

**GOVERNMENT OF INDIA  
MINISTRY OF EARTH SCIENCES  
RAJYA SABHA  
UNSTARRED QUESTION NO. 829  
TO BE ANSWERED ON TUESDAY, 27<sup>th</sup> JULY, 2021**

**DEVELOPMENT OF INDIGENEOUS CLIMATE MODEL**

**829. SHRI SUJEET KUMAR:**

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the Government has developed an indigenous climate model to predict the impact of climate change on monsoon in the country, if so, the details thereof?

**ANSWER  
THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR  
MINISTRY OF SCIENCE AND TECHNOLOGY  
AND EARTH SCIENCES  
(DR. JITENDRA SINGH)**

- (a) Yes Sir. A state-of-the-art Earth System Model (ESM) has been developed at the Centre for Climate Change Research (CCCR), Indian Institute of Tropical Meteorology (IITM) under the Ministry of Earth Sciences (MoES). This Earth System Model, known as the IITM-ESM, is the first climate model from South Asia that has contributed to the Intergovernmental Panel on Climate Change (IPCC) sixth assessment report (AR6) and participated in the Coupled Model Inter-comparison Project –Phase 6 (CMIP6) experiments.

The IITM-ESM has capabilities to address key questions concerning the science of climate change, including reliable projections of the global and regional climate, Indian monsoon, hydrological cycle, sea-level changes, tropical ocean-atmosphere processes in a changing climate.

The model development was done by the scientists at IITM Pune in collaboration with international research community. This model is a state-of-the-art climate model with components of atmosphere, ocean including deep ocean circulation, Arctic and Antarctic sea-ice and ocean biogeochemistry.