THE 6TH CONFERENCE ON

Science & Geopolitics of

HIMALAYA-ARCTIC-ANTARCTIC

FOCUS: SUSTAINABILITY CHALLENGES OF THE HIGH-NORTH

INDIA INTERNATIONAL CENTRE, NEW DELHI
SEPTEMBER 18-19, 2021

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Ministry of Earth Sciences

National Centre for Polar & Ocean Research

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SaGHAA *CHAPTER-6*
CONTEXT

Polar regions and their geopolitics is a constantly changing field where new equations emerge each day with solutions being proposed constantly. The increasing loss of sea ice in Arctic, breaking away of large chunks of ice shelves in West Antarctica and Antarctic Peninsula and rising sea level, has necessitated urgency of discussions on the role of mankind in mitigation and adaptation to the new scenario. Ever increasing pressure on high seas for exploitation of fisheries and exploration for non-living resources has seen growing activities in areas which were considered to be too inaccessible for economic exploit, couple of years before. Newer collaborations and research cooperation is evolving in both Arctic and Antarctic. More nations from the third world are proposing to build research stations in Antarctica. Russia and Canada have opened their Arctic Bases to researchers from other countries. This would also involve a greater need for technological innovations that would assist rigorous research expeditions into the lesser known cryospheric realm.

Our own Himalaya, and the Himalayan ecosystem, and its environment as a whole, too is under strain due to the changing climatic patterns, especially that of monsoons and westerlies which bring precipitation to different regions of this long mountain chain spread over several Asian nations—Afghanistan, Bhutan, China, India, Nepal, Pakistan, Myanmar. The Himalaya and its problems are not confined to one nation. These transcendent the man made geographic borders. The geological set up and tectonic framework of young rocks has made the region unstable and at high seismic risk. To add to this, the sudden outbursts of lakes formed due to damming of glacial lakes at high altitude (GLOF) and frequent cloud bursts have resulted in great calamities in near past such as Nepal earthquake and the Kedarnath tragedy. Scientists concerned with Himalayan system therefore need to join hands and work together to usher an era of scientific cooperation in this ~2,500 km long, highly inaccessible, pristine and fragile environment that constitutes water tower to one of the most densely populated region of world.

LIGHTS Research Foundation has been working towards a convergence of these aspects for over a decade now. Beginning in 2011, the Conference on Science and Geopolitics of Himalaya, Arctic and Antarctic (SAGHAA) is held every second winter. The Conference attempts greater amalgamation of research with ground truthing on the three poles in order to evolve concerted dialogue regarding the world's cryospheric regions.

SAGHAA *HIGH-NORTH*
FOCUS

The rapid climatic changes in the high-north in the Arctic warrants an urgent and close study as it could well prove critical to the existence of humanity in view of the burgeoning world population, increasing water, energy and food needs and rapidly depleting natural resources. The sustainability challenges of the High-North therefore, emphasizes on the complex earth process interactions and their symbiosis with evolving economic interests by focusing on new directions. India looks forward to partnering with Arctic nations for global good and a sustainable future.

Photo, top to bottom: The inaugural session of the first conference in 2011 in New Delhi; An international event with heads of ministries and universities attending in 2012 in New Delhi; The third meeting in 2015 at the same venue; The path breaking fourth meeting held at JNU, New Delhi where 17 directors from various scientific institutes attended in 2017; At the end of the first day during fifth meeting in 2019 at New Delhi.

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SaGHAA *ACADEMIC* OUTCOMES

Title: Climate Change and the White World
Editors:
Prem Shankar Goel
Rasik Ravindra
Sulagna Chattopadhayay
Springer: July 2019

Title: Science and Geopolitics of The White World
Editors:
Prem Shankar Goel
Rasik Ravindra
Sulagna Chattopadhayay
Springer: July 2017

Title: Scientific and Geopolitical Interests in Arctic and Antarctic
Editors:
R. Ramesh
M. Sudhakar
Sulagna Chattopadhayay
Iris Publication: March 2013

SaGHAA *THINK-TANK* OUTCOMES

The strength of SaGHAA lies in the 'SaGHAA people' — the high-level experts. Every organisation in India working on anything that is even distantly 'Polar' is with us during each event. Heads of scientific establishments and policy bodies assiduously attend, contributing emphatically and freely to the discourse. The first outcome of SaGHAA is, therefore, its stature that draws from its myriad stakeholders providing a body of recommendations that serves as an illuminated path for policy makers. Second, SaGHAA interfaces two extremely diverse subject areas into one. Scientists, for instance, can unwittingly project their subject bias onto the domain, skewing India's role in the Polar Regions. Geopoliticians on the other hand are fairly disinterested in science — analysing global relations in relative isolation from the growth trajectories of Polar science. The bringing together of the two is, therefore, unique and unparalleled. There are many think-tanks that work either on science or geopolitics of the Polar Regions, but none that forges a relationship between the two. This convergence in SaGHAA is imperative to better India's future endeavours in the Polar Regions.

