Advt. No.: NCPOR.11.2023
CALL FOR PROPOSALS FOR
SCIENTIFIC RESEARCH IN THE ARCTIC REGION
(November 2023 - March 2024)

Annexures

Annexure I: Study area:

Svalbard: Ny-Ålesund, Broggerhalvoya, Kongsfjorden and Krossfjorden

Background

Ny-Ålesund located at 79°N is the world's northernmost year-round research base that provides unique access to a natural polar laboratory. As the Arctic is warming four times as fast as the rest of the globe, and the Svalbard region is warming fastest within the Arctic, Ny-Ålesund Research Station in the north-western part of Spitsbergen, Svalbard, is a unique platform for climate change studies and is a key location for natural science research and environmental monitoring in the high Arctic. Though remote, it is easily accessible and offers extensive research infrastructure.

Svalbard: Svalbard (meaning "Cold Coast") archipelago, part of Norway, located in the Arctic Ocean well north of the Arctic Circle. The islands lie between longitude 10° and 35° E and latitude 74° and 81° N, about 580 miles (930 km) north of Tromsø, Norway. The archipelago is composed of nine main islands: Spitsbergen (formerly West Spitsbergen), North East Land, Edge Island, Barents Island, Prins Karls Foreland, Kvit Island (Gilles Land), Kong Karls Land (Wiche Islands), Bjørn (Bear) Island, and Hopen. The total area of Svalbard is 24,209 square miles (62,700 square km). Spitsbergen, with an area of 15,075 square miles, is the largest island of Svalbard.

Ny-Ålesund: Ny-Ålesund located at 79°N is the world's northernmost year-round research base that provides unique access to a natural polar laboratory. India has a research station in Ny-Ålesund named 'Himadri'

Brøggerhalvøya: Brøggerhalvøya is a peninsula in Oscar II Land on the west coast of the island of Spitsbergen in Svalbard. It is 20 kilometers (12 mi) long and 10 kilometers (6.2 mi)

wide and borders Kongsfjorden to the north and Forlandsundet to the west. Ny-Ålesund, the world's northernmost permanent settlement, is located on the peninsula.

Kongsfjorden: Kongsfjorden is an Arctic fjord located in the Svalbard archipelago. Its hydrography is influenced by the warm and saline Atlantic Water (AW) in the West Spitsbergen Current and the cold and fresh Polar Water circulating on the shelf. Ny-Alesund, the research base, is located on the southern shore of Kongsfjorden.

Krossfjorden: Krossfjorden is a fjord adjacent to Kongsfjorden. Both fjords share a common mouth.

1- Himadri
2- Gruvabadat Atmospheric Laboratory
3- Marine Lab

Ny-Ålesund is situated on the southern shore of Kongsfjorden, one of the many deep and wide fjords on Spitsbergen's west coast. Its geographic position, varied topography and prolific representation of bird, animal and plant life, make it ideal for research. The ice-capped interior is dotted with the pointed nunataks which gave the island its name. The steep mountains along the coastal fringe are interspersed with glaciers, some of which terminate in the sea. The coastline (45 km around Broggerhalvoya) has a star flat (snow-free mid-June to September) with tundra, alluvial plane and braided streams. Kongsfjorden is approximately 28 kilometers long.

Climate

A northern branch of the Gulf stream produces a climate on Spitsbergen's west coast which is unusually "warm" for its extreme northerly position. The west is mostly free of sea ice during the summer months/ the north and east have colder temperatures and are choked with fast or pack ice during most of the year.

Ny-Ålesund	78° 55'N 11° 56'E
Period of midnight sun	21 April to 21 August
Period of polar night	28 October to 14 February

Mean July temperature	+5.0°C
Mean February temp.	-14.0°C
Annual precipitation	371 mm

Reference: Ny Ålesund Safety Guide, 2nd Edition

Annexure II: Himadri and Gruvabadet Atmospheric Laboratory

HIMADRI is India's first research station located at the International Arctic Research base, NyÅlesund, Svalbard. The station was inaugurated on the 1st of July 2008. The station caters to the sustained interest of Indian researchers to pursue scientific studies in the Arctic. The 'Himadri' consists of office space, a preparatory laboratory and accommodation for 8 researchers at a time. The office space has computer systems and an internet facility.

Gruvebadat Atmospheric Laboratory is an atmosphere laboratory and observatory located midway between Ny-Ålesund, the Zeppelin observatory and the Climate Change Tower. India has a dedicated portion of the lab to install its instruments. At present, the lab has a microwave radiometer profiler, micro rain radar, ceilometer, nephelometer, aethalometer, aerodynamic particle sizer, net radiometer, and sun photometer.

Himadri, Ny-Ålesund, Svalbard

Gruvabadet Atmiospheric Laboratory, Ny-Ålesund, Svalbard

Annexure III: Facilities provided by Kings Bay AS

1. Marine Laboratory

The Kings Bay Marine Laboratory in Ny-Ålesund, owned and managed by Kings Bay AS, is the first common research infrastructure in Ny-Ålesund. It is the northernmost experimental laboratory for research in marine ecology, physiology, and biochemistry, as well as physical sciences like oceanography, marine geology and ice physics. The laboratory is located right on a beach with easy access to boats. It contains smaller rooms with system-controlled experimental variables like air and seawater temperature. It is also appropriate for experiments under ambient conditions.

2. Veksthuset Laboratory

The terrestrial laboratory Veksthuset is located in the middle of Ny-Ålesund and includes dry and semi-wet lab facilities.

3. MS Teisten

MS Teisten is a small workboat operated by Kings Bay AS. The boat is 31 feet long and equipped to do smaller scientific operations, transportation and survey in Kongsfjorden and Krossfjorden. Safety equipment is available on board (life raft, life belts and survival suits). For scientific work, the maximum number of passengers on board is restricted to four.

Annexure IV: Resource websites and links to know the study area and ongoing research

Research in Svalbard (RiS): https://www.researchinsvalbard.no/

The Research in Svalbard database (RiS) contains information about research and monitoring projects in Svalbard and surrounding waters. All the ongoing and completed projects in Svalbard are listed in the portal. The portal is used by the registered users to submit applications and reports to the Governor of Svalbard for research activity, and book services in Ny-Ålesund Research Station.

The portal contains the research strategy of Svalbard and Ny-Alesund, which will help you in making our proposal appropriate to the study area. The portal also contains guidelines for researchers coming to Svalbard and Ny-Ålesund Research Station, which will be useful for both before and after a proposal is approved.

Svalbard Integrated Arctic Earth Observing System: https://www.sios-svalbard.org/

SIOS is a regional observing system for long-term measurements in and around Svalbard addressing Earth System Science questions. SIOS integrates the existing distributed observational infrastructure and generates added value for all partners beyond what their individual capacities can provide.

SIOS brings observations together into a coherent and integrated observational programme that will be sustained over a long period. Within SIOS, researchers can cooperate to access instruments, acquire data and address questions that would not be practical or cost-effective for a single institution or nation alone.

NCPOR is a member institution of SIOS.

Annexure V: Assessment format for the continuing projects

Name of the project	
Name of the PI, affiliation and contact details	
Period of field access	
Details of sampling	
Details of analysis	
Results (in 250 words)	
Discussion	
Conclusion	
Output (in terms of publications, reports and PhDs) *Due acknowledgement should be given to the MoES and NCPOR in the publications.	
Whether data submitted to NCPOR (if not, please submit it before applying for new field access)	