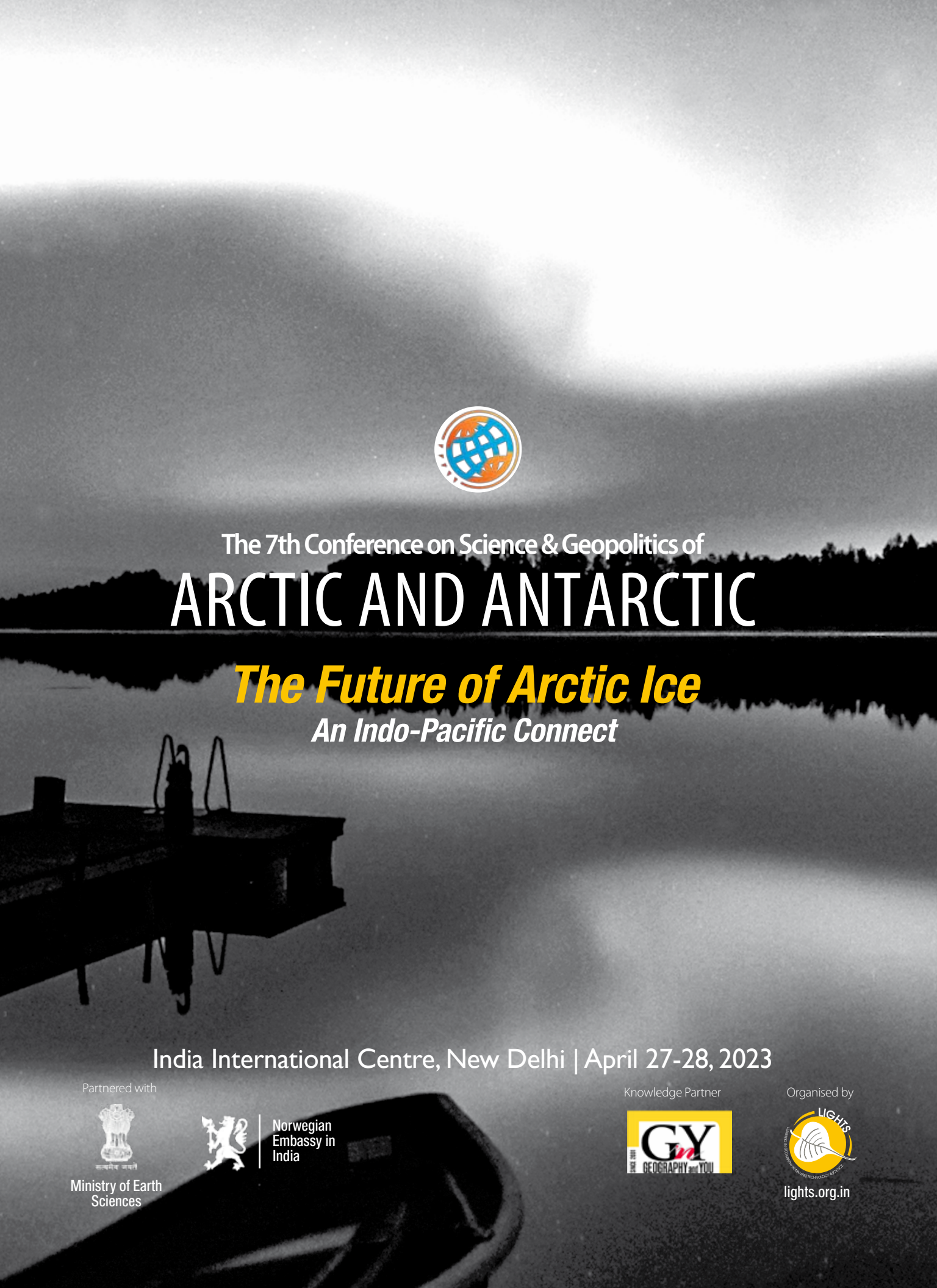

The 7th Conference on Science & Geopolitics of

ARCTIC AND ANTARCTIC

The Future of Arctic Ice

An Indo-Pacific Connect

India International Centre, New Delhi | April 27-28, 2023

Partnered with

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SETTING THE SaGAA 7 *CONTEXT*

