchayats/ Urban Local Bodies/ Institutions/ Corporate Sector and Individuals for adopting innovative practices of ground water augmentation by rainwater harvesting and artificial recharge, promoting water use efficiency, recycling & re-use of water and creating awareness through people's participation. In total, there are 20 Ground Water Augmentation Awards for six categories consisting of Rs. 1 lakh and a plaque with citation and one National Water Award consisting of a cash award of Rs. 10 lakh and a plaque with citation.

Comments of the Committee

(Please *see* Para No. 16 of Chapter-I of the Report)

Recommendation (Para No.16)

The Committee note that under Section 5 of the Environment (Protection) Act, 1986, the CGWA has been given powers to give directions, and that courts of local jurisdiction are empowered to take cognizance of offences of non-compliance of such directions under section 15 of the Act. It is, therefore, imperative that directions issued by CGWA to local bodies like Delhi Development Authority (DDA), Municipal Corporation of Delhi (MCD), New Delhi Municipal Council (NDMC), Resident Welfare Associations (RWAs), etc. are complied with and all cases of non- compliance dealt with in accordance with the law. The Committee, therefore, recommend that the Ministry take appropriate and prompt steps to ensure better compliance to directions issued by the CGWA in the matter.

Reply of the Government

The ground water regulation in NCT, Delhi is being done by Delhi Government as per Gazette Notification dated 18.05.2010 issued by the Office of Lieutenant Governor. Representative of CGWB is a member in the Advisory Committee.

The Chief Secretary, Government of Delhi has been requested to issue direction to the Chairmen of all the District Advisory Committees to promote ground water recharge measures on large scale to control further decline of water levels.

Recommendation (Para No.17)

The Committee observe that increase in water use efficiency in agriculture can greatly reduce withdrawal of ground water and thus help preventing decline in ground water table. In this behalf, the Committee note that the Ministry has sanctioned 5,000 demonstrations under Farmers Participatory Action Research Programme (FPARP) through 60 identified institutes in 25 States/UTs across the country at a cost of Rs. 24.4685 crore in the year 2007-08. As resorted, 91.8 per cent of 5,000 demonstrations had been completed by the end of Kharif 2009, and 398 demonstrations were either completed or nearing completion during Rabi 2009-10, and evaluation of the programme has been initiated by external agencies for assessing the final outcome of the programme. The Committee, therefore, urge the Ministry to make more vigorous efforts to ensure completion of the remaining demonstrations under FPARP and also seek to complete evaluation process of the programme by external agencies, which is in place presently. They would like to be apprised of concrete action taken by the Ministry in the matter.

Reply of the Government

A total of 4912 demonstration under Farmers Participatory Action Research Programme have been completed in the first phase with an expenditure of Rs 17.64 Crore. The evaluation process of the FPARP 1st phase programme is under progress by the identified external agency.

The Programme has been extended by launching the 2nd phase of FPARP through involvement of 31 institutes under which 2921 demonstrations have been approved and an amount of Rs 14.31 Crore has been sanctioned and released to the implementing institutes in the year 2011. A total of 153 demonstrations were taken up during the Rabi and summer seasons. Around 668 demos are being taken up during the Kharif 2011 season. The concurrent evaluation of the 2nd phase has also been takenup by the agency and inception report has been submitted by the agency.

Recommendation (Para No.18)

The Committee were apprised that several works related to water conservation have been carried out under MNREG Scheme, viz. water conservation and water harvesting, drought proofing including forestation and tree plantation, irrigation canals including micro and minor irrigation works, provision of irrigation facility to lands belonging to SCs/STs or to beneficiaries of land reforms or of Indira Awas Yojana of the Government of India. The Committee further note the Ministry's reply that water conservation works undertaken in the MNREGS by construction of water harvesting and artificial recharge structures like check dams, village ponds, minor irrigation works, renovation of traditional water conservation structures, etc. are beneficial for recharging and conserving the ground water as per local requirements and that the augmentation of recharged water will lead to stabilization/ rising of water levels in the area. The Committee are of the unanimous but considered view that focused attention be given by Ministry to works related to water conservation under MNREGS so that water conservation, including ground water conservation and management becomes a collective movement

of the people all over the country. The Government also needs to review periodically the impact of such works on the level of ground water, its conservation availability and the quality of water. The Committee also desire the Ministry to explore the possibility of adopting models of ground water management already practiced abroad, namely mandatory registration of wells, introduction of well permits, national well inventory, well metering, etc. in the works taken up under MNREG Scheme to promote their use among the people at large.

