

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

RAJYA SABHA
UNSTARRED QUESTION NO. 2279
TO BE ANSWERED ON 09.08.2021

Effects of Global Warming

2279. DR. KIRODI LAL MEENA:

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

- (a) whether abnormal weather conditions like tsunami, heavy rainfall and drought are effects of global warming;
- (b) if so, details thereof along with names of worst affected areas;
- (c) whether Government has conducted any scientific study/analysis on climate change due to global warming and its adverse effect on the country's environment and if so, the results and outcome thereof;
- (d) details of funds allocated by Government for study on climate change and its impact; and
- (e) details of discussion held and agreements signed on the issue at various international forums in recent years along with action plan to address the issue?

ANSWER

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

(a) and (b) There is no established study for India providing a quantified contribution of climate change triggering natural disasters. While many studies monitor disasters such as drought, floods and breaking of glaciers, the science of attribution of these changes particularly to climate change is far more complex and currently an evolving subject.

(c) A scientific study to assess the impact of climate change has been conducted and a report titled "Climate Change and India: A 4X4 Assessment - A Sectoral and Regional Analysis for 2030s" was published by the Ministry of Environment, Forest and Climate Change. The study assessed impacts of climate change on four key sectors of Indian economy, namely, agriculture, water, forests and human health in four climate sensitive regions of India - the Himalayan region, the Western Ghats, the Coastal region and the North-Eastern region.

Further, as part of the Second National Communication (SNC) submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in 2012, MoEF&CC conducted studies on impact of climate change in India which are summarized in the 'Vulnerability Assessment and Adaptation' chapters. The 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.

(d) The details of the financial support provided by MoEF&CC for research on climate change during the period from 2014-15 to 2020-21 is given at Annexure-I.

(e) UNFCCC is the intergovernmental forum for addressing the global response to climate change. The UNFCCC came into force in 1994 with the ultimate objective of stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Thereafter, the Kyoto Protocol, under the UNFCCC, entered into force in 2005 with binding emission reduction targets for 37 industrialized countries and economies in transition and the European Union. Subsequently, Paris Agreement was adopted in 2015 to enhance the implementation of the Convention with the aim to holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels.

India is a Party to the UNFCCC, its Kyoto Protocol and the Paris Agreement. Under the Paris Agreement, India submitted its Nationally Determined Contribution (NDC) to address the concerns of climate change in the context of sustainable development and efforts to eradicate poverty. India's NDC comprises eight goals for 2021-2030, including (i) to reduce the emissions intensity of its GDP by 33 to 35 per cent by 2030 from 2005 level (ii) to achieve about 40 per cent cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030 with help of the transfer of technology and low-cost international finance; and (iii) to create an additional carbon sink of 2.5 to 3 billion tonne of CO₂ equivalent through additional forest and tree cover by 2030. In order to coordinate and oversee the implementation of the Paris Agreement, Government has set up an Apex Committee for Implementation of Paris Agreement (AIPA).

Annexure-I

Annexure-I referred to in reply to part (d) of Rajya Sabha Unstarred Question no. 2279 due for 09.08.2021 regarding 'Effects of Global Warming' raised by Dr.Kirodi Lal Meena

Details of financial support provided by MoEF&CC for research on climate change during the period from 2014-15 to 2020-21

Financial Year	Name of the Institutions to whom fund released	Funds Released (in Rupees)
2014-15	The Energy & Research Institute, Delhi	₹ 1,830,000
	Integrated Research & Action for Development, New Delhi	₹ 1,800,000
	Institute of Economic Growth, New Delhi	₹ 1,298,000
	National Law School of India University, Karnataka	₹ 2,713,736
	Total	₹ 7,641,736
2015-16	Indian Institute of Tropical Meteorology-Pune, Maharashtra	₹ 2,500,000
	Institute of Economic Growth, New Delhi	₹ 1,730,000
	Integrated Research and Action for Development (IRADe)	₹ 2,400,000
	The Energy and Resources Institute-[TERI], New Delhi	₹ 2,400,000
	National Law School of India University, Karnataka	₹ 606,744
	The Energy and Resources Institute-[TERI], New Delhi	₹ 6,201,563
	Tata Institute of Social Sciences-Mumbai, Maharashtra	₹ 373,878
	Centre for Environment Education, Gujarat	₹ 626,800
	SuganthiDevadson Marine Research Institute, Tamil Nadu	₹ 4,000,000
	The Energy and Resources Institute, New Delhi	₹ 3,250,000
	Forest Survey Of India, Uttarakhand	₹ 900,000
	Total	₹ 24,988,985
2016-17	Indian Institute of Technology Bombay, Maharashtra	₹ 6,400,000
	Indian Institute of Technology Kanpur, Uttar Pradesh	₹ 3,000,000
	Indian Institute of Technology Delhi, New Delhi	₹ 3,000,000
	Indian Institute Of Science Education & Research, Bhopal, Madhya Pradesh	₹ 5,000,000
	Indian Institute of Technology Chennai, Tamil Nadu	₹ 1,500,000
	National Physical Laboratory New Delhi	₹ 1,500,000
	CSIR Fourth Paradigm Institute, Karnataka	₹ 1,500,000
	Indian Institute of Technology Kharagpur, West Bengal	₹ 1,500,000

