

**GOVERNMENT OF INDIA
MINISTRY OF EARTH SCIENCES
LOK SABHA
UNSTARRED QUESTION NO. 2800
TO BE ANSWERED ON WEDNESDAY, 3RD AUGUST, 2022**

IMPLEMENTATION OF SCHEMES

2800. SHRI SHA.BRA.DR.JAI SIDDESHWAR SHIVACHARYA MAHASWAMIJI:
SHRI ANNASAHEB SHANKAR JOLLE:
DR. UMESH G. JADHAV:
SHRI SANGANNA AMARAPPA:

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) the details of schemes and projects of the Ministry implemented or being implemented in the country particularly in Maharashtra and Karnataka;
- (b) whether the Government has evaluated the performances of various schemes under implementation by the Ministry and if so, the details thereof and the action taken thereon; and
- (c) the total funds allocated for such schemes and programme, State-wise?

ANSWER

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

- (a) Ministry of Earth Sciences (MoES) implements the following six Central Sector Schemes in the country :
 - i. Atmosphere and Climate Research – Modelling, Observing Systems and Services (ACROSS).
 - ii. Ocean Services, Modelling, Application, Resources and Technology (O-SMART)
 - iii. Polar and Cryosphere Research (PACER).
 - iv. Seismology and Geosciences (SAGE).
 - v. Research, Education, Outreach and Training (REACHOUT)
 - vi. Deep Ocean Mission (DOM)

All the above schemes are implemented over the entire country. However, the following projects are being implemented by the Ministry of Earth Sciences in Maharashtra :

- (i) Under Gramin Krishi Mausam Sewa (GKMS) scheme of India Meteorological Department (IMD), District AgroMet Units (DAMUs) are being established at Krishi Vigyan Kendras (KVKs) in collaboration with Indian Council of Agricultural Research (ICAR) to implement block level AgroMet Advisory Services (AAS) for the farmers. At present, in the State of Maharashtra, the process of setting up of DAMUs in the KVKs in 10 districts has been undertaken. Currently 10 Agro-Automatic Weather Stations have been established in District Agromet Units (DAMU) in the State of Maharashtra.
- (ii) System of Air Quality and Weather Forecasting and Research" known as "SAFAR" for greater metropolitan cities of India to provide location specific information on air quality in near real time and its forecast 1-3 days in advance for the first time in India. It has been combined with the early warning system on weather parameters. The SAFAR system is developed by Indian Institute of Tropical Meteorology, Pune, along with India Meteorological Department (IMD) and National Centre for Medium Range Weather Forecasting (NCMRWF). SAFAR is operational in the city of Mumbai and the air quality monitoring is being carried out in 6 sites.

- (iii) The High Altitude Cloud Physics Laboratory (HACPL), situated in Mahabaleshwar originated from such a unique requirement, where clouds could be continuously monitored at a single location, where cloud base touches the ground. Observations on regular basis at the HACPL provides continuous data for the study of cloud microphysics and interaction between clouds and aerosol and the process of precipitation and related dynamics. The impact of orography of Western Ghat on the precipitation dynamics will be addressed with continuous observations with radar at this site.
- (iv) Indian Institute of Tropical Meteorology/MoES has conducted Cloud Aerosol Interaction and Precipitation Enhancement Experiment (CAIPEEX) program to formulate protocols for cloud seeding activities in India. A science based cloud seeding experiment has been conducted during 2017-2019 over the rain shadow region using radar, aircraft and other ground based instruments. The cloud seeding protocols formulated from the experiment could be used for planning effective cloud seeding operational programs. CAIPEEX airborne observations have been carried out from Solapur.
- (v) Thunderstorms that occur over Marathwada and Vidharba regions in Maharashtra cause heavy losses to live stock and humans. In view of the severity of the losses in Maharashtra, Indian Institute of Tropical Meteorology, Pune, under the Ministry of Earth Sciences, Govt. of India has initiated a project to study the characteristics of lightning by using Lightning Location Network (LLN). This network can accurately detect the location of occurrence of lightning and forewarn the public at least 1-2 hours before the occurrence of thunderstorm. A 20-sensor network has been established in Maharashtra with the Central Processing Station at IITM, Pune. Each sensor can have a coverage of about 200 km.
- (vi) A major national project, "Scientific Deep Drilling in the Koyna Intra-plate Seismic zone of Maharashtra", has been undertaken for directly measuring the in-situ physical properties of rocks, pore-fluid pressure, hydrological parameters, temperature and other parameters of an intra-plate, active fault zone in the near-field of earthquakes – before, during and after their occurrence. As a part of the project, a Borehole Geophysics Research Laboratory has been set up at Karad, Maharashtra which will serve as the operational centre for carrying out the research activities related to the scientific deep drilling. The laboratory mainly focuses on the borehole geophysics investigations and related research, including core analysis and associated field / research studies and already up to a depth of 3 km the drilling has been completed.
- (vii) The earthquake sequence started in and around Dhundhalwadi village, Palghar in Nov 2018 and continued for longer time, though with low frequency. The earthquake monitoring is on-going in Palghar region by NCS with the help of national seismological network along with the temporary installation of broadband stations (4 nos.) in the region.
- (viii) Indian Centre for Ocean Information Services (INCOIS) of Ministry of Earth Sciences is providing various information such as Potential Fishing Zone (PFZ), Advisory Services, Ocean State Forecast (OSF) Services, Early Warning Service for Tsunami and Storm surges to the coastal population, especially fishermen community of Maharashtra state throughout the year except during the period of marine fishing ban imposed by Government of India.

