

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION No. 5806
TO BE ANSWERED ON WEDNESDAY, APRIL 29, 2015**

STUDY ON GLOBAL WARMING

**5806. SHRI SADASHIV LOKHANDE:
SHRI PREM SINGH CHANDUMAJRA**

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) Whether any scientific study on the impact of global warming has been conducted;**
- (b) Whether various parts of the country have witnessed such extreme conditions of climate such as tsunami, excessive rains and drought;**
- (c) If so, the details thereof and the reasons therefor along with the areas most affected by climate change; and**
- (d) the details of international deliberations on this issue, various aspects concerning its prevention, and consensus arrived at various for a address the issue?**

ANSWER

**MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND
MINISTRY OF EARTH SCIENCES
(SHRI Y.S.CHOWDARY)**

- (a) Yes Madam.**
- (b-c) There is no clear cause and effect between global warming and extreme climate condition relationship such as 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 and our country's own assessment using regional climate models indicate that the extreme rainfall events are likely to be more frequent in the later part of the 21st century all over 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. 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 as to if this increasing trend in the heavy rainfall events is attributable to global warming. Summary of the observed long term changes so far include:

- (i) Mean annual surface air temperatures show a significant warming of about 0.5 degree C/100 years during the last century.**
 - (ii) No significant long-term trends are reported in the frequencies of large-scale droughts or floods in the summer monsoon season.**
 - (iii) The average seasonal rainfall over India has shown decline in the last five decades, especially after 1970, that is not found to be statistically significant. Further, over core monsoon zone, the contribution from increasing heavy rain events is offset by decreasing moderate events and hence on the long term the change is not appreciable.**
 - (iv) Studies were undertaken in four climate sensitive regions of the country, viz., Himalayan Region, Western Ghats, North Eastern Region, Coastal Areas to assess the possible impacts on the four sectors viz., agriculture, water, forests and health. 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 under the aegis of the Indian Network of Climate Change Assessment (INCCA).**
- (d) India is engaged in 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) in terms of the Cancun Agreement. The following elements of the Cancun Agreement address the various aspects concerning prevention of global warming:**
- 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 industrialized 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 \$30billion in fast start finance from industrialized countries to support climate action in the developing world up to 2012 and the intension 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.**
