

**GOVERNMENT OF INDIA
WATER RESOURCES
LOK SABHA**

STARRED QUESTION NO:384
ANSWERED ON:23.08.2004
WATER HARVESTING PROJECTS
Tripathy Shri Braja Kishore

Will the Minister of WATER RESOURCES be pleased to state:

- (a) whether rain water harvesting projects have helped in recharging the declining ground water level in the country including Delhi;
- (b) if so, the details of data collected from various on- going projects; and
- (c) the manner in which the Government propose to protect rain water from going waste?

Answer

THE MINISTER OF WATER RESOURCES (SHRI PRIYA RANJAN DASMUNSI)

(a) to (c) A Statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY OF PARTS (a) TO (c) OF LOK SABHA STARRED QUESTION NO.384 FOR REPLY ON 23.08.2004 REGARDING WATER HARVESTING PROJECTS

(a) Yes, Sir.

(b) Impact assessment of some representative artificial recharge schemes implemented by the Central Ground Water Board (CGWB) in the country, including Delhi under its Central Sector Scheme on "Study of Recharge to Ground Water" are given in the Annexure.

(c) Water being a State subject, it is primarily the responsibility of the concerned State Governments to protect rain water from going waste. However, the Central Government/CGWB have undertaken mass awareness programmes and training courses with a view to make people conscious about the need for protection of rain water wastage. Water conservation campaign has been launched keeping in view the various target groups like youth and children, women, farmers and villagers, policy and opinion makers. Publicity through print media, telecasting of spots on the television, broadcasting messages on radio, holding of seminars, workshops, conferences etc., have been undertaken for the purpose.

In addition to the above, the following steps have also been taken:-

(i) Circulation of Manual/Guidelines on Artificial Recharge to Ground Water to States/UTs.

(ii) Persuading States to make roof top rain water harvesting mandatory in urban areas by amending building bye-laws. Provision of roof top rain water harvesting system has been made mandatory in Haryana, Karnataka, Kerala, Maharashtra, Nagaland, NCT of Delhi, Rajasthan, Tamil Nadu and Uttar Pradesh for specified categories of buildings in respective States.

(iii) Providing technical guidance to Central/State Government agencies, institutions, individuals and industries etc., on design of rain water harvesting structures.

ANNEXURE

(REFERENCE LOK SABHA STARRED QUESTION NO. 384 DATED 23.08.2004)

IMPACT ASSESSMENT OF ARTIFICIAL RECHARGE SCHEMES IMPLEMENTED BY CENTRAL GROUND WATER BOARD

Name of the State/U.T.	Name of the Scheme	Type of the Scheme	Results
Chandigarh	Roof top rain water harvesting at CSIO, Chandigarh	Roof rainwater harvesting system	top 3812 m3 of rain water was recharged annually.
	Roof top rainwater	Roof	top 1985 m3 of rain water

	harvesting at Basic Sciences Block, Punjab University, Chandigarh	rainwater harvesting system	(93% of total generated runoff) recharged annually.
Haryana	Roof Top/Pavement rain water harvesting system at DC Office, Faridabad	Roof top rain water harvesting system	2370 cubic meters rainwater recharged in one rainy season.
	Artificial recharge to ground water by utilizing wastewater from Brahm Sarovar, Distt. Kurukshetra	Recharge Shafts	0.3496 MCM of rain water recharged during the year. The decline rate in water level in benefited zone was 0.25 m/yr whereas general decline rate in the area is 1.175 m/yr.
Karnataka	Rainwater harvesting in Mulbagul and Gauribidnur talukas, Kolar district.	Check Dam, Watershed treatment, Gravity Recharge Wells.	Sustainability of ground water structures increased by 2 to 3 times. Crop Intensity increased by 2 to 3 times.
Madhya Pradesh	Construction of Sub-Surface Dykes at Dhobighat and Chhintaharan in Utawali Watershed, Block Burhanpur, District Khandwa.	Sub-surface dykes	Rise in ground water levels in upstream area has been observed. The surface flow in the downstream of the river is reduced.
	Artificial recharge studies in Khargone district.	Sub-surface dykes	Rise in ground water level reflected by increase of command area of dugwells in the vicinity of these dykes has been observed. The surface flow in the river has been reduced substantially.
	Artificial recharge studies in Londhri Watershed, village Narayana, Dewas district	Sub-surface dykes Check Dam	Rise in water level in existing tubewells in upstream area by 0.30 to 2.00 m has been observed.
	Artificial recharge studies in Barwa Kalan, Rajgarh district	Sub-surface dyke	Rise in water level in dugwells in the range of 0.80-3.80 m and 6-12m in handpumps has been observed.
	Artificial recharge from Percolation tanks at Sukhedi, Mandasaur district	Percolation tank	Water level rise of 1-4 metres in the command area downstream of tank has been observed.
	Roof top rain water harvesting in Dewas city	Roof top rain water harvesting through 1000 buildings	Peoples participation was demonstrated through this scheme where only on-line filter was supplied free of cost and other arrangement of roof top rain water harvesting was done by beneficiaries. Increase in yield of tubewells and improvement in ground water resource was recorded despite deficit rainfall.
	Construction of sub-surface dyke at Walmi farm	Sub-surface dyke	The demonstration farm recorded availability of ground water after drying up of surface water pond. The average rate depletion of ground water level has reduced from 10 cm/day to 6 cm/day.
Maharashtra	Artificial Recharge in Besaltic terrain, Warud Taluka, Amravati district.	Percolation tanks, Check Dams.	Benefited area - About 60 to 120 ha. per Percolation Tank, 3 to 15 hectare per Check Dam Water level rise - Upto 1.5 m.

