# A station in Himalayas to study climate change

Researchers setting up a monitoring system on a glacier in 2015. Photo: Special Arrangement

Glaciologists are studying Himalayan glaciers to understand the impacts of climate change in the polar climate and its connection to the Indian monsoon.

A team of glaciologists from the National Centre for Antarctic and Ocean Research, Goa, led by Paramanand Sharma, has already scaled over 4,500 metre to set up a research station on the icy terrain. The station would have several automated research facilities to detect the changes in glaciers, and glacial melt-water.

The scientists will be looking into various aspects of climate change and the present status and future stability of glaciers from the Himalayas. Scientists will be undertaking an integrated study on the health and fate of benchmark glaciers from the Chandra basin (part of the Indus river basin) in Lahaul-Spiti valley, Himachal Pradesh, Western Himalaya, he explained.

The newly established station would be one of the few high-altitude research facilities in the Himalayas that would help the scientists to study the region throughout the year. The inclement and challenging weather with extreme cold and windy conditions and the low availability of oxygen at the dizzy altitudes make the task of the scientists a challenging one, explained Thamban Meloth, the leader of the Cryosphere and Climate project funded by the Ministry of Earth Sciences.

The “effects of global warming is most perceptible and amplified in the Polar Regions — the Antarctic and Arctic — and the Himalaya. The ice sheets and glaciers also act as natural recorders of climate variability and change,” he said.

India has also been attempting to learn more about the climate change in Antarctica and its linkages to global and tropical climate system and to look into the evolution, current dynamics and possible future instability of selected Antarctic ice shelves using geophysical studies and modelling.

The bio-geochemical cycling within the glacial ecosystems of Antarctic, Arctic and Himalayan region, the dynamics and health of the Arctic glaciers, the dynamics and response of selected Himalayan glaciers to climate and other factors will also be studied.

The multidisciplinary project has researchers from glaciology, geology, biology, physics, and chemistry that helps in understanding the cryospheric systems in a holistic way.

Since the last decade, the NCAOR has drilled several ice cores in Antarctica, up to a depth of 100 metre. These cores represent the Antarctic climate variability and change during the past several hundreds of years. The Centre is also measuring the carbon cycling in Antarctic cryosphere as well as the stability of ice shelves in coastal Antarctica, in the face of a warming climate, he explained.

A study of nearly 300 people living in different parts of India found that nine single-base variants (single-nucleotide polymorphisms or SNPs) account

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