Introduction

The Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC 2021) has confirmed that global warming is leading to increasing frequency and intensity of extreme weather events, droughts and tropical cyclones. The world has already crossed an average global temperature of 1.2ºC of the 1.5ºC set in the Paris Accord of 2015. The report unequivocally acknowledges that global warming is largely anthropogenic and that policy has been slow to follow what the scientific community has extensively outlined. A lack of agreement between scientists and policy makers, inclusion of other interests/variables, business opportunities and economic constraints, entwined in a stranglehold of low political will, complicate climate talks making adaptive action ephemeral. It is therefore imperative to raise the crescendo and engage in multiple platforms, in order to raise the need for quicker climate action. Interestingly, not all the regions of the earth are warming at the same rate. The Polar realms in fact are suffering an accelerated rate of warming as compared to the oceans and the equatorial regions, making it difficult to get a clear picture. The region in focus for this SaGAA Conference, the Arctic, has warmed nearly four times the global average in the last four decades (Retanen et al., 2022).

PHOTO COURTESY: SVETLANA

The Arctic

Until recently there was little that the world knew about the Arctic. Its inhospitable environment, from high mountains to permafrost flat plains, wide tundra and great expanses of sea, snow and ice (frozen land/permafrost data), is prohibitive to human habitation. The Arctic for instance has a land area of 16.5 million sq km, but with a population of merely 4 million (as of 2020) under the sovereign domain of eight developed nations (Russia, Canada, Iceland, Norway, Sweden, Finland, United States and Denmark), which translates into a population density of <1 person per sq km. The bleakness is palpable when compared to a density of 382 people per sq km in India (2011 Census of India). However, with the knowledge gap closing through heightened multi-country research efforts studying the region's climatology, oceanography, ecology, glaciology, anthropology and exploration geology, the Arctic is slowly but surely transforming. According to the sixth IPCC WG-I report, global warming is the primary driver of far-reaching changes in the region. It has resulted in an increased frequency (2.8 times frequent) and intensity (1.2 ºC hotter) of hot extremes over landmass, more erratic and intense precipitation (frequency increase of 1.3 times and with 6.7 per cent more severity) and drought (frequency increase of 1.7 times) events compared to average of pre-industrial (1850-1900) levels. In fact, the loss of Arctic summer sea ice is an alarming 12.6 percent per decade (NASA GCC).

PHOTO COURTESY: SIMON BERGER

The Himalaya

Scientists say the changes in the Arctic, resonate through the Himalaya as well (Sharma et al., 2019). And a total of 40 percent retreat of the glaciers over a period of 400-700 years (Lee et al., 2021) presents a grim scenario that could potentially endanger the lives and livelihoods of over 2 billion (UN World Population Prospects 2022) people living in the subcontinent, not to mention about 0.65 billion people living in the Gangetic plains who will be directly affected. While the sustainability of Indian water resources stands in question with the continued retreat of the glaciers, disasters due to increased glacial melt runoffs in the form of flash floods, landslides and glacial lake outburst floods (GLOFs) will likely compound (Ahmed et al., 2021; Nie et al., 2021). Moreover, scientists find that the Arctic's upper atmosphere currents, Rossby waves, deeply impact our weather patterns and cloudburst events. The understanding of the Arctic melt is therefore critical for the future of the sub-continent.

