

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
DEPARTMENT OF AGRICULTURAL RESEARCH & EDUCATION

LOK SABHA
UNSTARRED QUESTION NO. 3783
TO BE ANSWERED ON 17/03/2020

IMPACT OF CLIMATE CHANGE ON CULTIVATION

3783. SHRI JAYANT SINHA:

Will the Minister of AGRICULTURE AND FARMERS WELFARE
कृषि एवं किसान कल्याण मंत्री be pleased to state:

- (a) whether there has been research conducted on the impact of climate change on cultivation of indigenous varieties of crops and if so, the details thereof;
- (b) the details of awareness programmes held by the Government to inform farmers about the increasing incidences of flash floods and droughts; and
- (c) the details of special crop insurance and irrigation support to farmers who are affected by unexpected drought?

A N S W E R

THE MINISTER OF AGRICULTURE AND FARMERS WELFARE
कृषि एवं किसान कल्याण मंत्री (SHRI NARENDRA SINGH TOMAR)

- (a) Yes, Indian Council of Agricultural Research (ICAR) under its flagship program of National Innovations in Climate Resilient Agriculture (NICRA) has screened large number of indigenous crop varieties including local germplasm and improved crop varieties of pulses (black gram, green gram, pigeonpea, chickpea) and cereals (rice, wheat, etc.) for major abiotic stresses like drought and heat to identify superior cultivars for cultivation on farmers' fields. The details of varieties developed, their yield potentials vis-à-vis special traits and suitable areas for cultivation are given in **Annexure – 1**.

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(b) As part of the Technology Demonstration Component (TDC) of the NICRA, awareness programs are taken up in drought and flood impacted districts. A total of 8866 awareness programs were conducted on drought involving 1,71,790 farmers and 2131 programs were taken up on flood awareness involving 43,756 farmers. Further, the ICAR has established a network of 717 Krishi Vigyan Kendras (KVKs) at the district level in the country mandated technology assessment and demonstration for its application and capacity development. During 2018-19, 42,361 on farm trials (OFTs) for assessing technologies and 2,74,736 frontline demonstrations (FLDs) on various technologies were conducted. To update the knowledge and skills, 47,000 trainings were organised benefiting 13.51 lakh farmers and farm women.

(c) Government has introduced yield based Pradhan Mantri Fasal Bima Yojana (PMFBY) and weather index based Restructured Weather Based Crop Insurance Scheme (WBCIS) from Kharif 2016 to provide financial support to farmers suffering crop loss/damage arising out of natural calamities, adverse weather incidence and to stabilize the income of farmers etc. Under PMFBY, immediate relief is also provided to insured farmers in case of adverse seasonal conditions during the crop season due to which expected yield during the season is likely to be less than 50% of the Threshold Yield in the concerned insurance unit.

The Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) was launched during the year 2015-16 with the objective of 'Har Khet Ko Paani' for providing end-to-end solutions in irrigation supply chain, viz. water sources, distribution network and farm level applications. One of the components under PMKSY is watershed development which is exclusively for providing irrigation support to farmers affected by unexpected drought.

- Rice variety CR Dhan 201 is a medium duration (110-115 days), semi dwarf, non-lodging type suitable for water limited/aerobic conditions with an average productivity of 3.8 t ha⁻¹. It is also moderately resistant to leaf blast, sheath rot, stem borer, leaf folder and thrips etc. This variety was released for states of Chhattisgarh and Bihar for aerobic conditions.
- Mungbean variety IPM 205-7 (Virat) is early maturing (52-55 days), high yielding, resistant to yellow mosaic disease with an average productivity of 1.4 t ha⁻¹. It is suitable for summer cultivation for states of Punjab, Haryana, Uttar Pradesh, Karnataka, Tamil Nadu, Madhya Pradesh and Gujarat. Another short duration variety IPM302-2 has also been identified and is under cultivation.
- Drought tolerant maize hybrid CMH 08-287 with average productivity of 8.0 t ha⁻¹ is identified for cultivation in the States of Uttar Pradesh, Bihar, Jharkhand, Odisha, Andhra Pradesh, Tamil Nadu, Karnataka and Maharashtra.
- Rice variety NICRA Aerobic Dhan 1 / TRC 2015-5 (IET 26178) was identified for release by CVRC in 2019. The variety is moderately drought tolerant and is identified for aerobic conditions in Jharkhand, Chhattisgarh & Karnataka.
- Apart from these, already available varieties for drought/heat tolerance in wheat, chickpea and sesame were successfully demonstrated in various parts of the country under respective stresses which performed better with improved yields. In case of rice drought tolerant variety - Vandana and flood tolerant varieties viz., Swarna sub1, MTU-1061, MTU-1140, etc. have been demonstrated for its superiority and replaced traditional long duration varieties.
- Further, several genotypes of different crops with enhanced CO₂ fixation potential and high water and nutrient use efficiency (18), adoption to drought, flood, salinity and high temperature (20) were identified for using in the crop improvement program under climate change research.
