

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FORESTS AND CLIMATE CHANGE

RAJYA SABHA
UNSTARRED QUESTION NO. 48
TO BE ANSWERED ON 19.07.2021

Effect of climate change on ecosystem

48. DR. KIRODI LAL MEENA:

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

- (a) whether any study has been conducted by Government on the effect of climate change on various ecosystem including agriculture sector during the last two years;
- (b) if so, the details thereof;
- (c) whether Government has formulated any action plan in collaboration with global agencies to fight with the ill effects of climate change; and
- (d) if so, the details thereof and the characteristics of such action plan?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI ASHWINI KUMAR CHOUBEY)

(a) and (b): Climate Change is expected to impact the diverse ecosystems of the country in different ways. Studies commissioned by the Ministry during the last 2 years stand embodied in India's third biennial update report submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in February 2021. As per the report, the studies on forests and biodiversity indicate that many natural ecosystems in the country are vulnerable to ongoing and future climate change. Modelling studies at the national level also indicate that 18 to 28 percent of forested areas are expected to be impacted by projected climate change under different emission scenarios in the short (2030s) and long (2080s) term. The dominant tree species in central Indian forests, Teak (*Tectona grandis*) and Sal (*Shorea robusta*) will be more sensitive to change in temperature than rainfall, with Sal being more sensitive to minimum temperature and Teak to change in maximum temperature. The studies also show that Indian forests still retain considerable potential for carbon sequestration, while the dominant forest type in the country, namely, the tropical dry forest has considerable resilience to store carbon and maintain diversity in the face of climate-related disturbances such as drought and fire. The studies have also brought out the vulnerability of the natural grasslands of the country from climate change.

Regarding the impact of climate change on agriculture, the Indian Council of Agricultural Research (ICAR) has conducted the impact analysis and its effect on the agriculture sector under the National Innovations in Climate Resilient Agriculture (NICRA) project. Variable impact of climate change has been projected on production of particular crops, including rice, wheat, maize, groundnut, chickpea and potato. Under NICRA, attempts are being made to develop new climate-resilient varieties of various crops, including heat and drought tolerant wheat, flood tolerant rice, drought tolerant pulses, and water logging and high temperature tolerant tomato.

(c) and (d): Climate change is a global collective action problem and requires the cooperation of all nations based on the principle of equity and in accordance with common but differentiated responsibilities and respective capabilities. India is a Party to the United Nations Framework Convention on Climate Change (UNFCCC), its Kyoto Protocol (KP) and the Paris Agreement (PA).

In a spirit of multilateralism, and with emissions well below world average by any measure, India continues to proactively address climate change through numerous domestic and international actions. Government is implementing National Action Plan on Climate Change (NAPCC) which provides an overarching policy framework for climate actions in the country with eight Missions: (i) National Solar Mission, (ii) National Mission on Enhanced Energy Efficiency, (iii) National Water Mission, (iv) National Mission on Sustainable Habitat, (v) National Mission on Sustaining Himalayan Ecosystem, (vi) National Green India Mission, (vii) National Mission on Sustainable Agriculture and (viii) National Mission on Strategic Knowledge on Climate Change. To support the objectives of NAPCC, 33 States and Union Territories have prepared their State Action Plan on Climate Change (SAPCC) to address State specific actions.

In addition, the Government has also established the National Adaptation Fund for Climate Change (NAFCC) to support climate adaptation actions of States and Union Territories in the country. Hence, India's mitigation and adaptation efforts are ambitious and cover major sectors of the economy. On the international front, India is hosting and supporting the International Solar Alliance (ISA) and the Coalition for Disaster Resilient Infrastructure (CDRI).
