GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. **1184**
TO BE ANSWERED ON THURSDAY, DECEMBER 12, 2013

STUDY ON CLIMATE CHANGE

1184. SHRI N. PEETHAMBARA KURUP:

Will the Minister of **EARTH SCIENCES** be pleased to state:

(a) whether the farmers are being intimated regarding climate changes with sufficient advance period;
(b) if so, whether any study/research is being conducted by the Union Government to predict the climate change well in advance;
(c) if so, the details thereof;
(d) if not, the reasons therefor; and
(e) the steps taken by the Government to predict the climate change well in advance so as to benefit the farmers?

ANSWER
MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(SHRI S. JAIPAL REDDY)

(a) Climate Changes operate on very longer term multi-decadal scale. Hence, most representative assessment of projected climate change scenarios are only prepared by the Intergovernmental Panel on Climate Change (IPCC).

Under the Gramin Krishi Mausam Sewa (GKMS) program of the ESSO-India Meteorological Department (IMD), the issues like climate variability (above/below normal rains; heat/cold waves etc.) and corresponding measures are intimated to the farmers through rendering appropriate Agro-meteorological Advisory Services (AAS). In addition the probable impacts of climate variability (with active and weak phases of monsoon over various parts of the country) are being communicated to the farming community. In addition, regular interaction with the farming community takes place through the Farmers' Awareness programme, roving seminars, Krishi mela, Agri-vision workshops conducted at different locations in the country under GKMS.

GKMS is rendered now on twice-weekly basis in collaboration with State Agricultural Universities (SAUs), institutions of Indian Council of Agricultural Research (ICAR) etc. Realized weather of the previous week and quantitative district level weather forecast for next 5-days in respect of rainfall, maximum temperature, minimum temperature, wind speed, wind direction, relative humidity and clouds as well as weekly cumulative rainfall forecast are provided. Further, crop specific advisories, generated in partnership with SAUs and ICAR, to help the farmers are issued and widely disseminated. The AAS of ESSO-IMD has been successful in providing the crop specific advisories to the farmers at the district/agro-climatic zone level twice weekly through different print/visual/Radio/ IT based wider dissemination media including short message service (SMS) and Interactive Voice Response Service (IVRS) facilitating for appropriate field level actions.

Further, district and agro-climatic zone scale advisories have regularly been disseminated to the farming community through various national and regional level communication mechanisms, viz. print, TV and All India Radio, web media channels, SMS and IVRS in collaboration with different public and private organizations, namely IFFCO Kisan Sanchar (IKSL) Ltd., Reuters Market Light (RML), Nokia Tools, Department of Agriculture, Government of Maharashtra, etc. At present, 18 states namely Delhi, Uttar Pradesh, Uttarakhand, Punjab, Haryana, Rajasthan, Madhya Pradesh, Chhattisgarh, Orissa, West Bengal, Gujarat, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Bihar, Jharkhand, Maharashtra and Himachal Pradesh have been covered under such services. Presently 3.4 million farmers in the country have been subscribed to SMS services.

(b) Yes Madam.

(c) The Centre for Climate Change Research (CCCR) was established in 2009 under the Earth System Science Organization (ESSO) – Indian Institute of Tropical Meteorology (IITM), Pune of the Ministry of Earth Sciences (MoES) with the mandate to address relevant to the science issues of climate change and to generate most representative climate change scenarios with reduced uncertainty. The CCCR had in fact contributed to the National Communications (NATCOM) by generating and sharing most representative and critical regional scale climate change scenarios to various organizations in India for sector specific impact including agriculture etc.

Further, India's Second NATCOM report presented to United National Framework Convention on Climate Change (UNFCCC) in 2012 had contained elements of information comprising GHG inventory and vulnerability assessment and adaptation in various sectors including Agriculture besides an overview of the National Circumstances within which the challenges of climate change are being addresses and responded to.

The Government of India has accorded high priority on research and development to cope with climate change in agriculture sector. The Prime Minister's National Action Plan on climate change has identified Agriculture as one of the eight national missions.

Currently, CCCR is leading "Co-ordinated Regional Downscaling Experiment (CORDEX)" for the South Asian region under the aegis of the World Climate Research Program (WCRP) of the World Meteorological Organisation (WMO). The CORDEX program provides an important framework for a co-ordinated set of downscaled regional climate simulations for both the historical past and future decades. Training workshops are conducted for end-users, stakeholders in the South Asian region.

(d) Does not arise.

(e) ESSO-IMD started working on to build appropriate climate information services under the Global Framework on Climate Services (GFCS) initiative of the WMO to account/assess the impacts of natural variations in the climate and its extremes on various sectors including agriculture. Currently, regular monitoring of climate variability in terms of quantifying the nature of variability is carried out through anomalies of temperature (heat/cold wave); district scale rainfall (above/below normal activity); drought monitoring through standardized precipitation index (SPI) etc. It is expected that these initiatives working in tandem with the agriculture and water resources sectors, in particular, would contribute to the improved climate resilience of our agriculture productivity in times to come.

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