developed the regional flood formulate for estimation of floods for gauged and ungauged catchment in drought prone parts of Orissa and Jharkhand and other states like Punjab and Rajasthan. Rainfall runoff modeling has also been carried out for design flood estimation in the moral catchment of Rajasthan State.

(b) (i) The flood frequency analysis and regional flood formulae may be used for Hydraulic Design of various types of Hydraulic structures for the flood protection in the states of Orissa and Jharkhand.

(ii) The results of rainfall runoff modeling may be utilized for designing of dams and barrages for flood protection in the mõral catchment of Rajasthan.

Management of rain water harvesting

3552. PROF. SAIF-UD-DIN SOZ : Will the Minister of WATER RESOURCES be pleased to state:

(a) the progress made, in respect of rain water harvesting in the country; and

(b) whether the Ministry envisages to put in shape any workable mechanism to ensure real progress in the movement for rain water harvesting?

THE MINISTER OF STATE IN THE MINISTRY OF WATER RESOURCES (SHRI VINCENT PALA) : (a) Central Ground Water Board has implemented pilot/demonstrative projects on rain water harvesting and artificial recharge since VIII Plan for replication by the State Governments. A total of 938 recharge structures have been constructed during VIII, IX and X Plan. During the XI Plan, a total of 1447 rain water harvesting and recharge structures have been approved till 25th August, 2011 against which 544 structures have been completed.

Roof top rain water harvesting has been made mandatory by States/Union Territories of Andhra Pradesh, Bihar, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Punjab, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand, West Bengal, Chandigarh, Daman & Diu, NCT Delhi and Puducherry. Besides, efforts have been made by the State Governments to implement as well as promote rain water harvesting. Efforts made by various State Governments are listed in the Statement. *(See* below).

(b) 'Water' is a State subject, therefore, State Governments are primarily responsible for taking necessary measures to ensure progress in the movement for rain water harvesting.

However, Ministry of Water Resources has promoted rain water harvesting through various measures like mass awareness campaigns, training programmes, painting competitions, participation in exhibitions/fairs, distribution of pamphlets/ brochures, display of hoardings etc.

The Ministry of Water Resources has also constituted Advisory Council on Artificial Recharge to Ground Water in the year 2006 under the Chairmanship of Hon'ble Minister of Water Resources for popularization of the concept of artificial recharge among stakeholders as well as water managers. The Government has instituted Ground Water Augmentation Awards & National Water Award in order to encourage Non-Governmental Organizations (NGOs)/Gram Panchayats/Urban Local Bodies/Institutions/Corporate Sector and Indivlduals 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.

Statement

Action taken by States/ UTs Governments to promote rain water harvesting

S.No.	State/ UT	Action taken
1	2	3
1.	Andhra Pradesh	• Municipal Administration and Urban Development Department vide G.O. No. 185 dated May 5, 2001 have been assigned responsibilities and made special efforts to conserve rain water through rain water harvesting structures in urban environs. • Municipal Corporation of Hyderabad, surrounding Municipalities and Panchayats have been made responsible for construction of rain water harvesting pits.
2.	Chhattisgarh	Rain Water Harvesting project "Gujra Sub Watershed Management Project" implemented in semi critical block Patan of Durg District by Public Health Engineering Department.

1	2	3
3.	Delhi	• Financial assistance of 50% of the cost upto Rs. I lakh is provided under Bhagidari programme to Group Housing Societies, Resident Welfare Associations, private/recognized schools, institutional buildings, hospitals, charitable institutions for construction of rain water harvesting structures. • MOU signed with Confederation of Indian Industries (CII) for promotion of water conservation, water audit of Govt. buildings and industries. • Govt. departments have been requested to adopt rain water harvesting and waste water recycling system. • Education Department has implemented rain water harvesting in all schools under their control. • NDMC, MCD, DDA, PWD sanctioned plan by including rain water harvesting and implemented rain water harvesting in their buildings.
4.	Gujarat	• Construction of Check Dams, khettalavdi and tanks, spreading channels and Deeping of Percolation tanks under Sardar Patel Sahbhagi Jal Sanchay Yojana & Sujlam Suflam Yojna. • Construction of Recharge Tube Wells.
5.	Himachal Pradesh	• Construction of rain water harvesting system has been made mandatory for all Schools, Govt. buildings and Rest Houses, upcoming industries, bus stands etc. • Irrigation & Public Health Department has instructed all field offices to undertake rain water harvesting for supplementing existing drinking and irrigation water supply schemes.
6.	Karnataka	• Different departments have implemented programmes of rainwater harvesting and artificial recharge in the state.

