

**GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA**

UNSTARRED QUESTION NO:623
ANSWERED ON:08.07.2009
GLOBAL WARMING IN ANTARCTICA
Agarwal Shri Jai Prakash

Will the Minister of EARTH SCIENCES be pleased to state:

- (a) whether lakes of water has been found beneath the 2300 feet of compressed snow in Antarctica;
- (b) if so, the details thereof;
- (c) whether any study has been made in regard to global warming in Antarctica and its impact on world at large;
- (d) if so, the details thereof; and
- (e) the steps taken by the Government in this regard?

Answer

MINISTER OF THE STATE (INDEPENDENT CHARGE) IN THE MINISTRY OF SCIENCE AND TECHNOLOGY, MINISTER OF THE STATE IN THE MINISTRY OF EARTH SCIENCES, MINISTER OF THE STATE IN THE MINISTRY OF PRIME MINISTER'S OFFICE, MINISTER OF THE STATE IN THE MINISTRY OF PERSONNEL, PUBLIC GRIEVANCES & PENSIONS AND MINISTER OF THE STATE IN THE MINISTRY OF PARLIAMENTARY AFFAIRS (SHRI PRITHVIRAJ CHAVAN)

(a) Yes, Sir.

(b) More than 145 lakes have been identified beneath the thick Antarctica ice sheet also called sub-glacial lakes. Most of these lakes are covered under 3-4 kilometers of ice and are several kilometers long. Lake Vostok (location 107.50E, 78.50S) is the largest among these sub-glacial lakes which occupies an area of about 14,000 sq km. and lies beneath about 4 km thick sheet of ice. The water depth of the lake is over 900 m.

(c,d&e) Global Change Research forms an important component of the scientific studies being carried out by Indian scientists in Antarctica. Considering the importance of greenhouse gases in modulating global climate change since the XXI Indian Scientific Expedition to Antarctica, scientists from the National Physical Laboratory, New Delhi have been carrying out online measurements of CO₂ and CH₄, CO and columnar water vapour using various scientific equipments at the Indian research station 'Maitri' (Antarctica).

In addition, scientists from the Geological Survey of India have been carrying out systematic monitoring of the fluctuations in the continental ice margin in the Western Schirmacher range since 1983 Results show a recession of about 7 m per decade.

Considering that the implications of the variations in Greenhouse gases over Antarctica on global warming calls for a larger temporal and spatial database, the Indian scientists, together with the scientists from other countries working in Antarctica have been analyzing and synthesizing the data collected over the years, in an effort to arrive at specific conclusions.