GOVERNMENT OF INDIA

MINISTRY OF JAL SHAKTI

DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA REJUVENATION

LOK SABHA

UNSTARRED QUESTION NO. 743

ANSWERED ON 07.12.2023

IRRIGATION EFFICIENCY

743. SHRI SUDHAKAR TUKARAM SHRANGARE SHRI DILIP SAIKIA

Will the Minister of **JAL SHAKTI** be pleased to state:

(a) whether the Government has any data on the irrigation efficiency and distribution of various sources of irrigation across the country;

(b) if so, the details thereof, States/UT-wise; and

(c) the measures taken by the Government to increase irrigation efficiency so that water may be conserved?

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI BISHWESWAR TUDU**)**

(a) Yes, the data on irrigation efficiency for some of the canal based irrigation projects and data on different sources of irrigation across the country is available.

(b) The details of irrigation efficiency baseline studies completed on 17 major/medium irrigation projects through 3 premier institutes namely Water And Land Management Training And Research Institute (WALAMTARI), Hyderabad, Water and Land Management Institute (WALMI), Aurangabad, Centre for Water Resources Development and Management (CWRDM), Kozhikode under National Water Mission (NWM) is at **Annexure-I**. Further, the Water Use Efficiency Studies for 35 Irrigation Projects conducted by Central Water Commission (CWC) are given at **Annexure-II**. The States/UT- wise details provided by Ministry of Agriculture & Farmers Welfare about the extent of area irrigated through various sources of irrigation is at **Annexure-III**.

(c) As the subject matters of water and agriculture falls under the State List of Seventh Schedule under Constitution of India, measures for increasing irrigation efficiency are primarily taken by respective State Governments. Central Government has been supplementing the efforts of the State Governments by providing technical and financial assistance through various schemes and programmes. The measures for increasing irrigation efficiency to conserve water taken at Government of India level are as:

i. **At Ministry of Jal Shakti level:** Modernization of Command Area Development and Water Management (CADWM) component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) is targeted for enhancing agriculture productivity and water use efficiency. The scheme also envisages transforming the existing command (whether rain fed or gravity based) to a Pressurized Piped Irrigation Command (PPIC) by providing pressurized irrigation water from Established source to Farm Gate below Minor (Tertiary) Level Network and this will target increase in the water use efficiency upto 90% at farm level ready with robust back end infrastructure using Surface Water.

ii. **At Policy level**: The National Water Policy, 2012 has recognized the importance of water use efficiency and has inter-alia made many recommendations in this regard, including (A) bringing in maximum efficiency in use of water and avoiding wastages; (B) use of economic incentives and penalties to reduce pollution and wastage; (C) setting up independent statutory Water Regulatory Authority by each State after wide ranging consultation with all stakeholders for equitable access to water for all and its fair pricing, for drinking and other uses such as sanitation, agricultural and industrial; (D) water charges be determined on volumetric basis; and (E) obligation on Industries in water short regions to return treated effluent to a specified standard back to the hydrologic system.

iii. **For creating awareness**: The Ministry of Jal Shakti has circulated "General Guidelines for Water Audit and Water Conservation" (2005) as a useful reference for undertaking water saving measures in all sectors of water use and facilitate State Governments to formulate their own region-specific, project-specific, system-specific or service-specific guidelines. Besides this, Ministry of Jal Shakti has also circulated "Guidelines for improving water use efficiency in irrigation, domestic and industrial sectors" (2014) to the States for their beneficial use. The National Water Mission (NWM) has been established by the Government of India with the objective of "conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management". NWM manages the annual Jal Shakti Abhiyan, to create awareness about water conservation.

iv. **At implementation level**: To achieve the target of improvement in water use efficiency by 20%, a dedicated organization has been set up as Bureau of Water Use Efficiency (BWUE) under Ministry of Jal Shakti during October, 2022. BWUE will act as a facilitator for promotion of improving water use efficiency across various sectors namely irrigation, drinking water supply, power generation, industries, etc. in the country, for promotion, regulation and control of efficient use of water in irrigation, industrial and domestic sectors. To take works of BWUE forward and to prepare the frame work for implementation, a dedicated Task Force has been constituted to provide the framework document for overall management of water use efficiency in India. The Task Force has submitted its report on 14.08.2023.

v. **At Ministry of Agriculture & Farmers Welfare level:** The Department of Agriculture and Farmers Welfare (DA&FW) is also implementing Centrally Sponsored Scheme of Per Drop More Crop (PDMC) in the country from 2015-16. From the year 2015-16 to 2021-22, the PDMC was implemented as component of PMKSY. During the year 2022-23, the PDMC is being implemented under the Rashtriya Krishi Vikas Yojana (RKVY). PDMC focuses on enhancing water use efficiency at farmer's farm level through Micro Irrigation namely, Drip and Sprinkler Irrigation Systems.

