

**GOVERNMENT OF INDIA  
EARTH SCIENCES  
LOK SABHA**

UNSTARRED QUESTION NO:1624

ANSWERED ON:09.03.2007

CLIMATE CHANGES

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**Will the Minister of EARTH SCIENCES be pleased to state:**

- (a) whether the Government is aware of the growing climate changes in the globes having its adverse effect in India ;
- (b) if so, the reaction of the Government thereon ;
- (c) whether any National Programme is proposed to be launched for the mitigation of climatic changes ;
- (d) if so, the details thereof alongwith total Investment proposed in this programme ;
- (e) whether there is any proposal to get assistance from international organizations; and
- (f) if so, the details thereof ?

**Answer**

MINISTER OF SCIENCE & TECHNOLOGY AND MINISTER OF EARTH SCIENCES (SHRI KAPIL SIBAL)

(a) Yes Sir, the government is very much aware of the climate change issue and its potential impacts on the global and regional climate in general. Efforts are on to assess the exact nature of the impacts on the Indian climate and thereby on other sectors. Studies conducted by our scientists on India conclude

(i) The average temperature rise from 1900 to 1970 is 0.1 Å°C/decade but from 1970 to 2006 is 0.2 Å°C/decade.

(ii) There is no significant impact of Indian industrial activity on global warming or Indian warming so far.

(iii) There is no significant change in Indian Rainfall over the last 100 years.

(iv) The modeling studies by Indian scientists indicate that inspite of global warming, there would not be significant rainfall change upto 2050. Then onwards, the rainfall may slightly increase.

(b) The newly formed Ministry of Earth Sciences has taken serious note of the problem of Climate Change and is initiating immediate research programs to assess the exact nature of global warming on Indian climate and to quantify the uncertainties associated with the projected future changes by

(1) undertaking extensive field observational programs for better estimation of green house gas emissions (having warming effects on the climate) and the aerosols (having a cooling effect leading to a dampening of warming).

(2) by strengthening the climate modeling efforts to gain better insights in to the possible impacts and for the better quantification of uncertainties in the projected climate variations so that the policy makers can be well informed of the expected changes. It may be mentioned here that the Ministry of Environment & Forests has undertaken various programs concerning the assessment of regional climate change and associated impacts on various sectors such as water resources, agriculture etc. during the past 4-5 years.

(c) Even though global mean temperature has shown an increasing trend, the Indian monsoon rainfall has remained stable over the past century. The most important impact of climate change is expected to be on the changes in the extreme weather events leading to more frequent flood/ drought conditions. In this respect, the constitution of the Disaster Management Authority under the chairmanship of our Hon. Prime Minister is one such effort in planning advance warning and mitigatory steps. The Ministry of Earth Sciences (MoES) is preparing a comprehensive Science plan for studying the climate change impacts on the monsoonal climate over India. One of MoES institutions, Indian Institute of Tropical Meteorology is taking a national lead in coming up with such Science plan involving several R&D institutions in India. This will be a two pronged approach covering both observational and modeling studies.

(d) The Science plan under preparation will lead to an action plan and the exact budgetary requirements will be worked out at that stage. The Ministry is also in the process of enhancing the network of meteorological observations in India and also strengthening the computational facilities by way of acquiring high-performance computers needed for climate modeling studies.

(e)&(f) Several research groups working in the areas of Climate Change and impacts have been collaborating with various international

organizations. It may be mentioned here that the Ministry of Environment and Forests has co-ordinated a program under the Indo-UK joint collaboration on Climate Change which involve several leading research groups in India and UK covering many aspects of climate change assessment and impact analysis. There are parallel efforts being made by international organizations to conduct several observational programs to study the aerosols over the South Asian region as part of the international program on the Atmospheric Brown Cloud. Several Indian institutions are expected to participate in such a field campaign when it is finalized.