PHOTO COURTESY: GASPAR ZALDO

The Antarctic

Deeper south, Antarctica is also feeling the heat. The warming climate has resulted in ten-fold increase in ice shelves volume loss rate, from 25 cubic km per year during 1993-2003 to 310 cubic km per year during 2003-2013 (Paolo et al., 2015). Although there has been rapid ice sheet thinning observed in West Antarctica and on the Antarctic Peninsula, so far, this has not been observed around East Antarctica (Pritchard, 2009). In fact, parts of the East Antarctic Ice Sheet have been thickening, especially deep in the interior, (Davis et al., 2005) which contrasts strongly with the observed rapid thinning of the West Antarctic Ice Sheet. The Antarctic, cut up like a pie with overlapping territorial claims from seven nations—Argentina, Australia, Chile, France, New Zealand, Norway, and the United Kingdom, are currently in abeyance. Recently in October of 2021, India ratified conservation of Antarctic Marine protected areas to prevent overfishing of krill at the Commission for Conservation of Antarctic Marine Living Resources (CCAMLR), where China and Russia vetoed. In April of 2022, Indian Government passed the Indian Antarctic Act, 2022 to give effect to Antarctic Treaty, CCAMLR, and the Protocol on Environmental Protection (1998). Although commercial mining has never been the thrust in the Antarctic due to a moratorium on it until 2048, the situation in the Arctic is quite opposite. With nations holding sovereign rights to the icy high-north realms, exploration has nearly always been part of the national plan of most of the Arctic nations.

PHOTO COURTESY: TETYANA KOVYRINA

The Deep Ocean Mission

As evident through the length of human history, opportunities for resource exploration fascinates investing nations. The fate of the unfrozen Arctic is no different. One-sixth of the world's landmass is now opening up to what is termed as the 'Cold Rush' (Briggs, 2021). The geopolitical competition within and without, especially with China naming itself a 'near Arctic' state, is likely to usher in multi-level challenges. The vast volumes of unexplored resources include fossil fuels (petroleum oil, natural gas and gas condensates), base metal, rare earth elements deposits and gemstones (Boyd et al., 2016), would need to be commercially/environmentally viable and easily accessible/transportable, in order to be sustainable. India has launched Deep Ocean Mission in 2018, an integrated operation for exploration and study of deep sea beds operated by the Ministry of Earth Sciences (MoES) with an intention to develop technologies to harness the living and non-living resources from the deep-oceans. It is well underway with a revised budget of INR 6.5 billion, the nation is likely to develop prowess to mine underwater and has joined the elite nations of the world—USA, Russia, Japan, France and China, in the deployment of manned titanium submersibles. This would enable collaborations with nations of the high-north and help take exploration plans forward.

Northern sea route and the Indo-Pacific region

Exploration efforts would also hugely benefit from the Russian planned all-year round navigation in the Northern Sea Route by 2030s (Gunnarsson, 2021) leading to a manifold rise in marine traffic. Infrastructure development—ports both for ship and air traffic, as well as rails, roads and pipelines criss-crossing the vast frozen stretches of the Arctic would also auger well for exploration which include areas like Murmansk, Novaya Zemlya, Taymyr Peninsula and Yamal Peninsula in Russia.

PHOTO COURTESY: TOBIAS BJÖRKLI

If indeed a scenario such as this is in place, it would in theory, bypass the Indian and Pacific Ocean marine traffic routes. The 4500 km shorter and economical route would help save time by 10-15 days as well as avoid the choke-points of Malacca, Suez and Panama. This would hold ramifications well beyond cargo, with strategic roles moulded and reshaped. The inevitable link to the Indo-Pacific therefore, needs a calibrated approach, to fully understand the changing's Arctic true potential.

Multiple stressors in a sparsely populated region present unique challenges to the Arctic governance mechanisms. India has ratified all major treaties including the UNCLOS and continues to uphold its tenets in letter and spirit. It is also associated with several international bodies that work on the Arctic. India's continued interest, especially in the wake of a newly forged Arctic Policy, is therefore ensured. The Policy focuses on six areas including Science and research, Environment protection, Economic and human development, Transportation and connectivity, Governance and international cooperation and National capacity building for involvement.