As the interest in SaGHAA grew, the Norwegian Embassy in India came forward to partner with it in 2014. Several other embassies from various countries are now showing interest, inviting experts from their respective countries to engage with Indian scientists and geopoliticians. Many important inter-ministerial polar dialogues were in fact forged in the backdrop of the SaGHAA interactions.

Fourth, SaGHAA is contributing towards escalating multi-disciplinary research on Polar Regions with an increasing engagement of students from the social sciences background. We are confident that it will not be long before Indian students would work on issues related to Arctic's indigenous communities, looking for clues to help communities in India's High Mountains – the Himalayas.

In a preliminary study run by SaGHAA, India's academic strength in Polar studies shows a steady increase from 1960-2018. The research is in progress and more nuanced results are awaited, to be presented as the Polar Academic Vision Report in the forthcoming SaGHAA.

SaGHAA *POLICY* INFLUENCE

The SaGHAA endeavour has created an ambience that has helped inspire both Polar science and policy in India. The nation is ready to put in place an Antarctic Law and is beginning to formulate a policy on Arctic as well. The expansion of India's Arctic stations was also discussed during SaGHAA deliberations—which is soon to become a reality. As for the Himalayas, a scientific forum, based on learnings from the Arctic Council, proposed during SaGHAA, is also being put in place by the highest governmental echelons.

As polar studies entail a detailed understanding of the cryosphere, climate understanding is intrinsic to all the studies undertaken. In fact, conserving the glaciers in the high mountains in India is one of the most challenging dialogues in SaGHAA. Recommendations towards such action has been placed before several ministries at the conclusion of each event. Several have been adopted too.

SaGHAA *PERIODICAL* PUBLICATIONS

Geography and You, a well read RNI and ISSN accredited environment and development fortnightly with a readership of about a million has been promoting awareness and advocacy about the three poles through its publications. It has with the assistance of the SaGHAA team, published over 61 research articles. Over the years Geography and You has published 5 dedicated issues exclusively on the polar regions. Some of the titles are 'India's Polar Endeavour's, published in collaboration with National Centre for Polar and Ocean Research (NCPOR), 'Glacier Meltdown', that investigated the effects of climate change on the cryosphere and 'Polar Perspectives', which has several international authors of repute contributing towards it. Geography and You has been advancing SaGHAA's mandate, making sure it reaches the right audience consistently.

SaGHAA *IN THE* PRESS

The SaGHAA think-tank also contributes towards building public opinion through reputed newspapers, such as Financial Express and international websites such as Polar Connection.

Sulagna Chattopadhyay, Cold Rush: Why India is Rushing to the Arctic? *Financial Express*, September 30, 2019. Available at: https://bit.ly/2VyLdB1

Sulagna Chattopadhyay, Icy Challenge: Distrust Towards Chinese Interference in Arctic an Opportunity for India. *Financial Express*, October 16, 2019. Available at: https://bit.ly/2T1Xs7j

Hriday Sharma, Sulagna Chattopadhyay, India's Saghaa: Where the Arctic, Antarctic and Himalayas Meet, *The Polar Connection*, November 1, 2019. Available at: https://bit.ly/2w3Ldhu

Sulagna Chattopadhyay, Disconnect with Antarctic Diplomacy: Need for Policy Interest from India. *Financial Express*, December 16, 2019. Available at: https://bit.ly/2uwH5pZ

SaGHAA *IN THE* WEBSITE

More than 120 popular science articles on geographyandyou.com and saghaa.org website pertaining to polar science. The website has over two million users. It has been helping in promoting India's polar science programme from 2011 onwards.

SaGHAA 2021 INTENDS TO HIGHLIGHT THE SUSTAINABILITY CHALLENGES OF THE POLAR REGION IN THE LIGHT OF ITS COMPLEX INTERACTIONS.

