GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE& FARMERS' WELFARE
DEPARTMENT OF AGRICULTURE & FARMERS' WELFARE

RAJYA SABHA
STARRED QUESTION NO.247
TO BE ANSWERED ON THE 11/08/2023

SHORTAGE OF WATER FOR IRRIGATION DUE TO CLIMATE CHANGE

*247. SHRI C. VE. SHANMUGAM:

Will the Minister of AGRICULTURE AND FARMERS' WELFARE be pleased to state:

(a) whether it is a fact that due to climate change it is estimated that there is going to be a shortage of water for agriculture in future;
(b) if so, the details thereof including the action plan for this;
(c) whether there will be a major problem of irrigation in agriculture sector due to shortage of water;
(d) if so, the details thereof;
(e) whether Government has any policy for management of agriculture sector in future; and
(f) if so, the details thereof and if not, the reasons therefor?

ANSWER

MINISTER OF AGRICULTURE AND FARMES WELFARE
(SHRI NARENDRA SINGH TOMAR)

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

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (f) OF RAJYA SABHA STARRED QUESTION NO. 247 DUE FOR REPLY ON 11/08/2023.

(a) to (f): Ministry of Environment, Forests and Climate Change conducted studies on impact of climate change in India as part of the Second National Communication to the United Nations Frame Work Convention on Climate Change. The studies revealed that impact of climate change and climate variability on the water resources is likely to affect irrigation in agriculture. However, the impact of climate change has been dealt with effectively through various interventions of the Government.

The Government is implementing Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) with an aim to enhance physical access of water on farm and expand cultivable area under assured irrigation and introduce sustainable water conservation practices. The components of PMKSY are as under:

i) Accelerated Irrigation Benefit Programme (AIBP) and Har Khet Ko Pani (HKKP) components of PMKSY are being implemented by Department of Water Resources, River Development & Ganga Rejuvenation (DoWR,RD&GR). AIBP focuses on faster completion of ongoing 99 nos. of Major and Medium Irrigation projects, prioritized during 2016-17, along with their Command Area Development & Water Management (CADWM) works under HKKP in Mission Mode. Out of these projects, 53 projects have been completed so far. The PMKSY was approved for continuation from 2021-22 to 2025-26. In addition, 6 new projects have been included under PMKSY-AIBP after 2021-22.

ii) Watershed Development Component (WDC-PMKSY): Integrated Watershed Management Programme (IWMP) amalgamated as one of the components of PMKSY in 2015-16 and named as the Watershed Development Component (WDC-PMKSY) is being implemented by Department of Land Resources. Under WDC-PMKSY 1.0, Central assistance was provided for 8214 watershed development projects in 28 States and an amount of Rs. 8894.46 crore was released. The extended project period of WDC-PMKSY 1.0 got over on 31.03.2022. From the year 2014-15 to 2021-22, approximately 7.64 lakh water harvesting structures have been created / rejuvenated and an additional area of about 16.41 lakh ha has been brought under protective irrigation. The WDC was approved for continuation from 2021-22 to 2025-26 as WDC-PMKSY 2.0 and an area of 50.55 lakh ha of watershed projects has been sanctioned to 28 States and UTs of Jammu & Kashmir and Ladakh. So far, an amount of Rs. 2288.34 crore as Central share has been released to

States/UTs and approximately 0.38 lakh water harvesting structures have been created / rejuvenated having an additional area brought under protective irrigation of 0.44 lakh ha.

iii) DoWR, RD & GR has set up Bureau of Water Use Efficiency (BWUE) for promotion, regulation and control of efficient use of water in irrigation, industrial and domestic sector. The Bureau facilitates promotion of improving water use efficiency across various sectors namely irrigation, drinking water supply, power generation, industries etc. in the country. National Water Mission (NWM) launched the 'Sahi Fasal' campaign to farmers in water stressed areas to grow crops which are not water intensive but use water efficiently and are economically remunerative, healthy and nutritious and suited to the agro-climatic-hydro characteristics.

iv) Further, Government supports construction of water harvesting and conservation works primarily through Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). Mission Amrit Sarovar launched as a part of celebration of Azadi ka Amrit Mahotsav with an objective to conserve water for future. The Mission is aimed at developing and rejuvenating 75 water bodies in each district of the country. As on date, 111406 sites have been identified and work has commenced on 80428 sites. The work has been completed on 64967 sites. In addition, large number of water bodies such as farm ponds, dug wells, checkdams and community ponds (water harvesting & Fishery) have been created under the MGNREGS Scheme. Till February, 2023, 64,09,852 number of water harvesting structures have been created under the scheme.

Besides, to meet the challenges of Agriculture in the face of changing climate, the Indian Council of Agricultural Research (ICAR) under Ministry of Agriculture and Farmers' Welfare has launched a flagship network project namely National Innovations in Climate Resilient Agriculture (NICRA). The project aims to study the impact of climate change on agriculture including crops, livestock, horticulture and fisheries and to develop and promote climate resilient technologies in agriculture including water productivity. Besides, ICAR has developed cost effective, location specific scientific technologies viz. rainwater harvesting & recycling, precision technologies for irrigation and farming practices, adoption of modern agronomic practices, diversifying cropping pattern from water guzzling crops like low land rice, sugarcane to pulses, oilseeds, maize and agro-forestry etc. It also imparts training and organizes field demonstrations to educate farmers in this regard.