Conclusion

These wide and prolific changes necessitates a greater urgency for sustained research to further improve our understanding of local, regional and global processes—the scope transcending man-made geographic borders and thereby requiring the involvement of several nations and communities in the global arena, each with their own interests and limitations. Thus, an interface between science and geopolitics of the Arctic and Antarctica becomes pertinent. Indeed, numerous forums do exist within which either scientific or geopolitical findings are shared, however an interface among them is few and far between. Since the tenets that determine the icy realms are based on science but also require participation of many countries and communities, it becomes important to conduct the discussion on a platform such as SaGAA where varied inter-disciplinary issues can be raised.

References

1. Lee, E., Carrivick, J. L., Quincey, D. J., Cook, S. J., James, W. H., & Brown, L. E. (2021). Accelerated mass loss of Himalayan glaciers since the Little Ice Age. *Scientific reports*, 11(1), 1-8.
2. Nie, Y., Pritchard, H. D., Liu, Q., Hennig, T., Wang, W., Wang, X., ... & Chen, X. (2021). Glacial change and hydrological implications in the Himalaya and Karakoram. *Nature reviews earth & environment*, 2(2), 91-106.
3. Paolo, F. S., Fricker, H. A., & Padman, L. (2015). Volume loss from Antarctic ice shelves is accelerating. *Science*, 348(6232), 327-331.
4. Briggs, C. (2021). Cold Rush: The Astonishing True Story of the New Quest for the Polar North.
5. Boyd, R., Bjerkgard, T., Nordahl, B., & Schiellerup, H. (2016). Mineral Resources in Arctic: An Introduction. Geological Survey of Norway. Norway.
6. Gunnarsson, B. (2021). Recent ship traffic and developing shipping trends on the Northern Sea Route—Policy implications for future arctic shipping. *Marine Policy*, 124, 104369.
7. Pritchard, H. D., Arthern, R. J., Vaughan, D. G., & Edwards, L. A. (2009). Extensive dynamic thinning on the margins of the Greenland and Antarctic ice sheets. *Nature*, 461(7266), 971-975.
8. Davis, C. H., Li, Y., McConnell, J. R., Frey, M. M., & Hanna, E. (2005). Snowfall-driven growth in East Antarctic ice sheet mitigates recent sea-level rise. *Science*, 308(5730), 1898-1901.
9. Rantanen, M., Karpechko, A. Y., Lipponen, A., Nordling, K., Hyvärinen, O., Ruosteenoja, K., ... & Laaksonen, A. (2022). The Arctic has warmed nearly four times faster than the globe since 1979. *Communications Earth & Environment*, 3(1), 1-10.
10. Sharma, P., Patel, L. K., Singh, A. T., Meloth, T., & Ravindra, R. (2020). Glacier response to climate in Arctic and Himalaya during last seventeen years: A case study of Svalbard, Arctic and Chandra Basin, Himalaya. In Climate change and the white world (pp. 139-156). *Springer*, Cham.
11. Ahmed, R., Wani, G. F., Ahmad, S. T., Sahana, M., Singh, H., & Ahmed, P. (2021). A review of glacial lake expansion and associated glacial lake outburst floods in the Himalayan region. *Earth Systems and Environment*, 5(3), 695-708.