Financial Year	Name of the Institutions to whom fund released	Funds Released (in Rupees)
	Indian Institute of Science Education and Research, Chandigarh	₹ 1,500,000
	Bose Institute Kolkata, West Bengal	₹ 1,500,000
	University of Kashmir	₹ 1,500,000
	Birla Institute of Technology, Mesra, Ranchi, Jharkhand	₹ 1,500,000
	Indian Institute of Technology, Hyderabad	₹ 1,500,000
	North-East Institute of Science & Technology, Assam	₹ 1,500,000
	Environment Planning & Coordination Organisation (EPCO), Madhya Pradesh	₹ 21,680,000
	Integrated Research and Action for Development [IRADe], New Delhi	₹ 1,800,000
	The Energy and Resources Institute-[TERI], New Delhi	₹ 1,830,000
	Indian Institute of Technology Bombay, Maharashtra	₹ 30,000,000
	Indian Institute of Technology Kanpur, Uttar Pradesh	₹ 27,500,000
	Indian Institute of Technology Delhi, New Delhi	₹ 30,000,000
	Indian Institute Of Science Education & Research, Bhopal, Madhya Pradesh	₹ 27,500,000
	Indian Institute of Technology Chennai, Tamil Nadu	₹ 5,000,000
	National Physical Laboratory New Delhi	₹ 5,000,000
	CSIR Fourth Paradigm Institute, Karnataka	₹ 2,500,000
	Indian Institute of Technology Kharagpur, West Bengal	₹ 5,000,000
	Indian Institute of Science Education and Research (IISER), Mohali, Chandigarh	₹ 2,500,000
	Bose Institute Kolkata, West Bengal	₹ 2,500,000
	University of Kashmir	₹ 2,500,000
	Birla Institute of Technology, Mesra, Ranchi, Jharkhand	₹ 2,500,000
	Indian Institute of Technology, Hyderabad	₹ 2,500,000
	North-East Institute of Science & Technology, Assam	₹ 2,500,000
	Indian Institute of Tropical Meteorology-Pune, Maharashtra	₹ 2,500,000
	Total	₹ 207,710,000
2017-18	Indian Institute of Technology Bombay, Maharashtra	₹ 6,919,000
	Indian Institute of Technology Kanpur, Uttar Pradesh	₹ 27,439,000
	Indian Institute of Technology Delhi, New Delhi	₹ 21,379,000

Financial Year	Name of the Institutions to whom fund released	Funds Released (in Rupees)
	Indian Institute of Science Education & Research, Bhopal, Madhya Pradesh	₹ 26,719,000
	Bose Institute Kolkata, West Bengal	₹ 964,000
	University of Kashmir	₹ 964,000
	Birla Institute of Technology, Mesra, Ranchi, Jharkhand	₹ 964,000
	Indian Institute of Technology, Hyderabad	₹ 964,000
	Indian Institute of Tropical Meteorology-Pune, Maharashtra	₹ 964,000
	North-East Institute of Science & Technology, Assam	₹ 964,000
	Indian Institute of Technology Chennai, Tamil Nadu	₹ 4,904,000
	National Physical Laboratory New Delhi	₹ 3,204,000
	Indian Institute of Science Education and Research (IISER), Mohali, Chandigarh	₹ 964,000
	Indian Institute of Technology Bombay, Maharashtra	₹ 7,181,981
	Indian Institute of Technology Kanpur, Uttar Pradesh	₹ 6,466,829
	Indian Institute of Science Education and Research (IISER), Mohali, Chandigarh	₹ 1,823,880
	Indian Institute of Science Education & Research, Bhopal, Madhya Pradesh	₹ 5,207,947
	Bose Institute Kolkata, West Bengal	₹ 1,823,880
	University of Kashmir	₹ 1,823,880
	Birla Institute of Technology, Mesra, Ranchi, Jharkhand	₹ 1,823,880
	Indian Institute of Technology Chennai, Tamil Nadu	₹ 6,229,519
	National Physical Laboratory New Delhi	₹ 3,796,267
	Indian Institute of Technology, Hyderabad	₹ 1,632,568
	Indian Institute of Tropical Meteorology-Pune, Maharashtra	₹ 632,568
	North-East Institute of Science & Technology, Assam	₹ 1,632,568
	CSIR Fourth Paradigm Institute, Karnataka	₹ 500,000
	Indian Institute of Technology Kharagpur, West Bengal	₹ 800,000
	SuganthiDevadson Marine Research Institute, Tamil Nadu	₹ 2,288,000
	Total	₹ 140,975,767
2018-19	SuganthiDevadson Marine Research Institute, Tamil Nadu	₹ 268,689

Financial Year	Name of the Institutions to whom fund released	Funds Released (in Rupees)
	Environment Planning & Coordination Organisation, Madhya Pradesh	₹ 20,000,000
	Indian Institute of Technology Bombay, Maharashtra	₹ 28,500,000
	Indian Institute of Technology Kanpur, Uttar Pradesh	₹ 10,000,000
	Indian Institute of Technology Delhi, New Delhi	₹ 19,000,000
	Indian Institute of Science Education & Research, Bhopal, Madhya Pradesh	₹ 3,500,000
	Indian Institute of Technology, Hyderabad	₹ 640,000
	North-East Institute of Science & Technology, Assam	₹ 1,500,000
	Indian Institute of Technology Chennai, Tamil Nadu	₹ 7,000,000
	National Physical Laboratory New Delhi	₹ 5,000,000
	CSIR Fourth Paradigm Institute, Karnataka	₹ 2,000,000
	Indian Institute of Technology Kharagpur, West Bengal	₹ 3,000,000
	Total	₹ 100,408,689
2019-20	Indian Institute of Technology Bombay, Maharashtra	₹ 11,558,000
	Indian Institute of Science Bangalore, Karnataka	₹ 5,000,000
	Indian Institute of Science Bangalore, Karnataka	₹ 55,000,000
	Total	₹ 71,558,000
2020-21	Nil	