

**GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA**

UNSTARRED QUESTION NO:2476

ANSWERED ON:10.03.2011

GLOBAL WARMING

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Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether abnormal weather conditions such as tsunami, excessive rains and drought in various parts of the country are the effects of global warming;
- (b) if so, the details thereof with the names of the regions most affected by the climate changes?
- (c) whether the Government has conducted any scientific study on the climatic changes caused by global warming and its adverse impact on the country;
- (d) if so, the outcome thereof;
- (e) the details of discussions held on this issue at various international forums and the agreement reached therein; and
- (f) the action plan of the Government to address the issue of climate change?

Answer

MINISTER OF STATE IN THE MINISTRY OF PLANNING, MINISTER OF STATE IN THE MINISTRY OF PARLIAMENTARY AFFAIRS, MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF STATE IN THE MINISTRY OF EARTH SCIENCES(SHRI ASHWANI KUMAR)

(a) There is no clear cause and effect established between global warming and Tsunami, excessive rains and drought. Occurrences of Tsunamis primarily originate from undersea earthquakes.

Monsoon rainfall varies on different spatial and temporal scales. Extreme rainfall events that occur at some isolated places (viz. heavy rainfall over Mumbai or in Rajasthan) are highly localized and are part of the natural variability of the Indian monsoon system itself. Although, some recent studies hint at an increasing frequency and intensity of extremes in rainfall during the past 40-50 years, their attribution to global warming is yet to be established. Moreover, the report of the Inter-governmental Panel on Climate Change (IPCC-AR4, 2007) and our country's own assessment using regional climate models indicate that the extremes rainfall events are likely to be more frequent in the later part of the 21st century in the world including India. As regards other extreme weather phenomena, there are many other reasons for their occurrence, which cannot always be related to climate change. The country has experienced 20 drought years since 1901. The drought years are given in Annexure A.

(b) Does not arise.

(c) Yes Madam.

(d) The observed trends are based on instrumental records over the past 130 years archived by the India Meteorological Department (IMD). Details of the observed and projected changes in the climate were first reported in India's initial National Communication (NATCOM) on Climate Change to the United Nations Framework Convention on Climate Change (UNFCCC) in June, 2004. This effort was coordinated by the Ministry of Environment & Forests (MoEF), who are now working on the second NATCOM report.

i) Although, the monsoon rainfall at all India level does not show any trend but on regional scale areas of increasing trend is discerned. It is not clear if this increasing trend in the heavy rainfall events is attributable to global warming.

ii) Mean annual surface air temperatures show a significant warming of about 0.5 degree C/100 years during the last century and recent data indicates a substantial acceleration of this warming after the 1990's and is comparable to the global warming trend. The year 2006 was the warmest year on record since 1901.

iii) No significant long-term trends are reported in the frequencies of large-scale droughts or floods in the summer monsoon season.

vi)The total frequency of cyclonic storms that form over the Bay of Bengal has remained almost constant.

v) Analysis of past tide gauge records for the Indian coastline regions gives an estimate of sea level rise of 1.30 mm/year.

vi) There is evidence that glaciers in Himalayas are receding at a rapid pace, however it is unclear as to how much of this recession is attributable to climate change, as glacial retreat is also due to natural long-term inter-glacial cycles.

Under the aegis of the Indian Network of Climate Change Assessment (INCCA), a Report, entitled Climate Change & India: A 4X4 Assessment – A Sectoral and Regional Assessment of Impact of Climate Change in 2030s, has been released by the Government during November, 2010. Studies were undertaken in four climate sensitive regions of the country, viz. Himalayan Region, Western Ghats, North Eastern Region, Coastal Areas, assessed impacts in the four sectors viz. agriculture, water, forests and health, have been analysed.

(e) India is engaged in the process of Climate Change negotiations and participating in the Conference of Parties (COP) to the UNFCCC meetings. COP-8 was held in New Delhi. The twelfth Conference of Parties to the UNFCCC and the second Meeting of Parties to the Kyoto Protocol took place at Nairobi in December 2006. The continuing multilateral negotiations since COP-14 held in Poznan, Poland in December, 2008 and COP-15 in Copenhagen, Denmark during December, 2009 and understanding reached in COP-16 at Cancun, Mexico during December, 2010 are essentially to enhance long-term cooperation to deal with the adverse impacts of Climate Change under the Bali Action Plan (BAP) under the Cancun Agreement. The elements of the Cancun Agreement include:

i) Industrialised country targets are officially recognized under the multi-lateral process and these countries are to develop low-carbon development plans and strategies and assess how best to meet them, including through market mechanisms, and to report their inventories annually.

ii) Developing country actions to reduce emissions are officially recognized under the multi-lateral process. A registry is to be set up to record and match developing country mitigation actions to finance and technology support from industrialised countries. Developing countries are to publish progress reports every two years.

iii) Parties meeting under the Kyoto Protocol agree to continue negotiations with the aim of completing their work and ensuring there is no gap between the first and second commitment (up to 2012 and beyond) periods of the treaty.

iv) A total of \$30 billion in fast start finance from industrialized countries to support climate action in the developing world up to 2012 and the intention to rise to \$100 billion in long term funds by 2020 is included in the decisions.

v) In the field of climate finance, a process to design a Green Climate Fund under the COP, with a board with equal representation from developed and developing countries, is established.

vi) A new Cancun Adaptation Framework is established to allow better planning and implementation of adaptation projects in developing countries through increased financial and technical support, including a clear process for continuing work on loss and damage.

vii) Governments agree to boost action to curb emissions from deforestation and forest degradation in developing countries with technological and financial support.

viii) Parties have established a technology mechanism with a Technology Executive Committee and Climate Technology Centre and Network to increase technology cooperation to support action on adaptation and mitigation.

(f) The Government has undertaken the following steps in the area of Climate Change:

(a) Constituted an Expert Committee on Climate Change impacts, which is headed by the Principal Scientific Advisor to the Government of India.

(b) Prime Minister's Council on Climate Change has been constituted to coordinate national action for assessment, adaptation and mitigation of climate change.

(c) Launched a high-priority Programme to address the Science issues of Global and Regional Climate Change (GRCC) with a well-equipped state-of-the-art Center for Climate Change Research (CCCR) at Indian Institute of Tropical Meteorology (IITM), Pune for inter-disciplinary research and training in the area of science of climate change.

(d) Under the National Action Plan on Climate Change, it is proposed to establish a permanent institutional mechanism that will play a development and coordination role. The National Action Plan on Climate Change (NAPCC) was released by the Prime Minister on 30th June 2008.

(e) The National Action plan outlines eight missions in specific areas of Solar Energy, Enhanced Energy Efficiency, Sustainable Habitat, Water, Sustaining the Himalayan Eco-system, Green India, Sustainable Agriculture and Strategic knowledge for Climate Change. Eight National Missions form the core of the National Action Plan, representing multipronged, long term and integrated strategies for achieving key goals in the context of climate change.