1	2	3
		• Revival of conventional methods of rain water harvesting in ponds, lakes, wells, step wells used earlier are implemented by the Jal Samvardhan Yojana Sangh, Rural Development & Panchayati Raj and other departments.
7.	Maharashtra	Launched rain water recharge scheme named "Shivkalin Pani Sathawan Yojana" (Shivkalin Water Recharge Scheme) in the State from 2002 in rural areas. Under this scheme, drinking water sources are strengthened by recharging rainwater through different water harvesting structures.
8.	Orissa	• Dte. of Ground Water Survey & Investigation has undertaken construction of recharge structures like recharge tanks, recharge dugwell, recharge pits, renovation of existing ponds, recharge tubewell, recharge borewells, check dams, roof top rain water harvesting structures in different watersheds.
		• Orissa Watershed Development Mission, Dte. of Soil Conservation and Minor Irrigation Department have taken necessary steps for renovation, restoration and repair of water bodies like tanks, ponds, wells etc.
9.	Punjab	Punjab Urban Development Authority has made provision of rain water harvesting mandatory in all institutional buildings while approving building plans as well as licensed colonies developed by private promoters.
10.	Tamil Nadu	• The State has launched implementation of Rain Water Harvesting scheme on massive scale in Government buildings, private houses/Institutions and commercial buildings in urban & rural areas.
		• The State Government has achieved cent percent coverage in roof top rain water harvesting.

1	2	3
		• TamilNadu Water Supply and Drainage Board (TWAD) has constructed various recharge structures like check dams, percolation ponds, recharge pits, trenches, etc.
11.	Rajasthan	• The State Ground Water Department has prepared master Plan for artificial recharge of ground water in the state by utilizing rain water, which has been handed over to State Water Resources Department for its implementation by construction of artificial recharge structures on the sites proposed by Ground Water Department. • About 300 artificial recharge structures (check dams, percolation tanks, dug out ponds, subsurface barriers ete.) have been constructed on pilot basis in Mandore - Osian, Distt. Jodhpur, Piprali, Distt Sikar and Khamnor, Distt. Rajsamand under "Rajasthan Water Sector Restructuring Project" • Structures like contour bunding, check dams, contour furrows/staggered trenches and various water harvesting structures like renovation of existing structures (nadi/pond), farm ponds, anicuts are constructed under Desert Development Programme, Drought Prone Area Programme and Integrated Wasteland Development Project, National Watershed Development Programme for Rainfed Areas and Integrated Watershed Management Programme by Watershed Development & Soil Conservation Department.
12.	Uttar Pradesh	• In all developmental schemes (Government/private) roof top rain water harvesting is compulsory for plots of 100 sq.m. and above but below 200 sq.m., network of combined recharge system is essential and for plots of 300 sq.m. and above, if combined system is of recharge is not possible, landlord has to install the system.

1	2	3
		• In Govt. Buildings (both new as well as old), installation of rain water harvesting structures has been made mandatory. • For housing schemes of 20 acres and above it is mandatory to develop ponds/water bodies in 5% of the total proposed area. • For regular monitoring of different schemes of rain water harvesting by different departments, an 'Executive Committee' under the chairmanship of the Chief Secretary has been constituted.
13.	Uttarakhand	• 109 traditional ponds and 104 percolation tanks have been constructed to conserve water. Besides these schemes, basin/sub basin catchment programme has been taken up by the Project Management Unit (PMU) under "Swajal Project" under the Catchment Area Conservation and Management Plan (CACMP).
14.	West Bengal	• The State Water Investigation Directorate (SWID) undertaken the pilot schemes of demonstrative nature. The Water Resources Development Directorate is engaged to replicate it accordingly. SWID has also implemented artificial recharge schemes in drought prone districts of Purulia, Bankura and West Midnapore as well as in some semi critical/critical blocks. • Different types of artificial recharge schemes have been implemented under different programmes of state and central assistance. A good numbers of tanks in Uttar Dinajpur and South 24 Parganas have been rejuvenated under Repair, renovation and restoration of water bodies directly linked to agriculture under central assistance programme.

1	2	3
		• The State Govt has given importance towards formulating schemes based on impounding Reservoir, Rain Water Storage Pond, Rooftop Rain Water Harvesting etc. • The Public Health Engineering Department, Govt. of West Bengal has undertaken 20 nos. of schemes in based on rain water storage ponds, 14 nos. of schemes based on impounding water of various dams and 22 nos. schemes based on rooftop rain water harvesting.

Irrigation and drinking water projects

†3553. SHRIMATI BIMLA KASHYAP SOOD: Will the Minister of WATER RESOURCES be pleased to state:

(a) the number of irrigation and drinking water projects approved in Himachal Pradesh during the last three years;

(b) the share of the Central and State Governments in them and the amount released by the Central Government every year; and

(c) the number of completed projects those under construction and the time by when these are likely to be completed?

THE MINISTER OF STATE IN THE MINISTRY OF WATER RESOURCES (SHRI VINCENT PALA) : (a) to (c) New & 2 Revised medium Irrigation projects of Himachal Pradesh have been approved by the Planning Commission in the last three years. Also, during the last three years, 307 surface MI schemes of Himachal Pradesh have been recommended for AIBP assistance. The State Governments are vested with powers to plan approved, executed and implement drinking water supply schemes under National Rural Drinking Water Programme. 4206 rural water supply schemes have been approved from l.4.2009 to 2.9.2011 under National Rural Drinking Water Programme (NRDWP) in Himachal Pradesh.

The Share of the Central and State Government for irrigation projects of Himachal Pradesh are in the ratio of 90:10. Details of Central assistance released under the AIBP for completion of Irrigation

†Original notice of the question was received in Hindi.