GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 3395
TO BE ANSWERED ON 13.03.2020

Rise in Temperature

3395. SHRI RAJIV PRATAP RUDY:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

(a) whether the Government has taken note of global rise in temperature especially in Indian continent during the last three years and if so, the details thereof;
(b) whether a large number of deaths due to intensive heat waves were reported from various parts of the country and if so, the details thereof, State/UT wise;
(c) whether the Government has conducted or proposes to conduct a detailed scientific study on the "heat wave" phenomenon in various parts of the country and if so, the details thereof;
(d) whether the Government has also assessed the impact of intensive heatwaves on human beings and flora and fauna of the country and if so, the details thereof; and
(e) the remedial measures taken/proposed to be taken by the Government to address the issue?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI BABUL SUPRIYO)

(a) As per the report 'United in Science: the high-level synthesis report of latest science information convened by the Science Advisory Group of the UN Climate Action Summit', published by World Meteorological Organization (WMO), a UN body, the average global temperature for 2015-2019 is currently estimated to be 1.1 degree Celsius above pre-industrial (1850-1900). According to the India Meteorological Department (IMD), in line with rising temperatures across the globe, All India mean temperature has risen by nearly 0.66° C for the period 1901 to 2017.

(b) to (e) As per the information received from the Ministry of Home Affairs, the data on deaths due to heat waves is not maintained centrally by that Ministry. However, according to the information received from Ministry of Earth Sciences, India Meteorological Department (IMD) and National Disaster Management Authority in collaboration with local health departments have started Heat Action Plan (HAP) in many parts of the country to forewarn about the heat waves and also advising action to be taken during such occasions. HAP became operational since 2013. The HAP is a comprehensive early warning system and preparedness plan for extreme heat events. The Plan presents immediate as well as longer-term actions to increase preparedness, information-sharing, and response coordination to

reduce the health impacts of extreme heat on vulnerable populations. In 2019, the Central Government had been working with 23 States and over 100 cities and districts to implement and develop HAPs in India. The 23 States are Andhra Pradesh, Arunachal Pradesh, Bihar, Chhattisgarh, Delhi, Gujarat, Goa, Haryana, Himachal Pradesh, Jharkhand, Jammu and Kashmir, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttarakhand, Uttar Pradesh and West Bengal.

Currently, the heat wave conditions and its warning is described largely in subdivision scale by National Weather Forecasting Centre (NWFC) and at the district level by state-level meteorological centers. A large category of population in urban areas is affected by heat waves. Hence, an attempt is being made to provide location-specific warning mainly for city areas as and when required.

For the betterment of heat wave forecasting, the Forecast Demonstration Project (FDP) on Heat-waves was started by IMD from 2017 summer. This has improved the monitoring and detection of heat waves as well as the accuracy of related forecast & warnings. The overall 24-hours forecast accuracy has increased from 67% in 2017 summer to 92% in 2019 while for 48 and 72-hours, forecast accuracy has increased from 49% and 30% to 85% and 62% respectively for the same period.

Further, as per the Special Report on Global Warming of 1.5°C (2018) of Intergovernmental Panel on Climate Change (IPCC), any increase in global warming is projected to affect human health, with primarily negative consequences. Urban heat islands often amplify the impacts of heat waves in cities. Risks from some vector-borne diseases, such as malaria and dengue fever, are projected to increase with warming from 1.5°C to 2°C, including potential shifts in their geographic range.

Also, as per IPCC Special Report on the Ocean and Cryosphere in a Changing Climate (2019), marine heat waves are becoming more frequent and more intense as the ocean warms. These are causing disease and mass-mortality that put, for example, coral reefs and fish populations at risk. Marine heat waves last much longer than the heat waves experienced on land, and are particularly harmful for organisms that cannot move away from areas of warm water.

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