Accuracy in rainfall prediction

1118. DR. ASHOK BAJPAI: Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether our rainfall prediction is accurate enough to the tune where this information can be made public for benefit of agriculture sector to plan their cropping system and management accordingly;

(b) if so, the details of the level of accuracy; and

(c) if not, the reasons therefor?

THE MINISTER OF EARTH SCIENCES (DR. HARSH VARDHAN): (a) and (b) Yes, Sir. Under National Monsoon Mission, Ministry of Earth Sciences (MoES) has implemented two state-of-the-art dynamical prediction system for short, medium and extended range forecasts and seasonal forecasts. All these initiatives have helped to improve the accuracy of forecast. An improved suite of prediction models has already been implemented operationally at India Meteorological Department (IMD) for enhanced short range forecast through assimilation of all available Indian and global satellite data in real time.

Since December, 2016, IMD used Global Forecast System (GFS) operationally to generate forecast at 12 Km. horizontal resolution in short to medium range upto 10 days. GFS assimilates conventional data as well data from satellite and weather radars for better predictions.

Additionally a 12 Km. grid scale state of the art Global Ensemble Predictions system was commissioned on 1st June, 2018 for generating operational forecast for 10 days. This system is in the process of further improvement for better accuracy of forecast.

The forecast issued by IMD are available to the public through website as well as through social media.

IMD, under "Gramin Krishi Mausam Sewa (GKMS)" scheme, issues district level weather forecast for the next five days covering all the districts in the country. Based on the weather forecast, Agromet Advisories are prepared in collaboration with 130 Agro Met Field Units (AMFUs) and communicated to the farming community through multichannel dissemination systems including SMS using mobile phones. Information technology changes the face of the awareness among the farmers for the use of weather forcast and the Agromet Advisories generated by IMD through these modern means of communication to help them in taking decision to undertake day-to-day operations. Such inputs help farmers to save their crops under adverse weather situations as well as to take the benefit of benevolent weather condition to undertake appropriate farm operations to increase yield, ultimately.

Agromet Advisories are also issued to the farmers through SMS during extreme weather events like hailstorm, cyclone, unusual rainfall etc. so as to minimize the crop damages due to inclement weather, by taking preventive action.

Based on the Extended Range Forecast (ERF), Indian Council of Agricultural Research (ICAR) in collaboration with IMD issues weekly National Agro Advisory Bulletins (AAS) bulletin for the planners at central and State levels, farmers and other organizations for preparedness to cope up with ensuing weather conditions for better crop management.

(c) Does not arise.

Steps to preserve the Himalayan Glaciers

1119. DR. VINAY P. SAHASRABUDDHE: Will the Minister of EARTH SCIENCES be pleased to state:

(a) what research has been carried out for Cryosphere Studies in Himalayas in the last three years;

(b) what are the observations and conclusions derived from the conducted research and have any suggestions been made for the steps to be taken to preserve the Himalayan Glaciers; and

(c) the number of people that have been engaged for the purpose of conducting the research in the last three years?

THE MINISTER OF EARTH SCIENCES (DR. HARSH VARDHAN): (a) The National Centre for Polar and Ocean Research (NCPOR) under the Ministry of Earth Sciences (MoES) has undertaken studies in the Western Himalaya in Chandra basin in Lahaul-Spiti (Himachal Pradesh) since 2013. A total of six glaciers namely Sutri Dhaka, Batal, Bara Shigri, Samudra Tapu, Gepang Gath and Kunzum of this basin are monitored for mass, energy and hydrological balance. NCPOR has established a highaltitude research station named ' Himansh' in Himalaya at 4000m altitude at Sutri Dhaka, a remote location in Lahaul-Spiti district of Himachal Pradesh.

(b) The studies carried out by NCPOR in Chandra basin indicates varying rates of retreat of these glaciers in the range 13 to 33m per year. The rate of melting varies from glacier to glacier depending on topography and climatic variability of the region. Mass balance measurements at Batal and Sutri Dhaka glaciers during peak ablation revealed the role of debris in influencing the ice mass losses. Debris of thickness above 2cm have reduced the melting rates up to 70%, whereas the debris cover of below 2cm thickness has