

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

LOK SABHA
UNSTARRED QUESTION NO. 310
TO BE ANSWERED ON 05/02/2019

**EFFECTS OF CLIMATE CHANGE AND
POLLUTION ON AGRICULTURAL CROPS**

310. SHRIMATI ANJU BALA:
SHRI L.R. SHIVARAME GOWDA:
SHRI TEJ PRATAP SINGH YADAV:

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

- (a) whether the Government is aware that the effects of climate change along with rising pollution are causing direct harm not only to human beings, but also to the agricultural crops;
- (b) if so, the details thereof including Government's reaction thereto;
- (c) whether the Government is aware of the fact that the production of wheat will decline by 6 to 23 percent by 2050 if proper steps are not taken in a timely manner;
- (d) if so, the details thereof including Government's reaction thereto; and
- (e) the measures/steps being taken by the Government for emphasis on organic farming in India?

A N S W E R

MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE AND FARMERS WELFARE
कृषि और किसान कल्याण मंत्रालय में राज्य मंत्री
(SHRI GAJENDRA SINGH SHEKHAWAT)

- (a) Yes, Madam.
- (b) Impact of climate change is expected to be more severe on agricultural crops due to rise in temperature and pollution. Efforts are made to use technologies to reduce the pollution viz. converting agricultural waste into usable concentrated fodder or bio-fuels, developing and implementing business models with private sector and communities and incentivizing crop diversification to non-paddy crops. A technology called Happy Seeder machine has been found as one of the possible technological solutions. This machine helps sowing the seeds without removing paddy straw and works well when the straw is spread evenly on the field through the straw management system.

Under the ICAR project National Innovations in Climate Resilient Agriculture (NICRA), following technological interventions as alternatives to crop residue burning are envisaged:-

- 1) Zero till sowing with Happy Seeder;
- 2) Baler for making bundles to biomass based power plants as fuel;
- 3) Straw chopper cum shredder – Zero till sowing;
- 4) Paddy combine harvester with straw management system

About 159 training programmes were taken up since 2012 on the alternative uses involving 5026 farmers in the selected villages. Nearly 178 field visits were conducted on these techniques involving 2668 farmers.

In order to curb burning and reducing winter smog pollution, a Central Sector Scheme on “Promotion of Agricultural Mechanization for In-situ Management of Crop Residue in States of Punjab, Haryana, Uttar Pradesh and NCT of Delhi” has been launched by Government. Under this scheme, financial assistance is given for purchase of straw management implements (50% of the cost of the implement for individual farmers; and 80% of the cost of implements for Custom Hiring Centre (CHC) by Co-operative Societies of farmers, groups or SHGs, Farmers Producers Organizations and Private Entrepreneurs). ICAR KVKs in Punjab, Haryana and Uttar Pradesh had made concerted efforts for creating awareness and demonstration of the crop residue management technologies in the villages through mass media.

(c) Yes Madam, climate change is projected to reduce the timely sown irrigated wheat yields by about 6% in 2020 scenario from existing levels. When late and very late sown wheat also were taken into consideration, the impacts are projected to be about 18% in 2020 and 23% in 2050 scenarios (NICRA, 2018).

(d) To reduce the impact of climate change and climatic vulnerability, interventions under NICRA project are being implemented aiming at efficient management of natural resources, crop-based interventions consisting of resilient varieties, cropping systems and planting methods. Besides, District Agricultural Contingency Plans have been developed for 648 districts to provide real time agro-advisories to farmers.

(e) Indian Council of Agricultural Research through ICAR-Indian Institute of Farming Systems Research, Modipuram operates a research scheme of Network Project on Organic Farming (NPOF) in which the number of research centres have been increased from 13 (12 States) to 20 (16 States) from 2015-16 to develop package of practices for organic production of crops in cropping and farming systems. The scheme involves 11 State Agricultural Universities, 8 ICAR institutes/centres and 1 deemed to be university. As an outcome of the research of Network Project on Organic Farming, scientific package of practices for organic production of crops in cropping systems perspective have been developed for 51 cropping systems suitable for 12 States.

Government has launched the schemes Parampragat Krishi Vikas Yojana (PKVY), Mission Organic Value Chain Development in North Eastern region (MOVCDNER) since 2015 which aims for maintaining soil health, reducing cost of cultivation, empowering farmers through institutional building and also support farmers in providing value addition and marketing linkage to their organic products and thus increasing the income of farmers. During the period 2015-16 to 2017-18, the scheme could successfully bring in 2,37,820 hectares (11,891 clusters of 20 hectares each) of area under organic farming against the target of 2 lakh hectares and 5,94, 550 farmers got benefited under the scheme. An amount of Rs.794.99 crore has been released to the States.