Reply of the Government

The model bill circulated by the Government has a provision for mandatory registration of wells and issue of permits. Central Ground Water Authority examines proposals for issuing NOC for withdrawal of ground water for new/ expansion industries/ projects falling in over-exploited/ critical/ semi-critical. As per guidelines framed for the purpose, industries/ projects to whom NOC is issued have to install meters and monitor quantum of ground water withdrawal.

All Regional Directors of CGWB have been advised to contact the implementation agencies for Artificial Recharge schemes as well as State Government Department dealing with MGNREGA activities to sensitize the panchayats on water conservation measure of construction of recharge structures.

Recommendation (Para No.19)

The Committee note that the Government launched in the year 2005 a pilot scheme called “national Project for Repair, Renovation & Restoration (RRR) of Water Bodies directly linked to Agriculture” with a estimated cost of Rs. 300 crore to be shared by the Centre and the States in ration of 3:1. The objectives of the scheme were to restore and augment storage capacities of water bodies, and to recover and extend their lost irrigation potential. The Ministry informed the Committee that a total of 1,098 schemes with an estimated amount of Rs. 299.91 crore have been approved, works of 1,054

water bodies completed, works in 13 water bodies have been dropped while work was in progress in 31 water bodies in the State of Maharashtra due to late approval. The evaluation reports received from Water Technology Centre, Bhubaneswar, Water and Land Management and Research Institute, Hyderabad and Centre for Water Resources Development and Management, Kozhikode, Kerala reportedly indicated considerable increase in storage capacities of water bodies as well as increase in agricultural productivity in their command areas. The Committee desire the Ministry to intimate the reasons for dropping f the works in 13 water bodies and the status of 31 ongoing works in Maharashtra. Besides, the Committee are given to understand that another programme for rejuvenation of water bodies was launched by the Government in 2009 with t he assistance of World Bank and that projects have been taken up in Andhra Pradesh, Karnataka, Tamil Nadu and Orissa, with the first instalment being released to the States of Karnataka and Orissa. The Committee earnestly desire the Ministry to extend this World Bank aided programme for repair, renovation and restoration of water bodies to other remaining States particularly perennial drought prone States such as Rajasthan, Gujarat and Madhya Pradesh to increase wider coverage of the programme.

Reply of the Government

Pilot scheme launched in 2005 with an objective to increase the storage capacity and irrigation potential of water bodies,. Central share of Rs.197.30crore released under the scheme for taking up 1098 water bodies in 26 districts of 15 states. Works completed in 1085waterbodies including 31 water bodies in Maharashtra. Works in 13 water bodies were dropped due to administrative reasons.

Under the scheme of RRR of water bodies with external assistance World Bank Loan Agreement has been signed with Tamil Nadu for Rs. 2182 crore to restore 5763 water bodies having a CCA of 4 lakh hectares, with Andhra Pradesh for Rs.835 crore for restoration 3000 water bodies with a CCA of 2.5 lakh hectares, with Karnataka for Rs.268.78 crore for restoration 1224 water bodies with CCA of 0.52

lakh and with Orissa for Rs. 448 crore for restoration of 900 water bodies having CCA of 1.2 lakh hectares.

