

- (a) whether India and Norway are working for joint polar research;
- (b) if so, the details thereof; and
- (c) how it would be beneficial to our country in future and the funds going to be spent by Government for this purpose?

THE MINISTER OF STATE IN THE MINISTRY OF EARTH SCIENCES (SHRI ASHWANI KUMAR): (a) and (b) Yes, Sir. An MoU has been signed on 1st July, 2008 between National Centre for Antarctica and Ocean Research (NCAOR), Goa, an autonomous institute under the Ministry and Norwegian Polar Institute (NPI) on Cooperation in Polar Research. The cooperation is primarily in the following fields of scientific research in both the Arctic and Antarctic regions:

- Geological mapping and allied Earth Science studies
- Biogeochemistry of sea-ice ecosystems
- Atmospheric Physics and Chemistry
- Glaciological studies
- Paleoclimatology

(c) The cooperation will give a much-needed bi-hemispherical approach to our polar science programmes. The Arctic Ocean and the surrounding regions are one of the most important areas that not only govern the earth's climate but have also recorded the past climatic history. The region is also an excellent harbinger of future changes, as the signals or clues that signify climate change are much stronger in the Arctic region than anywhere on the planet. The ministry has been undertaking scientific research in Arctic region around Ny-Alesund in Svalbard in various disciplines, *i.e.* glaciology, Palaeoclimate, microbiology, atmospheric science, etc. during different seasons in a year. Geologically, Svalbard is unique place where a complete geological column extending from Pre-cambrian is exposed. The closed proximity of glaciers, mountains, streams and fiords present contrasting environment for research.

The estimated expenditure likely to be incurred on Arctic Research programme is 46.00 crore during current Five Year Plan.

High performance computing system at IITM, Pune

1920. DR. K.V.P. RAMACHANDRA RAO: Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether the high performance computing system has been commissioned at the Indian Institute of Tropical Meteorology (IITM), Pune;
- (b) if so, the details thereof; and

(c) to what extent the weather and monsoon prediction is likely to improve with this?

THE MINISTER OF STATE IN THE MINISTRY OF EARTH SCIENCES
(SHRI ASHWANI KUMAR): (a) Yes Sir.

(b) The High Power Computing System (HPCS) facility of 7.2 TFlops for IITM has been commissioned in December, 2009 for essentially modeling of weather processes. This was subsequently upgraded to 70 TFlops to meet requirements of modeling of climate. The upgraded system is under testing and full commissioning is to be completed by the end of March, 2011.

(c) The commissioning of HPCS at IITM, Pune has provided opportunity to carry out extensive experiments through coupled ocean-atmospheric models for dynamical monsoon rainfall prediction at seasonal scales, which is expected to improve Weather and Monsoon Forecasting. Currently, seasonal scale monsoon rainfall predictions have been carried out using statistical models.

Growth of advertising industry

1921. SHRI AVTAR SINGH KARIMPURI: Will the Minister of INFORMATION AND BROADCASTING be pleased to state:

(a) whether the advertising industry has been witnessing a high growth rate in the country during the last few years;

(b) if so, the average annual growth rate during each of the last three years, till date;

(c) the total value of business transacted during the said period; and

(d) the details of financial incentives provided by Government for promotion of the industry during the said period?

THE MINISTER OF STATE IN THE MINISTRY OF INFORMATION AND BROADCASTING
(SHRI CHOUDHURY MOHAN JATUA): (a) Yes, Sir.

(b) and (c) As per the report on Media and Entertainment, 2010 by Federation of Indian Chambers of Commerce and Industry (FICCI) -KPMG, the growth rate in advertising industry and the total value of business transacted during the period from 2006 to 2009 are given in Statement (See below).

(d) Government's efforts to help the development of this industry is an ongoing process. The Government had announced a fiscal stimulus package for the print media on account of economic slowdown which was valid from 27/2/2009 to 31/12/2009. It included the following.

(i) Waiver of 15% Agency Commission on DAVP advertisements.