(g) if so, the details thereof and the action taken thereon?

THE MINISTER OF STATE IN THE MINISTRY OF WATER RESOURCES (SHRIMATI BIJOYA CHAKRAVARTY): (a) and (b) The National Water Development Agency (NWDA), under the Ministry of Water Resources, has prepared a feasibility report of the Pamba-Achankovil-Vaippar link envisaging diversion of 634 Million cubic meter of surplus waters from Pamba and Achankovil rivers to Vaippar basin.

(c) and (d) The Centre for Water Resources Development and Management (CWRDM), Kozhikode, Kerala undertook a study sponsored by the Government of Kerala to understand the water balance of the rivers draining into the Vembanad wetland System and to look into the limitations of the earlier studies carried out by the State and National agencies and to come out with appropriate management plans for the system. The report concluded that all five rivers draining into Vambanad Lak including Pamba and Achankovil rivers would be water deficit in the ultimate stage of development.

(e) Does not arise.

(f) Yes, Sir.

(g) The Government of Kerala has forwarded a copy of the Resolution dated 6.8.2003 adopted unanimously by the Kerala Legislative Assembly urging the Central Government to give up the Pamba-Achankovil-Vaippar Link Project completely. The Ministry of Water Resources has taken note of the Resolution of the Kerala Legislative Assembly.

Rain water Harvesting

1541. SHRI G.K. VASAN: Will the Minister of WATER RESOURCES be pleased to state:

(a) whether rain water harvesting taken up in some States have yielded positive results; and

(b) if s, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF WATER RESOURCES (SHRIMATI BIJOYA CHAKRAVARTY): (a) Yes, Sir.

(b) Impact assessment of the artificial recharge schemes implemented by the Central Ground Water Board under its Central Sector Scheme on "Study of Recharge to Ground Water" are given in the enclosed Statement.

Statement

Impact assessment of Artificial Recharge Projects Implemented under CGWB's Central Sector Scheme on "Study of Recharge to Ground Water"

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 top rainwater Harvesting system	3812m³ of rain water was recharged
	Roof top rainwater harvesting at Basic Sciences Block, Punjab University, Chandigarh	Roof top rainwater harvesting system	1985 m³ of rain water (93% of total generated runoff) recharged
Haryana	Roof Top/Pavement rain water harvesting system at DC Office, Faridabad	Roof top rain water harvesting system	2370 cubic metres 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 dcline rate in water level in benefited zone was 0.25 m/yr whereas general decline rate in the are is 1.175 m/yr.
Karnataka	Rain Water harvesting in Mulbagul and Gauribidnaur 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 areas has been observed. The surface flow in the down stream 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

Name of the State/U.T.	Name of the Scheme	Type of the Scheme	Results
			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 Distt.	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, Mandsaur district	Percolation tank	Water level rise f 1-4 metres in the command are downstream of tank has been observed.
	Roof top rain water harvesting in Dewas city	Roof top rain water harvesting through 1000 buildings	People 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 rain fall.
	Construction of sub-surface dyke at Walmi farm	Sub-surface dyke	The demonstrations farm recorded availability of ground water after drying up of surface water pond. The average rate depletion of ground water level has reduced.

Maharashtra	Artifical 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 heactare per Check Dam Water level rise-Upto 1.5 m.
	Mountain Front Recharge of alluvial aquifers, Yaval Taluka, Jalgaon district	Percolation tanks, Rechage Shaft, Dugwells.	Benefitted area-upto 5Sq km. benefited area-400 heactare 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	Roottop rainwater harvesting	Estimated that 280.17 m^3 of rain water (90% of total runoff generated) was recharged.
NCT, Delhi	Artifical Recharge in JNU & IIT	Check Dams	Water levels have risen upto 2.55 m in the vicinity of Check Dams
	Roof Top Rain Water Harvesting in IIT	Root Top rain harvesting system.	787 cubic metre rain water recharged. Rise in water levels 0.12 to 0.78m.
	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

Name of the State/U.T.	Name of the Scheme	Type of the Scheme	Results
	Roof Top/Pavement rainwater harvesting Shram Shakti Bhawan. Pavement rain water harvesting at Lodhi Garden.	Roof Top/Pavement rain Water Harvesting System Pavement Rain Water Harvesting System.	3000 cubic meter rain water recharge in one rainy season. Water l 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.	Recharge @ of 10 lps
	Roof Top Rain Water Harvesting at Kheti Bhawan. Amritsar	Roof Top Water Harvesting System	210 cubic meter of rainfall was recharged.
	Scheme for Recharge of sarovar water in Golden Temple area Amritsar.	Recharge Wells	Declining rate of groundwater levels reduced from 0.9 m/yr to 0.24 m/yr.
	Artificial Recharge to groundwater utilizing surplus water of Khanna Distributary at Bhattian Canal colony, Block Khanna, distt. Ludhiana.	Recharge Wells	Rise in groundwater level from 0.31-0.66 m has been observed.
	Artifical Recharge to groundwater utilizing canal and surplus pond water at village Channian, Nakodar block, Distt. Jalandhar.	Recharge Wells	Falling water level trend from 1.39 m/month has decreased to 0.29 m/month.
	Artificial recharge through runoff generated in Sirhind Choe, Nabha block, District Patiala.	Trenches	Average rise in water level to 0.32-0.70 m has been observed.

Rajasthan	Artificial Recharge in Mainpura, Jhunjhunu district	Check dam cum sub-surface barrier	Rainwater harvesting-8800 cu.m. Water level rise-0.65 m.
	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.	Root 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 in upstream of dykes was recorded during pre-monsoon period with respect to preceding hydrologic cycle.