# Ministry of Earth Sciences - Year End Review

## The Structural Aspects:

\n\n

\n
- The Government of India, constituted the Ministry of Earth Sciences (MoES) in 2006 and brought under its administrative control, the
\n

\n\n

\n
  - India Meteorological Department (IMD)
\n
  - Indian Institute of Tropical Meteorology (IITM)
\n
  - National Centre for Medium Range Weather Forecasting (NCMRWF)
\n

\n\n

\n
- The Government also approved the setting up of Earth Commission on the pattern of Space Commission and Atomic Energy Commission.
\n

\n\n

## Major Programs of the Ministry:

\n\n

### Ahmadabad - Air Quality & Weather Monitoring Stations

\n\n

\n
- An integrated early warning installation - “System for Air Quality and Weather Forecasting, and Research” (SAFAR) was opened in May 2017 at Ahmadabad.
\n
- Alongside, a health action plan "Ahmadabad- AIR (Air Information and Response)", was launched with a lead from ‘Ahmadabad Municipal

Corporation’.
\n

\n\n

### Nellore - Open sea cage culture

\n\n

\n
- A project for the establishment of a “Marine Finfish Hatchery and Test Facility for Ballast Water Treatment Technologies’ were commenced in April, 2017, at the Nellore sea front facility.
\n
- These facilities will be further developed by National Institute of Ocean Technology, an autonomous institute under the Ministry.
\n

\n\n

### Pondicherry - Beach Restoration

\n\n

\n
- The coastline of Pondicherry and Tamil Nadu has suffered from severe coastal erosion due to natural and anthropogenic activities.
\n
- When short term measures like Seawalls and Groin field were attempted by the Pondicherry government the erosion problem shifted further north, with increased intensity.
\n
- Hence, with assistance from the Ministry of Earth Sciences, a detailed shoreline management plan was prepared using satellite data and process based measurements.
\n
- As part of this plan Puducherry government has implemented the beach nourishment scheme along a small section of about 500m using dredged sand from the harbour mouth.
\n
- The nourishment resulted in gaining of beach to an extent of 60m near Puducherry Light House and Puducherry New Pier.
\n

\n\n

### Koyna - Drilling at the Intra-Plate Seismic Zone

\n\n

\n
- Scientific deep drilling of the Koyna (Maharashtra) pilot borehole to a depth of 3 km and the acquisition of downhole geophysical data were completed.
\n
- The borehole passes through the 1.25 km thick succession of Deccan basalt flows and 1.75 km into the underlying granite-gneiss basement.
\n
- This is the deepest borehole ever drilled through crystalline rock formations in the country.
\n
- Cuttings were collected at 5 m intervals in basalt and 3 m intervals in basement rock along with some other discrete sections.
\n

\n\n

### Kochi - ST Radar at and Doppler Weather Radar

\n\n

\n
- “Stratosphere-Troposphere (ST) Radar Facility” was opened at the “Advanced Centre for Atmospheric Radar Research” at the Cochin University of Science and Technology (CUSAT) in July 2017.
\n
- The facility will aid monitor atmospheric wind conditions across altitudes up to 20 km and beyond.
\n
- The research has applications in meteorology, cloud physics, thunderstorms, convections, atmospheric electricity and climate change.
\n
- Also, state-of-the-art indigenous S-Band Doppler weather radar, which was made with support from ISRO and Bharat Electronics, was inaugurated.
\n
- It is capable of predicting weather events such as cyclone occurring in 500-km radius from Kochi with increased accuracy.
\n

\n\n

### Lakshadweep - Sea Water De-salination plants

\n\n

\n
- The Earth Science Ministry through its constituent unit, the National Institute of Ocean Technology (NIOT) has developed indigenized technologies for producing clean drinking water from the ocean.

\n
- Currently, there are three desalination plants operational at Kavaratti, Agatti and Minicoy islands, which are individually producing 1 lakh liters of drinking water per day.
\n
- NIOT is now installing another six more plants in Lakshadweep islands, each with a capacity to produce 1.5 lakh liters of water every day.
\n
- Two more plants will be commissioned by December 2018 and all the plants are being operated by local islanders.
\n

\n\n

### Monsoon Mission Program

\n\n

\n
- The Ministry of Earth Sciences (MoES), launched the “National Monsoon Mission” (NMM) in 2012, with a vision to develop a state of the art, dynamical prediction system for monsoon rainfall.
\n
- It has successfully completed its first phase by setting up high resolution coupled dynamical prediction system with reasonable accuracy.
\n
- This model was used by India Meteorological Department to prepare the seasonal forecast of 2017 monsoon rainfall over India.
\n
- The Ministry has now launched the Monsoon Mission Phase II program, for next 3 years (2017-2020) with emphasis on predicting extremes.
\n

\n\n

\n\n

### Source: PIB

\n

