

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO.2050
TO BE ANSWERED ON FRIDAY, FEBRUARY 12, 2021**

RISE IN TEMPERATURE OF EARTH

2050. SHRI SANGAM LAL GUPTA :

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the temperature of earth is continuing to rise;
- (b) if so, whether the temperature of earth has risen upto onedegree fahrenheit during the last hundred years;
- (c) if so, whether the Government has made any assessment of the likely impact of the said rise in temperature on human beings and if so, the details thereof;
- (d) whether the glaciers are melting and water level in the oceans has been increasing as a result of the rise in temperature and if so, the details thereof; and
- (e) whether the said rise in temperature has aggravated the risks of natural disasters and led to submergence of certain islands and if so, the details thereof?

**ANSWER
MINISTER FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(DR. HARSH VARDHAN)**

- (a) Yes, Sir. The global average near-surface air temperature has increased since pre-industrial times and the warming trend is still continuing.
- (b) Yes, Sir. The global average near-surface air temperature has increased by approximately 1 °F since pre-industrial times.
- (c) Yes, Sir. The Ministry of Earth Sciences (MoES), has recently published a Climate Change report entitled "Assessment of Climate Change over the Indian Region". The preparation of this report was led by the Center for Climate Change Research (CCCR) at the Indian Institute of Tropical Meteorology (IITM) Pune. The report highlights the effects of human-induced climate change which has resulted in consistent increase in the global average near-surface air temperature. Since the last three decades, each of them has been successively warmer at the Earth's surface than any preceding decade since 1850 wherein during the 2001–2018 period, there have been 18 of the 19 warmest years in the observational record.

- (d) Yes, Sir. The consistent warming of the planet has led to changes in the rate and patterns of precipitation, extremes, glacier melt and sea-level rise. The sea levels over the North Indian Ocean has risen at a rate of 3.3 mm year⁻¹ during 1993–2017, similar to the global mean. While thermal expansion has dominated sea-level rise in the North Indian Ocean, the major contribution to global mean sea-level rise is from glacier melt.
- (e) Yes, Sir. The said rise in temperature has aggravated the risks of natural disasters. While climate change is global, changes in climate are not expected to be uniform across the planet and therefore the risks of natural disasters also vary across the globe. For instance, Arctic temperatures are rising much faster than the global average, and rates of sea-level rise vary significantly across the world. One of the consequences of warming of the global ocean and the melting of ice and glaciers is the rise in mean sea level. Sea-level rise can exert significant stress on highly populated coastal societies and low-lying island countries around the world. Indian Ocean region is heavily populated, comprises of many low-lying islands and coastal zones and is highly rich in marine ecosystems. The regions in and around the Indian Ocean are home to roughly 2.6 billion people, which is 40% of the global population. One-third of the Indian population and the majority of the Asian population are located near coastal regions. Therefore, the rise in sea level can pose a growing challenge to population, economy, coastal infrastructures and marine ecosystems.