The Saga of SaGAA *2011-2022*

SaGAA VI WEBINAR 2020

SaGAA VI, held on 28-29 September 2020, was a unique chapter in our history. It was the first time that the Webinar was organised as an end-to-end online event in multi- nation dialogue mode. Day 1 marked a total of 532 registrations and about 276 attendees and Day 2 recorded a total of 556 registrations and a total of 184 attendees. These numbers speak for themselves as such high registrations are rare for specialised events on the Polar regions. There were high levels of engagement from the audience with interesting questions posed in every discussion session. As SaGAA has been working for greater Indian involvement in Polar Regions since 2011, its core competencies lie in facilitating high level dialogues between the Indian scientific and social science community with their international counterparts from the Polar Countries. The expert panel at SaGAA chose the theme "Managing the Polar Oceans Sustainably" to focus on for the SaGAA Webinar 2020 taking the cue from "2021-2030 to be the Decade of Ocean Science for Sustainable Development" declared by the United Nations. Devised to draw attention and accelerate scientific developments that will ensure the safety and sustainability of the vast oceans, the UN's initiative is a challenging milestone. In the context of the Polar oceans, this role's enormity magnifies. The Keynote addresses included 'Importance of the Southern Ocean for Global Climate' and 'Learning Sustainability from Whales'. Dr SWA Naqvi, Distinguished Scientist, CSIR, New Delhi and Dr Victor Smetacek, Professor Emeritus, Alfred Wegener Institute for Polar and Marine Research, Germany delivered the keynote addresses. Four well-rounded panel sessions with eminent experts deliberated the impacts of the changing oceans on the different domains of science and policy over a period of two days —Polar oceans and their degradation; Pollution in the polar oceans; Microplastics and its impact; Biodiversity loss in the Polar oceans; Polar Oceans-Weather and Climate; Maritime Jurisprudence; and Blue Economy. Former Iceland President His Excellency Ólafur Ragnar Grímsson was the Chief Guest for the Webinar and the sessions were chaired by Dr P.S Goel, Dr Shailesh Nayak, Dr M. N. Rajeevan and Vice Admiral Pradeep Chauhan. The distinguished panellists included, Prof Katherine Richardson, Center for Macroecology, Evolution and Climate, University of Copenhagen, Denmark; Dr Ole Arve Misund, Director, Norwegian Polar Institute, Norway; Dr Pushp Bajaj, Associate Fellow, National Maritime Foundation, New Delhi; Dr Ravichandran, Director, NCPOR, Goa; Dr Nalan Koc, Research Director, Norwegian Polar Institute, Norway; Dr Lasse Pettersson, Director, Nansen Environmental and Remote Sensing Centre, Norway; Dr. Asa Lindgren, Swedish Polar Research Secretariat, Sweden; Captain Sarabjeet Parmar, Executive Director, National Maritime Foundation; Dr Rasik Ravindra, Former Director of NCPOR and former Member, UN Commission on the Limits of the Continental Shelf; Dr Paula Kankaanpää, PAME Chair, SYKE, Finland; Dr M Sudhakar, Former Director, Centre for Marine Living Resources and Ecology, Kochi; Dr Atmanand, Director, NIOT, Chennai; H E Armstrong Changan, Ambassador of India to Iceland; Dr Sameer Guduru, Associate Fellow, National Maritime Foundation; Dr John Kurian, senior Scientist, National Centre for Polar and Ocean Research; and Dr Jan-Gunnar Winther, Centre for the Ocean and the Arctic, Norway.