	Mountain Front Recharge of alluvial aquifers, Yaval Taluka, Jalgaon district.	Percolation tanks, Recharge Shaft, Dugwells.	Benefited area - upto 5 Sqkm. Benefited area-400 hectare Water level rise-1 to 5 m
	Roof Top Rainwater harvesting, KITS, Ramtek, Nagpur district.	Rooftop rainwater harvesting.	90% of harvested rain water is recharged. Water level rise and increase in discharge in nearby wells has been observed.
	Roof top rain water harvesting at Panchayat Samiti office premises, Distt. Amravati	Rooftop rainwater harvesting	Estimated that 280.17 m3 of rain water (90% of total runoff generated) was recharged
NCT, Delhi	Artificial Recharge in JNU & IIT	Check Dams	Water levels have risen upto 2.55 m in the vicinity of Check Dams and area benefited is upto 30 hectare from each check Dam.
	Roof Top Rain Water Harvesting in IIT	Roof Top rain harvesting system.	787 cubic meter rain water recharged. Rise in water levels 0.12 to 0.78 m.
	Roof Top/Pavement rainwater harvesting system at President's Estate	Roof Top/Pavement Rain Water Harvesting System through existing dugwell, recharge shaft, recharge well.	Water level rise - 0.94 to 2.32 meters
	Roof Top/Pavement rainwater harvesting at Shram Shakti Bhawan.	Roof Top/Pavement Rain Water Harvesting System.	3000 cubic meter rain water recharged in one rainy season. Water level rise - 1.42 to 2.17 meters.
	Pavement rain water harvesting at Lodhi Garden.	Pavement Rain Water Harvesting System.	Water level rise - 0.67 to 0.72 meters.
Punjab	Artificial Recharge in alluvial aquifers from Dhuri Link Drain, District Sangrur	Lateral shaft injection wells. Vertical shafts	Recharge @ upto 16.51 lps and rise in ground water levels upto 1.38 meter in the vicinity of Lateral shaft.
	Artificial Recharge from village pond in Issui village, Ludhiana	Recharge shaft with injection well.	Estimated annual recharge of 14400 cum of surface water.
	Roof Top Rain Water Harvesting at Kheti Bhawan, Amritsar	Roof Top Water harvesting system	About 474 cubic meter of rainfall was recharged annually.
	Scheme for Recharge of sarovar water in Golden Temple area, Amritsar.	Recharge Wells	Declining rate of groundwater levels reduced from 0.9 m to 0.24 m.
	Artificial Recharge to groundwater utilizing surplus water of Khanna Distributary at Bhattian Canal Colony, Block Khanna, Distt. Ludhiana	Recharge Wells	Rise in groundwater level is from 0.31-0.66 m has been observed.
	Artificial Recharge to groundwater utilizing canal and surplus pond water	Recharge Wells	Falling water level trend from 1.39 m/month has decreased to 0.29 m/month.

at village
Channian, Nakodar
block, Distt.
Jalandhar
Artificial recharge Trenches
through runoff Average rise in water
generated in level to 0.32-0.70 m has
in been observed.
Sirhind Choe, Nabha
block, District
Patiala

Rajastha n	Artificial Recharge in Mainpura, Jhunjhunu district.	Check dam cum sub-surface barrier	Rainwater harvesting - 88000 cu.m. Water level rise - 0.65m.
	Roof Top Rain Water harvesting at Chief Minister's residence.	Roof top rain water harvesting system	725 cubic meter water recharged in one rainy season.
	Roof Top Rain Water Harvesting System at Raj Bhawan, Jaipur.	Roof top rain water harvesting system	490 cubic meter rain water recharged in one rainy season.
	Roof Top Pavement Rain Water Harvesting System at Rajasthan High Court, Jaipur	Roof top rain water harvesting system	1106 cubic meter rain water recharged in one rainy season.
	Roof Top Pavement Rain Water Harvesting at Vitta Bhawan, Jaipur.	Roof top rain water harvesting system	1106 cubic meter of rain water recharged in one rainy season
	Roof Top rain water harvesting at MREC, Jaipur.	Roof top rain water harvesting system	1640 cubic meter of rain water recharged in one rainy season.
	Roof Top Pavement rain water harvesting at CGWB Office building, Jaipur	Roof top rain water harvesting system	350 cubic meter of rainwater recharged in one rainy season.
	Roof Top rainwater harvesting at GWD Office building, Jaipur.	Roof top rain water harvesting system	321 cubic meter of rainwater recharged in one rainy season.
	Roof Top/Pavement Rain water harvesting at State Secretariat building (Part I&II), Jaipur.	Roof top rain water harvesting system	2320 cubic meter of rainwater recharged in one rainy season.
West Bengal	Artificial Recharge Project - Purulia district	Farm Ponds, Nala bunds, sub-surface dykes	Water level rise - 0.15 m.
	Artificial Recharge Project-Saltora Block, Bankura district	Sub-surface Dykes	Rise of 0.45 m recorded in ground water levels upstream of dykes during pre-monsoon period with respect to pre- construction period (1997).