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ANNEXURE-I

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 743 TO BE ANSWERED IN LOK SABHA ON 07.12.2023 REGARDING "IRRIGATION EFFICIENCY".

Details of baseline studies completed on 17 major/medium irrigation projects under NWM.

Sl. No.	Name of Project	State	Study conducted by	CCA (ha)	Efficiency			Weighted average efficiency based on CCA
					Conve-yance efficiency (Wc)	On-farm Efficiency (Wf)	Overall Efficiency (Wc x Wf)	
1	Kuttyadi Medium Irrigation Project	Kerala	CWRDM, Kozhikode	25490	70	54	37.80	4.58
2	Peechi Irrigation Project**	Kerala		10492	76	38.64	29.37	1.47
3	Malampuzha Irrigation Project	Kerala		22554	71	66.2	47.00	5.04
4	Thatipudi Medium Irrigation Project	Andhra Pradesh	WALAM-TARI, Hyderabad	6218	79.78	41.76	33.32	0.99
5	Vengalarayasagaram Medium Irrigation Project	Andhra Pradesh		9996	69.08	40.81	28.19	1.34
6	Guntur Channel Diversion Scheme Medium Irrigation Project	Andhra Pradesh		12140	78.64	60.25	47.38	2.74
7	Torrigadda Pumping Scheme Medium Irrigation Project	Andhra Pradesh		5380	82.97	49.54	41.10	1.05
8	Rallapadu Medium Irrigation Project	Andhra Pradesh		6478	82.5	48.24	39.80	1.23
9	Taliperu Medium Irrigation Project	Telangana		10000	77.59	49.96	38.76	1.84
10	Vattivagu Medium Irrigation Project	Telangana		9919	69.86	39.18	27.37	1.29
11	Peddavagu Medium Irrigation Project	Telangana		6475	71.53	39.65	28.36	0.87
12	Sathnalla Medium Irrigation Project	Telangana		9717	83.21	65.89	54.83	2.53
13	Musi Medium Irrigation Project	Telangana		16923	77.19	58.57	45.21	3.64
14	Bor Irrigation Project	Maharashtra	WALMI, Aurangabad	24060	66.4	52.88	35.11	4.02
15	Arunavati Major Irrigation Project	Maharashtra		24135	54.32	48.7	26.45	3.04
16	Karpara Irrigation Project	Maharashtra		2862	80.22	59.85	48.01	0.65
17	Panzara Irrigation Project	Maharashtra		7328	71.67	66.05	47.34	1.65
	Total			**210166**				**37.98**

**Final report of Peechi irrigation project is being reviewed by Core Group

Note: Reservoir Efficiency has not been considered while calculating Overall Efficiency as it depends upon availability of Water in the catchment area and sedimentation of the Reservoir.

ANNEXURE-II

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 743 TO BE ANSWERED IN LOK SABHA ON 07.12.2023 REGARDING "IRRIGATION EFFICIENCY".

Water Use Efficiency Studies of 35 Projects conducted by CWC (in descending order)