SaGHAA 2021

TENTATIVE SESSIONS:
SEPTEMBER 18-19, 2021

FOCUS: Sustainability Challenges of the High-North

TENTATIVE SESSION 1

Theme: Changing Economic Interests and Shared Global Vision for the High-North

1. Sustainable development and the cryosphere- best practices and lessons learned
2. India's Arctic Vision 2030
3. Trends in Arctic security
4. Economic challenges in Arctic endeavours
5. Resources in the Arctic – an industry insight
6. Building Climate technologies for the cryospheric changes in High-North
7. Renewable energy, carbon footprint and the Arctic
8. Sustainable infrastructure in the Arctic

TENTATIVE SESSION 2

Theme: Research Engagement in the three poles

1. India's ongoing research programmes in the three poles
2. Logistic, safety and security of scientific expeditions
3. Enhancing research in the Polar regions
4. Experience sharing/ stories about the Polar regions
5. Building youth movement for polar research
6. Scientific vision of the interconnections of the three poles

PANEL DISCUSSION 1: Why does the Arctic warrant greater interest?

TENTATIVE SESSION 3

Theme: The Himalaya – At the climate change crossroads

1. Monitoring the Himalayan glaciers – are they really retreating?
2. Climate change, extreme events, GLOF and vulnerability
3 Future projections and water security in the Himalaya
4. Artificial glaciers and agriculture in high altitudes
5. Opportunities and challenges in the Himalayan cryosphere
6. The Himalayan cryospheric microbe and melting permafrost
7. Indigenous people and the changing Himalaya
8. High mountain exploration technologies and engineering solutions
9. New transportation routes and manning the remote regions in the Himalaya
10. Sustainable entrepreneurship and innovations in the Himalaya

PANEL DISCUSSION 2: Micro-plastics and ocean wealth, are they opposed entities?

TENTATIVE SESSION 4

Theme: Arctic and the High Arctic – Science-driven preparedness

1. Changes in the High Arctic and alarming global resonance
2. Technological innovation and research in the Arctic
3. The Arctic economy- Additional fishing opportunities
4. Development and Governance: The emerging security challenges in the High Arctic
5. India and High Arctic – Building the relevance
6. Infrastructure, ships, roads and routes in the Arctic
7. Indigenous populations and climate change health risks
8. Towards a CO_2 free Arctic – Lifestyle innovations
9. The Arctic values of sustainability and ethics

PANEL DISCUSSION 3: India's role in Polar discourse—does India have the wherewithal?

TENTATIVE SESSION 5

Antarctic - Science for all and all for science

1. Climate change and the Antarctic influence
2. The melting East Antarctic conundrum
3. Antarctic's protected marine zones - science shows the way
4. Revisiting the Antarctic Treaty
5. Fishing in stormy waters –bio prospecting rights
6. Tourism in Antarctic
7. Search and rescue – costs of responsible governance
8. Renewable energy, innovation and research stations

TENTATIVE SESSION 6

The Southern Ocean

1. Micro-plastic and limits to growth
2. Overcoming the remoteness of the Southern Ocean- India's Expeditions
3. Innovations in ROVs
4. Deep Sea Mission—India and the world
5. Innovations and technologies for deep sea mining
6. Fishing and bioprospecting in the Southern Oceans

TENTATIVE SESSION 7

Rapid shots for young talent

EXHIBITION

1. Indigenous People of the Himalayas and the Saami of Norway
2. Glaciers of the Himalayas

With India's interest in the Poles, especially the Arctic burgeoning in the last few years, SaGHAA needs to be able to step up its contribution. SAGHAA 2021 will highlight the climate change, challenging marine technology, blue economy, micro-plastics and management aspects of expeditions that constitute the backbone of conducting research in inaccessible areas of Arctic, Antarctic, Himalaya and Southern Ocean. Your active participation is therefore imperative.

REGISTER WITH US

Name:.....

Designation:.....

Organisation:.....

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☐ Delegate ☐ Media ☐ Industry

☐ Fmr. Scientist/Professor

Registration Fee

Industry personnel: INR 7500

Scientists: INR 5000

Scholars (SRF) / Faculty: INR 1500

Students: INR 500

FOR ONLINE REGISTRATION VISIT

https://saghaa.org/saghaa-registration.php

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