Other major initiatives taken by ICAR to address the impact of climate change in agriculture are as under:-

i. ICAR has developed resilient varieties in different crops tolerant to climatic stresses to improve the food grain production in the face of changing climate. Since 2014, a total of 2279 varieties have been released out of which 1888 are climate resilient varieties which include 407 abiotic stress tolerant varieties and 1481 biotic stress tolerant.

ii. Sixty eight location-specific climate resilient technologies have been developed and popularized for wider adoption among the farming communities.

iii. District level risk and vulnerability assessment of Indian agriculture to climate change has been prepared which is useful for several Ministries/ Departments for prioritizing resources towards developmental programs.

iv. Based on vulnerability assessment, climate resilient technologies are being demonstrated on farmer's fields in 151 clusters covering 446 villages.

v. Agricultural contingency plans for 650 districts have been prepared and State officials have been sensitized for preparedness. Agricultural contingency plans have been made available online for policy makers to take decisions in the event of delayed monsoons and other extreme weather events.

vi. ICAR in collaboration with India Meteorological Department (IMD) is issuing Agromet advisories twice a week (Tuesday and Friday) to around 6 crore farmers of the country through Gramin Krishi Mausam Seva Program. The advisories are reaching the farmers through m-KISAN portal, WhatsApp groups, SMS services etc.

vii. During the past decade, 19,564 capacity building programs were conducted throughout the country under NICRA project to educate stakeholders on various aspects of climate change and resilient technologies, covering 5,60,016 different stakeholders including farmers so as to enable wider adoption of climate resilient technologies.

viii. ICAR has made efforts to improve the nutritional quality in high yielding varieties of cereals, pulses, oilseeds, vegetables and fruits using breeding methods and developed 87 varieties under special project on Consortium Research Platform on Biofortification.

ix. System of Rice Intensification/ Direct Seeded Rice (SRI/ DSR) are also being promoted under National Food Security Mission (NFSM) for reducing use of water in agriculture sector.

This Ministry is also implementing several programmes/schemes under the National Mission on Sustainable Agriculture (NMSA) to transform Indian agriculture into sustainable production system. They include Rainfed Area Development Programme, Soil Health &

Fertility, Per Drop More Crop, Agro-forestry, National Bamboo Mission, Paramparagat Krishi Vikas Yojana, Sub Mission on Agricultural Mechanization, Crop Residue Management, Crop Diversification Program, National Bamboo Mission, National Mission for Integrated Development Horticulture (MIDH), National Food Security and Nutrition Mission, Mission on Organic Value Chain Development for North East Region etc. Besides, in order to promote climate friendly and water use efficient crops, the Government has taken up various initiatives to increase the cultivation of millets. Per Drop More Crop (PDMC) scheme promotes water use efficiency at the farm level through Micro Irrigation technologies i.e. drip and sprinkler irrigation systems. Till date an area of 79.15 lakh hectare has been covered under Micro irrigation through the PDMC scheme from the year 2015-16. Rainfed Area Development (RAD) scheme is being implemented as a component under National Mission for Sustainable Agriculture (NMSA) from 2014-15 in the country. RAD focuses on Integrated Farming System (IFS) for enhancing productivity and minimizing risks associated with climatic variability. Till date an area of 7.11 lakh hectares has been covered under RAD programme from the year 2014-15. Soil Health Card (SHC) / Soil Health Management (SHM) scheme is operational through the State Governments under National Project on Management of Soil Health & Fertility. Now, this scheme has been merged as Soil Health Management Component of Rashtriya Krishi Vikas Yojana (RKVY) from the year 2022-23. The main objective of the scheme is to assist states in promoting Integrated Nutrient Management (INM) through judicious use of chemical fertilizers including secondary and micro nutrients in conjunction with organic manures & bio-fertilizers for improving soil health and its productivity. Soil Health Card provides information to farmers on soil nutrient status of their soil and recommendation on appropriate dosage of nutrients to be applied for improving soil health and its fertility. So far 22.71 crore grid based soil health cards have been distributed to farmers under the scheme. For promoting organic farming, under Mission Organic Value Chain Development in North East Region (MOVCDNER), 379 Farmer Producer Companies have been formed comprising of 1.89 lakh farmers and covering an area of 1.73 lakh ha. The restructured National Bamboo Mission (NBM) was launched during 2018-19 as a Centrally Sponsored Scheme (CSS). During the year 2022-23 the NBM has been merged with Mission for Integrated Development of Horticulture (MIDH) scheme. MIDH is being implemented in which an area of 11.26 lakh ha have been covered. Paramparagat Krishi Vikas Yojana (PKVY) was initiated to promote organic farming in the country and so far 11.80 lakh ha area has been covered.

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