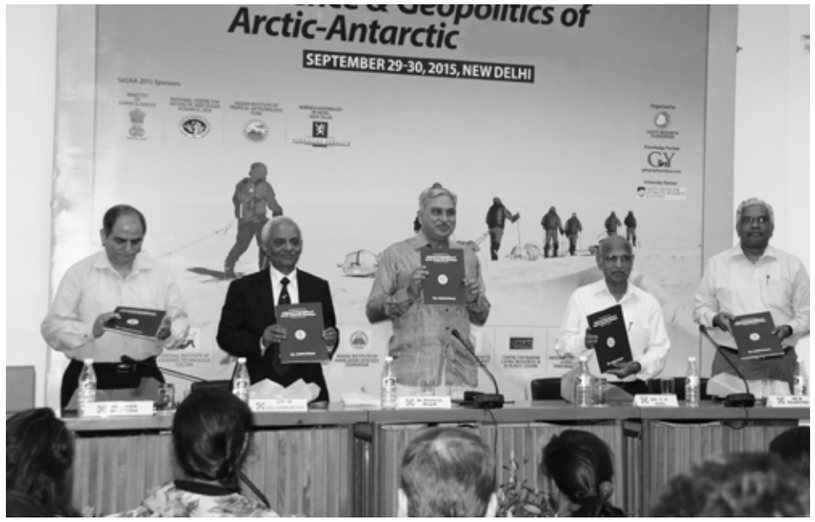
SaGAA V 2019

The international conference was held at the India International Centre, New Delhi, India during November 26-27, 2019 with a focus on technological innovations and research expeditions. Various sessions were organised—current trends in polar sciences, ocean exploration, geopolitics, ice class research vessels, technological innovation as an aid to scientific exploration in Polar areas, building a new Maitri Station, earth station, snow vehicles and ice runways and manning expeditions were discussed. These sessions not only helped to build better understanding of geopolitics but also brought new research in front that is being carried around the globe to understand dynamics and potential of these regions. SaGAA V was graced by the presence of dignitaries of great repute including policymakers, scientists and students interested in Polar research from across the globe. The event was presided over by Dr M N Rajeevan, Secretary, MoES as honourable chief guest. Renowned scientists like Dr Rasik Ravindra, Dr P S Goel, Dr Nalan Koc, Dr B Meenakumari and many more attended the event. Mr Helge Tryti, Commercial Counsellor, Royal Norwegian Embassy and Director of Innovation Norway, India also attended the event. The Antarctic Station was also featured live during the proceedings and scientists manning the station interacted with the dignitaries present.

SaGAA IV 2017

Science & Geopolitics of Arctic and Antarctic, an international conference was held at JNU Convention Centre, New Delhi, India during November 30 and December 1 of 2017 with a focus on climate change. Various sessions were organised—Climate change, health of Himalayan glaciers and its biodiversity, geopolitics of the poles, ocean research, and Arctic and Antarctic cryospheric

research were discussed. Unprecedented changes in environment and morphology and emergence of political interventions is encouraging exploitation of Cryospheric areas laying a major stress and a rise in demand and conflict. Renowned international scientists such as Dr Walter R Roest, Dr Nalan Koc, Dr Arild along with H.E. Nils Ragnar Kamsvag, Ambassador Norway and various other senior scientists and directors of Indian institutions deliberated during the Conference. Dr M.N. Rajeevan, Secretary, Ministry of Earth Sciences was the chief guest with over 17 directors attending the two days of the SaGAA IV Conference, making it a resounding success.



SaGAA III 2015

An international conference was held at India International Centre, New Delhi, India during 29-30 September, 2015. Continuing the practice of previous two SaGAA Conferences it again brought together; thoughts, experiences, researches and advocacies on cold regions. Various sessions were organised—Geopolitics of the Polar regions; Global climate change: Polar region and the third pole; living and non-living resources potential; marine protected areas and geopolitics; tourism industry and the Poles were discussed. Eminent scientists including scientists such as Dr. P.S. Goel, Dr. Shailesh Nayak, Dr. M. N. Rajeevan, Dr. Sanjay Chaturvedi, Dr. Uttam Kumar Sinha, Dr. R. Krishnan, Dr. Geir Moholdt, Dr. Anil V Kulkarni, Dr. M.R. Bhutyani, Dr. David E. Rheinheimer,

Dr. Ravishankar, Dr. Rajan, Dr. Rasik Ravindra, H E Thórir Ibsen, Marcus Holknekt, HE Grahame Morton and HE Sergey A Borovik contributed to the conference. It was an interactive conference with more than 100 cold region enthusiasts attending the Conference.