Following projects are being implemented by the Ministry of Earth Sciences in Karnataka:

- (i) Under Gramin Krishi Mausam Sewa (GKMS) scheme of India Meteorological Department (IMD), District AgroMet Units (DAMUs) are being established at Krishi Vigyan Kendras (KVKs) in collaboration with Indian Council of Agricultural Research (ICAR) to implement block level AgroMet Advisory Services (AAS) for the farmers. At present, in the State of Maharashtra, the process of setting up of DAMUs in the KVKs in 10 districts has been undertaken. Currently, 12 Agro-Automatic Weather Stations have been established in District Agromet Units (DAMUs) in the State of Karnataka.
- (ii) Establishment of North Karnataka Agrometeorological Forecasting and Research Centre (NKAFC):

With the intention of reducing impact of weather on agriculture in North Karnataka region, IMD, MoES, GoI has established North Karnataka Agrometeorological Forecasting and Research Centre (NKAFC) at Dharwad on 14th February 2019. Tripartite Memorandum of Understanding (MoU) was made among IMD, University of Agricultural Sciences (UAS), Dharwad and Karnataka State Natural Disaster monitoring Centre (KSNDMC), Bengaluru for developing further excellence in the field. Districts of North Interior Karnataka are covered under this centre which cover total geographical area of 99 lakh hectares with approximately 70 lakh hectare cultivable land. The centre is acting as a Centre of Excellence with multi functions i.e. observations, forecast, research and capacity building in Agrometeorology in Karnataka.

- (iii) Indian Centre for Ocean Information Services (INCOIS) of Ministry of Earth Sciences is providing various information such as Potential Fishing Zone (PFZ), Advisory Services, Ocean State Forecast (OSF) Services, Early Warning Service for Tsunami and Storm surges to the coastal population, especially fishermen community of Karnataka state throughout the year except during the period of marine fishing ban imposed by Government of India.
- (b) Yes Sir. A robust 3-tier mechanism has been adopted to monitor and evaluate the performances of various schemes being implemented by the ministry. At apex level, the overall direction for implementation of programs is provided to review on half yearly basis (April and September), in the beginning of the financial year and middle of the year. At institute levels, particularly for the autonomous bodies of the ministry, the programmes are monitored periodically by the, Research Advisory Committee of the centres. The Governing Council, Financial Committee of the respective centre and also provide direction from both technical and financial angles.

Apart from the above, the Ministry had set up five Independent Review Committees (IRC) to review all the five umbrella schemes approved for the period 2017-20 with a specific mandate to examine their performance, and advise on their continuation from the fourteenth finance Cycle to the next finance cycle (2021-26). All the five IRCs have recommended the continuation of the five umbrella schemes during 2021-26.

Besides, all the on-going schemes are being monitored by the Parliament Standing Committee on annual basis and by NITI Aayog on quarterly basis, through the Output Outcome Monitoring Framework (OOMF).

- (c) All these schemes being implemented by the ministry are Central Sector Schemes and for the country as a whole and hence the allocation of funds is not state-wise. However, during the last financial year (FY2021-22) the allocated budget is Rs. 2298.89 Cr and the actual expenditure is Rs. 2190.42 Cr for implementing the schemes.
