

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 4442
TO BE ANSWERED ON 19.07.2019

Study on Climate Change

4442. DR. SANJAY JAISWAL:

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

- (a) whether the Ministry has allocated funds for the study on climate change and its impact on India; and
- (b) if so, the details thereof along with the results of the studies that were done so far?

ANSWER

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

(a) and (b) India is a Party to the United Nations Framework Convention on Climate Change (UNFCCC). In fulfillment of its commitment, India has submitted Initial National Communication (INC) in 2004 and Second National Communication (SNC) in 2012 to the UNFCCC. As part of the National Communications, the Ministry conducted studies on impact of climate change in India which are summarized in the 'Vulnerability Assessment and Adaptation' chapters. A total budget of US \$ 2 million and US \$ 3.5 million were allocated by Global Environment Facility for preparation of INC and SNC respectively.

For the SNC, climate change scenarios were analysed using high-resolution regional climate model. Simulations for 2020s, 2050s and 2080s indicate an all-round warming for Indian subcontinent. Impact of climate change and climate variability on the water resources are likely to affect irrigated agriculture, installed power capacity, environmental flows in the dry season and wet season.

The impact of climate change on forests in India was assessed based on the changes in area under different forest types, shifts in boundary of forest types and Net Primary Productivity (NPP). Climate change will be an additional stress, as forests in India are subjected to over extraction, insect outbreaks, livestock grazing, forest fires and other anthropogenic pressures.

For studying the impact on agriculture a combination of field studies and simulation models were carried out. The impact of climate change on food grains, plantation crops, vegetables and fruits is variable. A rise in concentration of atmospheric carbon dioxide (CO₂) will lead to enhanced yields of wheat, chickpea, green gram, pigeon pea and soybean. In most of

the crops, this was accompanied by a small reduction in the protein content. In plantation crops like coconut, areca nut and cocoa increased CO₂ led to higher biomass. Increased temperature and altered pattern of precipitation might decrease cotton yield in northern India with greater extent than the southern region.

Climate plays key role in propagation of diseases either impacting directly for example by heat strokes or indirectly for example by diarrheal risk from water contamination or alteration of important vector species like mosquitoes. With the projected increase in the surface temperature, the human health impact is likely to escalate for malaria with respect to their virulence and spread to areas where they have not manifested so far.
