DIVECHA CENTRE FOR CLIMATE CHANGE

The Energy and Resources Institute

ICIMOD

DEPARTMENT OF SCIENCE AND TECHNOLOGY & CLIMATE CHANGE, Government of Sikkim

State of the Cryosphere in the Himalaya: With a focus on Sikkim and eastern Himalayas - gaps, challenges, and opportunities

Chintan Bhavan, Gangtok, 19th and 20th February 2018

The Integrated Mountain Initiative (IMI) – Sikkim Chapter and Department of Science and Technology and Climate Change, Govt. of Sikkim, will host a cryosphere conference in Gangtok, Sikkim, on February 19th and 20th, 2018. Other organizers/sponsors include: ECOSS; Sikkim University; Divecha Centre for Climate Change, IISc; ICIMOD TERI; IHCAP; SDC; and DST-GoI.

Background and Objective

The Himalayan cryosphere comprises a large number of glaciers and snowfields, several high-altitude lakes, and frozen ground, all of which are sensitive to climate change. The Sikkim Himalayas also consist of many glaciers, most of which are debris covered, large seasonal and permanent snow cover extent, and numerous lakes. A large population and economy depend on the meltwater which drains into the Teesta River, a tributary of the Brahmaputra. The meltwater is one of the main sources of water for the Sikkimese - for their domestic purposes, irrigation, agriculture, the tourism industry (hoteliers' needs), recreation, and hydroelectric projects. Due to rising global temperatures and rapid melting of glaciers worldwide, the stream runoff pattern of Teesta basin needs to be monitored to assess the future water availability and the risks from GLOF events. Better glacier monitoring and modelling techniques need to be developed to understand the present and future changes in snow and glacier cover under various future climate scenarios. Little data are available for the eastern Himalayas, including the Sikkim, Bhutan and Arunachal Himalayan glaciers. In addition, the rugged terrain, international borders, government permits and permissions and inaccessibility are barriers to research. To overcome these challenges, we need to develop better synergy between local, national and international research communities and government organizations.

Against this backdrop, a two-day conference on the Himalayan Cryosphere will be organised in Gangtok, Sikkim. The conference aims to bring together a synergy of scientists, policy makers, students, and local communities on one platform, to understand the latest scientific developments in glaciology and enumerate the local communities' problems and needs. The deliberations are aimed to institutionalise a mechanism to develop a policy frame work, where scientific research can address societal needs and prepare the society to adapt to the changing times through various mitigation and adaptation strategies.

Parallel Initiatives

Integrated Mountain Initiative (IMI): The IMI's Sustainable Mountain Development Summit (SMDS) met in Ladakh, SMDM-V 2016, discussed water security and expressed interest in conducting research on glaciers and snow cover in Sikkim, Arunachal Pradesh and Ladakh (http://inmi.in/). The delegates also felt it important to implement projects on traditional practices of irrigation and conservation techniques.

Sustainable Development Goals (SDG's) approach: Sikkim is in the process of finalizing a bill on, *"Well Being of Generations Act"* with 17 sustainable development goals as key to bring about changes in the functioning of the state. This includes the 13th SDG on Climate Action, to study the health of the glaciers as indicators of climate change and monitor river flow for future well-being.

Themes

The plenary session will include: I) Cryosphere and Climate Change, II) Best Practises in Cryosphere Studies, III) Glacier Hydrology, and IV) Cryosphere and Land-Use Changes.

The technical sessions will include: 1) Cryosphere investigations in Sikkim; 2) Cryosphere investigations in the Himalayas with a focus on the eastern Himalaya; 3) Disaster monitoring, assessment and mitigation strategies; and 4) panel discussion with parallel sessions on (i) Strengthening policies, and (ii) Strategies and priorities to guide future research.

The expected outcome and medium-term objectives for each session is to:

1) Identify knowledge gaps and challenges in eastern Himalaya
2) Include and widen state-of-the-art research and technology in glaciology
3) Assess the future water availability
4) Implement capacity-building needs and establish a glacier study centre in Sikkim
5) Advocate the findings to the government of the region and government of India for appropriate public policy formulations

ORGANISING COMMITTEE

Dr. Smriti Basnett, Sikkim University, Gangtok

Dr. Rakesh Ranjan, Sikkim University, Gangtok

Dr. Uttam Lal, Sikkim University, Gangtok

Dr. Anil Kulkarni, IISc, Bangalore

Mr, Rajendra P. Gurung, IMI & ECOSS, Gangtok

Ms, Priyadarshinee Shrestha, IMI & WWF, Gangtok

Mr, Dhiren Shrestha, DST&CC, Gangtok

Dr. Thomas Chandy, FEWMD, Gangtok

Mr, P.D Rai, IMI & MP-LS, Sikkim

CHAIRMAN and CONVENOR

Mr, P. D Rai
Member of Parliament – Lok Sabha, Sikkim and
Councillor-Integrated Mountain Initiative
Email: premdas.rai@sansad.nic.in

CO-CHAIRMAN

Dr. Thomas Chandy
PCCF-cum-Secretary,
Forest Environment and Wildlife Management
Department (FEWMD), Govt. of Sikkim
Email: tchandy.abc@gmail.com

TECHNICAL ADVISOR

Dr. Anil Kulkarni
Distinguished Scientist
Divecha Centre for Climate Change
Indian Institute of Science, Bangalore
Email: anilkulkarni@iisc.ac.in
http://dccc.iisc.ac.in/anilvk_home.html

PROGRAMME COORDINATOR

Dr. Smriti Basnett
Research Associate
New Science Block,
Sikkim University
Email: smritibas@gmail.com

REGISTRATION ENQUIRY

Priyadarshinee Shrestha
IMI Coordinator and Team Leader WWF,
WWF Office, Gangtok 737101, Sikkim, India.
E-mail:darshinee.p@gmail.com

State of the Cryosphere in the Himalaya

Changme Khangpu glacier, North Sikkim

LOCATION

The venue for the conference is Gangtok, the capital of Sikkim. Situated upon sprawling hilltops and ridges at 1600m, Gangtok is chilly in the winter. Although it does not snow in town, a sudden shower can send the temperature plummeting to near the 0°C mark.

CALL FOR PAPERS

Research work relevant to the themes are invited for oral/poster presentation.

Themes

1. Cryosphere investigations in Sikkim
2. Cryosphere investigations in Himalayas with a focus on the eastern Himalayas
3. Disaster monitoring, assessment and mitigation strategies related to Cryosphere: Case Studies

IMPORTANT DATES

Last date for registration	31 Dec 2017
Last date for abstracts (500 words)	31 Dec 2017
Confirmation of acceptance	06 Jan 2018

REGISTRATION, TRAVEL & ACCOMMODATION

Registration by invitation only. Limited funds to support travel and stay for selected students. All local hospitality in Sikkim including accommodation and pick up from Bagdogra airport/ NJP train station, shall be borne by the organisers.

REGISTRATION LINKS:

Registration link for presenters:
https://goo.gl/forms/LUJHrOdr82aHKUYL2

Registration link for participants:
https://goo.gl/forms/jXl4TJdkWyCNrDAE3