

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

RAJYA SABHA
UNSTARRED QUESTION NO. 1152
TO BE ANSWERED ON THE 16/12/2022

IMPACT OF CLIMATE CHANGE ON AGRICULTURE

1152. SHRI MOHAMMED NADIMUL HAQUE:

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

- (a) the percentage of population directly and indirectly dependent on agriculture, State-wise;
- (b) the steps taken by Government to reduce the impact of unseasonal rains, rising heat waves, and land degradation on the agricultural sector, the details thereof;
- (c) whether climate change has impacted agricultural production and led to a loss of Gross Domestic Product (GDP), if so, the details thereof; and
- (d) the details of technology-led solutions adopted by Government to fight effects of climate change on agriculture?

ANSWER

MINISTER OF AGRICULTURE & FARMERS WELFARE

(SHRI NARENDRA SINGH TOMAR)

(a): According to Periodic Labour Force Survey (PLFS), 2020-21 conducted by Ministry of Statistics & Programme Implementation (MoSPI), the details of State/UT-wise workforce engaged in Agriculture Sector are given at **Annexure** .

(b) to (d): To meet the challenges of sustaining domestic food production in the face of changing climate, the Indian Council of Agricultural Research (ICAR) under Ministry of Agriculture and Farmers Welfare, Government of India 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 which will address vulnerable areas of the country and the outputs of the project will help the districts and regions prone to extreme weather conditions like droughts, floods, frost, heat waves, etc. to cope with such extremes. The salient achievements under ICAR are as follows:

- 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 2122 varieties have been released out of which 1752 are climate resilient varieties which includes 400 abiotic stress tolerant varieties and 1352 are biotic stress tolerant.
- Sixty eight location-specific climate resilient technologies have been developed and popularized for wider adoption among the farming communities.
- Agricultural contingency plans for 650 districts have been prepared and State officials have been sensitized for preparedness through 57 State-level interface meetings during the past eight years. 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.

- 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.
- Based on vulnerability assessment, climate resilient technologies are being demonstrated on farmer's fields in 151 clusters covering 446 villages.
- At present, 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.
- During the past decade, 16,958 capacity building programs were conducted throughout the country under NICRA project to educate stakeholders on various aspects of climate change and resilient technologies, covering 5,14,816 different stakeholders including farmers so as to enable wider adoption of climate resilient technologies.

Further, to deal with the impact of climate change in food grain production, the Government is implementing National Mission for Sustainable Agriculture (NMSA). NMSA is one of the Missions within the National Action Plan on Climate Change (NAPCC) which aims to evolve and implement strategies to make Indian agriculture more resilient to the changing climate and to sustain increase in production. To promote efficient use of water and fertilizer through micro-irrigation, Per Drop More Crop (PDMC) scheme is being implemented for which an amount of Rs. 16815.66 crore has been incurred with area coverage of 70.04 lakh hectare. Rainfed Area Development (RAD) scheme is being implemented to promote sustainable Integrated Farming System with an area coverage of 6.74 lakh hectare. for which an expenditure of Rs. 1511.56 crore has been incurred. 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 hectare. Mission for Integrated Development of Horticulture (MIDH) is being implemented in which so far Rs. 13,300.08 crore has been released with area coverage of 11.26 lakh hectare. 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 with 16.19 lakh farmers being benefitted. Soil health Cards/Soil Health Management Scheme is being implemented for which an expenditure of Rs. 1335.68 crore has been incurred so far for various activities for improving soil health and its fertility. Till now 22.71 crore grid based soil health cards have been distributed to farmers under the scheme.

With the help of technology interventions, the negative impact of climate change on agricultural production has been dealt with effectively. The foodgrain production has continuously increased in the country during last 5 years as given below.

(in million tonnes)

Year	2017-18	2018-19	2019-20	2020-21	2021-22
Production of food grains	285.01	285.21	297.50	310.74	315.72

Annexure

Annexure referred in reply to part (a) of Rajya Sabha Unstarred Q.No.1152 due for 16.12.2022

Percentage of usually working persons (ps+ss) engaged in agriculture sector during 2020-21 for each State/ UT

State \ UT	percentage of usually working persons (ps+ss) engaged in agriculture sector
(1)	(3)
Andhra Pradesh	48.10
Arunachal Pradesh	53.59
Assam	40.40
Bihar	49.09
Chhattisgarh	66.02
Delhi	0.25
Goa	12.21
Gujarat	45.47
Haryana	28.25
Himachal Pradesh	57.57
Jharkhand	54.94
Karnataka	46.84
Kerala	25.53
Madhya Pradesh	60.40
Maharashtra	49.36
Manipur	30.61
Meghalaya	40.17
Mizoram	41.43
Nagaland	43.26
Odisha	46.84
Punjab	25.54
Rajasthan	55.97
Sikkim	44.01
Tamil Nadu	29.64
Telangana	45.79
Tripura	39.98
Uttarakhand	42.21
Uttar Pradesh	55.09
West Bengal	37.43
Andaman & N. Island	23.81
Chandigarh	0.48
Dadra & Nagar Haveli & Daman & Diu	20.65
Jammu & Kashmir	40.94
Ladakh	37.49
Lakshadweep	24.31
Puducherry	18.67
all India	46.46