Sl No	Name of Project	Major/ Medium	State	CCA in Ha	Conveyance Efficiency (%)	On Farm Application Efficiency (%)	Overall Project Water Use Efficiency (%)
1	KoilSagar Project	Medium	A.P	11,700	83	75	62
2	Bhairavanithippa Project	Medium	A.P	4,856	86	67	58
3	Augmentation Canal Project	Major	Haryana	85,443	79	72	57
4	Matatila Dam Project	Major	U.P	1,79,880	68	80	54
5	Eastern sone canal	Major	Bihar	1,26,055	73	73	53
6	Vamsadhara Project	Major	A.P	82,087	91	58	53
7	Durgawathi Irrigation Project	Major	Bihar	21,110	81	65	53
8	Dholabaha Dam Project	Medium	Punjab	2,600	74	71	53
9	Kamla Irrigation Project	Major	Bihar	28,331	70	74	52
10	Naugarh Dam Irrigation Project	Major	U.P	64,221	71	70	50
11	Ahraura Dam Irrigation Project	Medium	U.P	14,964	70	70	49
12	Tungabhadra High Level Canal	Major	A.P	45,800	81	58	47
13	Godavari Delta System (Sir Arthur Cotton Barrage)	Major	A.P	4,10,108	83	54	45
14	Sri Ram Sagar Project	Major	A.P	3,71,054	78	57	45
15	Rajolibanda Diversion Scheme	Major	A.P	35,410	82	51	42
16	East Baigul Reservoir Project	Medium	U.P	16,605	64	65	42
17	Krishna Delta System (Prakasam Barrage)	Major	A.P	5,29,000	87	46	40
18	Nizamsagar Project	Major	A.P	93,659	87	45	39
19	WalmikiSarovar Project	Major	U.P	6,271	62	62	38
20	Pili Dam Project	Medium	U.P	4,044	58	65	38
21	RanjitSagar Dam Project	Major	Punjab	3,00,000	51	65	33
22	Tungabhadra Low Level Canal	Major	A.P	61,163	72	45	32
23	Saran Canal Irrigation Project	Major	Bihar	3,60,000	53	69	30
24	Upper Morhar	Major	Bihar	5725	77	40	30
25	Kurnool Cuddapah Canal System	Major	A.P	65,465	62	45	28
26	Gandipalem Project	Medium	A.P	6,478	73	38	28
27	Gajuladinne (Sanjeevaiah Sagar Project).	Medium	A.P	10,300	57	45	26
28	Nagarjuna Sagar Project	Major	A.P	8,89,000	56	39	22
29	Somasila Project	Major	A.P	54,650	56	32	18
30	Kaddam Project	Major	A.P	27,519	51	36	18
31	Srisailam Project	Major	A.P	59,900	50	34	17
32	Narayanapuram Project	Medium	A.P	15,855	47	32	15
33	Yeleru Project	Major	A.P	27,240	50	28	14
34	Nagal Lift Project	Major	Haryana	35,721	48	27	13
35	Upper Manair Project	Medium	A.P	6,984	-	-	-
	Weighted average value				**69**	**55**	**36**

ANNEXURE-III

ANNEXURE REFERRED TO IN REPLY TO PART (b) OF UNSTARRED QUESTION NO. 743 TO BE ANSWERED IN LOK SABHA ON 07.12.2023 REGARDING "IRRIGATION EFFICIENCY".

State-wise details of different sources of irrigation in the country for the year 2021-22

(in thousand hectares)

State/ Union Territory/ Year	NET AREA IRRIGATED FROM							
	C A N A L S			Tanks	WELLS		Other Sources	Net Irrigated Area (col. 4 to 8)
	Government	Private	Total		Tube-Wells	Other Wells		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ANDHRA PRADESH	1344		1344	310	1162	28	108	2952
ARUNACHAL PRADESH							63	63
ASSAM	101	10	112	7	105	52	162	438
BIHAR	967		967	53	1924	23	116	3082
CHHATTISGARH	899	0	899	25	610	12	59	1604
GOA	8		8	0	0	0	7	15
GUJARAT	1604		1604	239	1874	1693	386	5796
HARYANA	1237		1237		2342			3579
HIMACHAL PRADESH	5		5	0	28	3	75	111
JHARKHAND	4		4	90	19	71	94	279
KARNATAKA	1435		1435	154	2244	321	768	4920
KERALA	72	0	73	48	45	122	116	403
MADHYA PRADESH	1824		1824	512	5015	3056	2495	12903
MAHARASHTRA*	1033		1033		2070			3103
MANIPUR*							62	62
MEGHALAYA	84	18	102					102
MIZORAM	2	14	16					16
NAGALAND							49	49
ODISHA							1238	1238
PUNJAB	1160		1160		2953			4113
RAJASTHAN	2056		2056	39	4457	2157	215	8924
SIKKIM*							14	14
TAMIL NADU	684	0	684	410	546	1285	5	2930
TELANGANA	2085		2085	222	834	207	29	3376
TRIPURA	7		7	2	8	1	71	89
UTTARAKHAND	65	1	66	0	226	2	21	315
UTTAR PRADESH	2204		2204	85	10299	1269	84	13941
WEST BENGAL							3127	3127
ANDAMAN & NICOBAR ISLANDS*				0		0	0	0
CHANDIGARH					0			0
DADAR AND NAGAR HAVELI AND DAMAN AND DIU	0		0	0	0	1	0	2
DADRA & NAGAR HAVELI								
DAMAN & DIU								
DELHI	2		2		18	0	1	22
JAMMU & KASHMIR	163	104	267	10	8	7	22	315
LADAKH	3	17	20				0	20
LAKSHADWEEP								
PUDUCHERRY	5		5		9		0	14
ALL INDIA	**19054**	**164**	**19218**	**2205**	**36797**	**10308**	**9387**	**77916**

* Provisional

Note:'0' relates to the area below 500 Hectares

Blank space denotes not available or no reporting of data from the States/UTs

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers' Welfare.

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