SaGAA II 2012

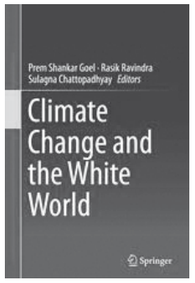
Held in continuation to SaGAA National 2011, an International Conference was held between March 9 and 11, 2012, successfully holding myriad sessions on geopolitics: UNCLOS and the global commons geopolitics of the global realms; biotechnology: microbial resources in Polar regions dynamics in Polar marine biodiversity (prokaryotes, vertebrates and invertebrates); information exchange and intellectual property rights; resources of the Southern Ocean; ice core for paleo climate; Southern Ocean and solar impact: sea ice melting; Polar atmospheric research: Ozone depletion; meteorological studies. Some of the senior scientists present were Dr. P S Goel, Dr. Shailesh Nayak, Dr. S.W.A. Naqvi, Prof. S. K. Tandon, Prof. John Turner, Dr. Timo Koivurova, Dr. Victor Smetacek, Dr. John P. Bowman, Prof. Nalan Koc, Prof. John M. Reynolds, Dr. George John, Dr. S. Shivaji, Dr. B. Meenakumari, Dr. S. Rajan, Dr. Ramesh, Dr. Rasik Ravindra apart from representatives from the countries such as United Kingdom, Finland, Germany, Australia, Norway and Chile. The participation of about 100 scientists was observed in the Conference.

SaGAA I 2011

The first National Conference on Science and Geopolitics of Arctic and Antarctic was held between January 14-15, 2011. Introducing India's Antarctic vision to the dignitaries present, Dr P C Pandey, set the framework of all future interactions and deliberations. Other sessions held discussed India's logistical needs in the Antarctica and the policy foothold of the nation in the region. The sessions saw the gathering of eminent scientists such as Dr. Shailesh Nayak, Dr. Ajit Tyagi, Dr. N. C. Mehrotra, Dr. Anil K. Gupta, Dr Rasik Ravindra, Dr. S. Shivaji, Dr. V.M. Tiwari, Dr. T. Meloth, Dr. Subba Rao, S. K. Mehta and many more. Dr S. K. Das and Dr. Ravindran and Dr. M. Sudhakar also attended the proceedings. It was an extremely successful event which paved the way for the following Conferences on the subject.

SaGAA BOOKS

At the culmination of each SaGAA event, the advisory, patrons and organising committee curates eminent works presented during the proceedings. The speakers are invited to contribute a paper. Over the next year the SaGAA secretariat works to put together a manuscript. The book that emerges is peered at various levels before being published. Two of our books have been published by Springer. SaGAA VI too envisages a book as an academic outcome of our endeavours .



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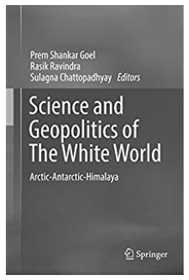
Editors:
Prem Shankar Goel
Rasik Ravindra
Sulagna Chattopadhyay
Springer: July 2019



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

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

SaGAA MAGAZINES

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 SaGAA 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 SaGAA's mandate, making sure it reaches the right audience consistently.

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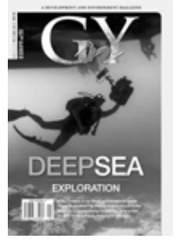

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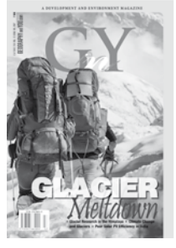

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REGISTRATION | SaGAA 7

SaGAA 2023 will highlight the science, policy and geopolitics in the inaccessible areas of Arctic, Antarctic and Southern Ocean from the Indian view-point.

April 27-28, 2023
Event Address:
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SaGAA 2023 invites all institutes and organisations to partner with us. From exclusive ‘invited only’ meeting and exhibit opportunities, to hosting lunch or dinner, there are a variety of interactive spaces available for all. Logo placement in all publications and adverts in led screens, screening of institute/ ministry/ company films during lunch and tea are all possible.

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