

# IMPACT OF GLOBAL WARMING

27<sup>th</sup> February, 2015

RSQ 495

SHRI DARSHAN SINGH YADAV

Will the Minister of AGRICULTURE be pleased to state:

- whether Government has conducted any study/survey on the adverse impact of global warming which has manifested unusual trends such as erratic rainfall, shrinking of forest cover, rising temperature and increasing food insecurity in the country;
- if so, the details and the findings of the study along with the regions identified as most vulnerable to climate change/global warming in the country, State-wise; and
- whether Government has taken any steps/launched any scheme to mitigate the impact of global warming on agriculture sector and if so, the details thereof?

MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (**DR. SANJEEV KUMAR BALYAN**)

(a) & (b): The Indian Council of Agricultural Research (ICAR) has conducted climate change impact analysis on crop yields using crop simulation models (INFO-CROP and HAD CM3). Reduction in crop yields has been projected for irrigated maize, wheat, irrigated and rainfed rice to the extent of 18, 6, 4 and 6 percent respectively by 2020. Further, the Council has made vulnerability assessment on major food crops in different production zones to climatic variability under the 'National Initiative on Climate Resilient Agriculture' (NICRA). The study revealed that around 81.3 million ha area in arid, semi-arid and dry sub-humid regions of the country may suffer from extreme weather events. Out of 81.3 million ha, 46.0 million ha are agriculture lands, spread over 122 districts in 11 States (**Annexure**).

(c) The Indian Council of Agricultural Research (ICAR) initiated a network project on "National Initiative on Climate Resilient Agriculture" (NICRA) in 2011 aiming at enhancing climate resilience of Indian agriculture through Strategic Research, Technology Demonstration, Capacity Building and Sponsored/Competitive Grant Projects. The research on adaptation and mitigation covers crops, livestock, fisheries and natural resource management.

The Government has made operational the National Mission for Sustainable Agriculture (NMSA) from the current year (2014-15). Climate resilient interventions have been embedded and mainstreamed into Missions/Programmes/Schemes of Department of Agriculture & Cooperation (DAC) through a process of restructuring and convergence. The NMSA as a programmatic intervention aims at making agriculture more productive, sustainable, remunerative and climate resilient by promoting location specific integrated/composite farming system; soil and moisture conservation measures; comprehensive soil health management; effective water management practices and mainstreaming rainfed technologies.

## Annexure

[Part (a) & (b) to Rajya Sabha USQ No.495 for 27-02-2015]

### State-wise list of districts vulnerable to extreme weather events

Sr. No.	State	Districts
1.	Andhra Pradesh (Undivided)	Anantapur, Cuddapah, Kurnool, Mahbubnagar, Nalgonda, Nellore, Prakasam
2.	Bihar	Gaya, Jehanabad, Nawada
3.	Chattishgarh	Durg, Kabirdham
4.	Gujarat	Ahmadabad, Amreli, Anand, Banaskantha, Bhavnagar, Dahod, Gandhinagar, Jamnagar, Junagadh, Kutch, Mahesana, Panchmahals, Patan, Porbandar, Rajkot, Sabarkantha, Surendranagar, Vadodara
5.	Karnataka	Bagalkot, Bangalore -R, Belgaum, Bellary, Bijapur Chikmagalur, Chitradurga, Davanagere, Dharwad, Gadag, Gulbarga, Hassan, Haveri, Kolar, Koppal, Mandya, Raichur, Tumkur
6.	Madhya Pradesh	Barwani, Bhind, Datia, Dewas, Dhar, East Nimar, Guna, Gwalior, Indore, Jhabua, Mandsaur, Morena, Neemuch, Rajgarh,

		Ratlam, Sagar, Seoni, Shajapur, Sheopur, Shivpuri, Ujjain, West Nimar
7.	Maharashtra	Ahmednagar, Aurangabad, Bid, Dhule, Jalgaon, Jalna, Nandurbar, Nasik, Osmanabad, Pune, Sangli, Satara, Solapur
8.	Odisha	Nabarangpur
9.	Rajasthan	Ajmer, Alwar, Banswara, Baran, Barmer, Bharatpur, Bhilwara, Bikaner, Bundi, Chittaurgarh, Churu, Dausa, Dhaulpur, Dungarpur, Ganganagar, Hanumangarh, Jaipur, Jaisalmer, Jalor, Jhalawar, Jhunjhunun, Jodhpur, Karauli, Kota, Nagaur, Pali, Rajasamand, Sawai Madhopur, Sikar, Sirohi, Tonk, Udaipur
10.	Tamil Nadu	Erode, Sivaganga, Tirunelveli
11.	Uttar Pradesh	Jhansi, Hamirpur, Mahoba