

National monsoon mission

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In News: National Council of Applied Economic Research (NCAER) has released a report on Estimating the economic benefits of Investment in Monsoon Mission and High Performance Computing Facilities.

About National Monsoon Mission

- The Ministry of Earth sciences (MoES) launched the “Monsoon Mission” in 2012.
- It aims to develop a dynamical prediction framework and to improve monsoon prediction skills.
- The four MoES institutes partnered for NMM are:
 - Indian Institute of Tropical Meteorology (IITM), Pune;
 - National Centre for Medium Range Weather Forecasting (NCMRWF), Noida;
 - India Meteorological Department (IMD); and
 - Indian National Centre for Ocean Information Services (INCOIS)
- The monsoon mission was focused on the following major objectives:
 - To build a working partnership between the Academic and Research & Development Organizations, both national and international and the MoES to improve the monsoon forecast skill for the entire country.
 - To set up a state-of-the-art dynamical modelling framework for improving prediction skill of
 - (a) Seasonal and Extended range predictions and
 - (b) Short and Medium range (up to two weeks) prediction.
- The IITM is collaborating with National Centers for Environmental Prediction (NCEP), USA and other MoES

institutes and is working with the Climate Forecast System (CFS) model.

High Performance Computing System

- The increased resolution of the NMM dynamic models is made possible through timely investments made by MoES for augmentation of High-Performance Computing (HPC) capability at its institutes from 1 PetaFlop to 10 PetaFlops.
- In order to cater to the needs of modelling activities of Monsoon Mission, an additional 6.8 peta flops-scale HPC facilities are established at two of the MoES institutes:
 - “Pratyush” at Indian Institute of Tropical Meteorology (IITM), Pune with computing capacity of 4 peta-flops; and
 - “Mihir” at the National Centre for Medium Range Weather Forecast (NCMRWF), Noida with a computing capacity of 2.8 peta-flops.

Coupled Forecast Model (CFS)

- The American model called “Climate Forecast System” (CFS) is developed by National Centres for Environmental Prediction (NCEP), USA.
- CFS is a coupled ocean-atmosphere modeling system that combines data from ocean, atmosphere and land for providing long range forecasting (seasonal prediction of Indian Monsoon).

The National Council of Applied Economic Research (NCAER)

- One of India’s oldest and largest independent, non-profit, economic and social research institutes.
- It undertakes grant-funded research and commissioned studies for governments and industry, and is one of the few think tanks globally that also collects primary data.

- NCAER has set up a National Data Innovation Centre (NDIC) to serve as a laboratory for experiments in data collection, interfacing with partners in think tanks, Indian and international universities, and government. NDIC forms an important core of NCAER's long-standing data collection activities.
- NCAER, has partnered with the Universities of Maryland and Michigan for the NDIC. Initial funding for NDIC is being provided by the Bill & Melinda Gates Foundation