For obtaining World bank assistance the State Governments are required to pose their project proposal to the World Bank through Department of Economic Affairs as per stipulated procedure. The State Government were requested to intimate their expression of interest under the scheme of RRR of water bodies with External assistance. While the State Government of Odhisa, Karnataka, Andhra Pradesh and Tamil Nadu have undertaken activities under RRR scheme with External assistance, there was little response from other states for the scheme with external assistance and instead the state Government of Rajasthan, Madhya Pradesh etc expressed their interest for funding under the scheme with domestic support. Accordingly, the proposal received from these State were processed for release under the scheme of RRR of water bodies with domestic support.

Under the scheme of RRR of Water bodies with Domestic Support a total of Rs.653.43 crore has since been released to Odisha, Karnataka, Andhra Pradesh, Bihar, Uttar Pradesh (Bundelkhand), Madhya Pradesh (Bundelkhand),Madhya Pradesh (Bundelkhand), Meghalaya (Umaim Lake), Maharashtra, Gujarat, Chhattisgarh and Haryana.

Recommendation (Para No.20)

The Committee regret to learn from MoE&F that the system of prosecution has achieved little success as far as criminal prosecution of environmental offenders is concerned, and further that nobody has been given imprisonment till date on this account. According to the MoE&F, it is constitution National Environment Protection Authority in which they are planning to insert a provision for economic penalty against polluters of environment including rivers/water bodies have been shielded behind the protection cover of the lengthy and time consuming judicial process, the Committee recommend the Government

to expedite the formation National Environment Protection Authority which will hopefully impose penalty on offending industrialist, polluters etc. The Committee would like to be informed of the progress made in this regard.

Reply of the Government

Ministry of Environment & Forest has not yet sent Action Taken Report in respect of above recommendation. ATR shall be sent immediately after receipt of the same from Ministry of Environment & Forest

Recommendation (Para No.21)

The Committee are pleased to note that the Government has in 2007 instituted two annual awards, namely 'Ground Water Augmentation Awards' (Bhoomijal Samvardhan Puruskar) and 'National Water Award' carrying cash awards of Rs. 1 lakh and Rs. 10 lakh respectively to encourage the NGOs/Gram Panchayats/Urban Local Bodies (for population upto 1 lakh)/ institutions/ Corporate Sector and individuals for adopting innovative practices of ground water augmentation by rain water harvesting and creating awareness in the target areas. Besides the Ministry's proposal to use IT Kiosks installed in big village to propagate information on ground water in local language with pictorial depiction and also plans to make available the expertise of scientists deployed in districts for teaming up with district magistrates and panchayats in its drive to have effective water conservation, development, augmentation and exploitation, the Committee also note that the Ministry plans to deal with the problem of shortage of scientific manpower at district levels. The Committee hope that the efforts of the Ministry to encourage the local bodies etc. and to create awareness among the target areas will fructify soon. The Committee would like to be apprised of the positive outcome of the steps initiated by the CGWB for mass awareness campaigns throughout the country by involving Central/

State/NGOs, Voluntary Organizations/ RWAs, educational institutions, industries and individuals as also the impact of all other connected efforts.

Reply of the Government

Mass Awareness and Training Programmes conducted and other efforts made by Central Ground water Board have received positive response from the Central/State Government Organisations, NGOs/ Voluntary Organisations, RWAs, educational institutions etc. Many State Governments/ NGOs/ VOs/ RWAs have undertaken actions for adoption of rainwater harvesting and artificial recharge.

Comments of the Committee

(Please *see* Para No. 19 of Chapter-I of the Report)

Recommendation (Para No.22)

The Committee would urge the Government to initiate steps in the right earnest to strive to build national consensus to bring water either in the Union List or in the Concurrent List after due consultation with the State government so that a comprehensive national plan of action is evolved for water conservation, development, exploitation and equitable distribution in the larger and long term national interest. The Committee recommend that the draft proposal in this regard may be initiated by the Ministry expeditiously.

