

**GOVERNMENT OF INDIA  
WATER RESOURCES  
LOK SABHA**

UNSTARRED QUESTION NO:1730

ANSWERED ON:07.03.2013

DECLINE IN GROUND WATER

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**Will the Minister of WATER RESOURCES be pleased to state:**

- (a) the percentage of ground water based agricultural production in the country;
- (b) whether the Union Government has assessed the present status of ground water; and if so, the details thereof, State/UT-wise;
- (c) whether the depleting level of ground water has adversely affected foodgrain production in the country and has also caused severe drinking water scarcity and if so, the steps taken by the Government for sustainable use of water resources for agricultural and drinking water purposes;
- (d) whether new aquifers are being traced using latest techniques and if so, the details thereof, State-wise for the last five years and the expenditure made on it;
- (e) whether the scientists of USA have conducted any study of ground water level in India and if so, the details thereof and the follow-up action taken thereon; and
- (f) whether any proposals have been received from Ground Water Surveys and Development Agency and Tapi Irrigation Development Corporation regarding recharge of ground water in Maharashtra and if so, the status thereof?

**Answer**

THE MINISTER OF WATER RESOURCES ( SHRI HARISH RAWAT)

- (a) Out of 632.6 lakh hectare net irrigated area during 2009-10, the area irrigated by ground water was 390.4 lakh hectare thus contributing 61.71 % of the total irrigation.
- (b) Central Ground Water Board (CGWB) under Ministry of Water Resources carries out periodic assessment of groundwater resources of the Country in association with the State Governments. As per the latest assessment of ground water resources (as on 2009) the total annual replenishable Ground Water resource of the Country is 431 Billion Cubic Metres (BCM). Details are given in Annexure.
- (c) Central Ground Water Board (CGWB) under the Ministry of Water Resources monitors ground water levels on regional scale through a network of 15653 observation wells located throughout the Country. Water levels are monitored four times in a year during the months of January, April/May, August and November. Analysis of groundwater level data for the pre-monsoon period (April/May) during the last five years (2007-2012) indicates that 55% of the wells analysed have registered declining trend. Several steps have been taken to encourage artificial recharge, rainwater harvesting and regulating ground water development to arrest declining ground water levels over the entire Country. Ministry of Agriculture & Cooperation have informed that various watershed development programmes are implemented for water harvesting. Besides, Ministry of Agriculture & Cooperation implements National Mission on Micro Irrigation under which drip and sprinkler irrigation systems are adopted.
- (d) During 2012-13, CGWB has undertaken Pilot Project on aquifer mapping in 6 areas in the States of Maharashtra (part of Nagpur district), Rajasthan (parts of Dausa and Jaisalmer districts), Bihar (part of Patna district), Karnataka (part of Tumkur district) and Tamilnadu (part of Cuddalore district) using advanced geophysical techniques to test the efficacy of technologies in mapping of aquifers in different hydro-geological terrain. Till January 2013, an expenditure of `673.13 lakh has been made for the Pilot Project.
- (e) A paper on `Satellite-based estimates of groundwater depletion in India' was published in August, 2009-Issue, of scientific journal 'Nature' by American Scientists from National Aeronautics and Space Administration(NASA) and University of California, United States of America. In that study, an area of about 4.4 lakh sq.km covering the States of Rajasthan, Punjab, Haryana and Delhi, was taken up as a single unit without actual field mapping of ground water levels. The scientists have made an attempt to estimate ground water depletion in north-western India using Terrestrial Water Storage (TWS) change observations from NASA Gravity Recovery and Climate Experiment (GRACE) satellite data for the period from August, 2002 to October, 2008. The study has indicated that ground water is depleting in the aforementioned four States at a mean rate of  $4.0 \pm 1.0$  cm/year equivalent height of water ( $17.7 \pm 4.5$  cubic km/year). On review of the paper by the CGWB, it was observed that the GRACE mission ground water storage studies are satellite based estimates and coarse resolution of GRACE data limits its applicability to study ground water dynamics. The CGWB

estimations are, however, based on field data and bring out smaller scale variations in the ground water storage pattern over a vast region.

(f) Central Ground Water Board, Regional Office, Nagpur had received six proposals from Tapi Irrigation Development Corporation (TIDC) and seven from Ground Water Surveys and Development Agency

(GSDA) for projects related to recharge of ground water in Maharashtra State during the XIth Plan period. All the six proposals, received from TIDC, were returned as those were either not in the prescribed DPR format or were technically not feasible. Regarding the seven proposals received from GSDA, four proposals were returned being not in the prescribed format. Besides, two proposals were not considered as those were falling under 'Safe' category area. One proposal was received after closure of 'Demonstrative Artificial Recharge' component of the Centrally Sponsored Scheme which was in implementation during the XIth Plan period.