Reply of the Government

The Cabinet Secretariat constituted a Committee on Allocation of Natural Resources (CANR) under the chairmanship of Shri Ashok Chawla vide order dated 31st January 2011. The Committee submitted its report on 31st May 2011. The committee inter-alia recommended as follows:-

"The Committee sees an urgent need to have a comprehensive national legislation on water. This can be either done through bringing water under the Concurrent List and then farming the appropriate legislation; or by obtaining consensus from a majority of the States that such a "framework law" is necessary and desirable as a Union enactment. The legal options in this regard need to be examined by the Ministry of Water Resources. The national legislation should clarify a common position on a number of issues, e.g., need to consider all water resources as conjunctive, unified whole; water as a common property resource; principles of allocations ad pricing and so on. The framework legislation should recognize that pollution also leads to conjunctive use of water, which makes the resources unusable for other purposes".

The recommendations of CANR have been referred to a Group of Ministers.

It is further stated that Ministry of Water Resources has established National Water Mission Secretariat to achieve goals & Strategies identified under National Water Mission.

Two of the five goals of the National Water Mission are:

iii) Promotion of citizen and State actions for water conservation, augmentation and preservation.

iv) Focused attention to vulnerable areas including over exploited area.

The strategies for achieving the above Goals as stipulated in the Mission Document of National Water Mission are as follows:

Goal: Promotion of citizen and State actions for water conservation, augmentation and preservation

- Empowerment and involvement of Panchyati Raj Institutions, urban local bodies, Water Users' Association and primary stake holders in management of water resources with focus on water conservation, augmentation and preservation

- Promote participatory irrigation management
- Sensitization of elected representatives of over-exploited areas on dimensions of the problems and to orient investment under MNREGP toward water conservation.
- Provide incentives for water neutral and water positive technologies.
- Encourage participation of NGOs in various activities relatd to water resources management, particularly in planning, capacity building and mass awareness.
- Involve and encourage corporate sector/industries to take up, support and promoted water conservation, augmentation and preservation within the industry and as part as corporate social responsibility.

Goal: Focused attention to vulnerable areas including over-exploited areas

- Expeditious implementation of water resources projects particularly the multipurpose projects with carry over storages benefitting drought prone and rain deficit areas.
- Promotion of traditional system of water conservation.
- Physical sustainability of groundwater resources.
- Intensive programme for ground water recharge in over-0exploited, critical and semi-critical areas.
- Conservation and preservation of wetland.
- Intensive programme for addressing the quality aspects of drinking water
- Systematic approach for coping with floods.

Comments of the Committee

(Please *see* Para No. 22 of Chapter-I of the Report)

CHAPTER III

RECOMMENDATIONS/OBSERVATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE GOVERNMENT'S REPLIES

- NIL -

CHAPTER IV

RECOMMENDATIONS/OBSERVATIONS IN RESPECT OF WHICH REPLIES OF THE GOVERNMENT HAVE NOT BEEN ACCEPTED BY THE COMMITTEE

Recommendation (Para No. 23)

Keeping in view the apprehension of diversion of waters of some international rivers by the riparian country, the Committee urge the Government to furnish complete date of the major river systems of the country, indicating the volume of water in each river system at the point where the river enters India and the volume at the point where it falls into the sea or the flows into the territory of adjoining country, and also the volume of water diverted or utilized for irrigation purposes within the country, river-system wise for the last ten years.

Reply of the Government

On Brahmaputra and its tributaries originating in China viz. Siang, Subansiri and Lohit, data collection near indo-Tibet brooder has started in late2006. As such, average estimate of volume ofwater at the points where these streams enter India have been estimated on the basis of the rainfall-runoff data being collected at various project sites in Arunachal Pradesh using hydrological methods as follows:-

Name of River	Monsoon	Non Monsoon	Total
Siang	56.12	21.98	78.10 BCM

Subansiri	12.85	4.82	17.67BCM
Lohit	20.77	10.29	31.06BCM

The volume of water at the point where river Brahmaputra enters into Bangaladesh has been estimated on the basis of data observation at Dhubri as 629.05BCM in monsoon and 188.03BCMin Non-monsoon). An Index map indicating the above information is enclosed.

Comments of the Committee

(Please *see* Para No.25 of Chapter-I of the Report)

CHAPTER V

RECOMMENDATIONS/OBSERVATIONS IN RESPECT OF WHICH FINAL REPLIES OF THE GOVERNMENT ARE STILL AWAITED

- NIL -

NEW DELHI;
March, 2012
Phalguna, 1933 (Saka)

DIP GOGOI
Chairman,
Standing Committee on Water Resources

APPENDIX – I

MINUTES OF THE SEVENTH SITTING OF THE STANDING COMMITTEE ON WATER RESOURCES (2011-12) HELD ON WEDNESDAY, 29 FEBRUARY 2012

The Committee sat from 1130 hours to 1220 hours in Committee Room No.53, First Floor, Parliament House, New Delhi.

PRESENT

Shri Dip Gogoi – Chairman

MEMBERS

LOK SABHA

2. Shri Ghanshyam Anuragi
3. Shri Pulin Bihari Baske
4. Shri Badri Ram Jakhar
5. Shri Haribhau Jawale
6. Shri Virender Kashyap
7. Shri Mahendrasinh P. Chauhan.
8. Shri Mangani Lal Mandal
9. Shri Nityananda Pradhan
10. Shri K.R.G. Reddy
11. Shri S.P.Y. Reddy
12. Shri Arjun Roy
13. Smt. Annu Tandon
14. Shri Bhisma Shankar alias Kushal Tiwari
15. Dr. P. Venugopal
16. Shri Sajjan Singh Verma

RAJYA SABHA

17. Shri Balwinder Singh Bhunder
18. Shri Anil Madhav Dave
19. Shri Kumar Deepak Das
20. Dr. Ashok S. Ganguly
21. Dr. Gyan Prakash Pilania
22. Smt. Bimla Kashyap Sood

SECRETARIAT

1.	Shri Devender Singh	-	Joint Secretary
2.	Shri B.S. Dahiya	-	Director
3.	Smt. Rita Jailkhani	-	Additional Director

At the outset, the Chairman welcomed the Members to the sitting of the Committee convened for consideration and adoption of draft Report on the subject "Consideration and adoption of draft Report on Action Taken by the Government on the observations/recommendations contained in the Tenth Report (15th Lok Sabha) on "Augmentation of Depleted Ground Water Level, Sustainable Development, Conservation, Management, Use of Ground Water and Prevention of Water Pollution."

2. Thereafter, the Committee took up the draft Report for consideration. After some discussion, the Committee adopted the Report with minor amendments/modifications as suggested by the Members. The Members also deliberated on several issues including the need for time-bound completion of projects under the scheme of Inter-Linking of Rivers, need to popularize modern system of irrigation like drip and sprinkler system, and monitoring the flow volume of major river systems in the country with the help of satellite data. They decided to hold another sitting of the Committee during the Budget session to discuss such and related issues.

3. The Committee then authorized the Chairman to finalize the Report in view of the minor consequential changes as suggested by the Members and present the same to Parliament in the ensuing Budget session.

The Committee then adjourned

APPENDIX II

[Vide Para 4 of the Introduction]

ANALYSIS OF ACTION TAKEN BY THE GOVERNMENT ON THE RECOMMENDATIONS/OBSERVATIONS CONTAINED IN THE TENTH REPORT (FIFTEENTH LOK SABHA) OF THE COMMITTEE

(i)	Total number of Recommendations/Observations	23
(ii)	Recommendation/Observations which have been accepted by the Government Para Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 and 22	
	Total	*22*
	Percentage	*95.65%*
(iii)	Recommendations/Observations which the Committee do not desire to pursue in view of the Government's replies NIL	
	Total	*00*
	Percentage	*0 %*
(iv)	Recommendations/Observations in respect of which replies of the Government have not been accepted by the Committee Para Nos. 23	
	Total	*01*
	Percentage	*4.35 %*