

**Arctic Observation:
Contribution from Asian Forum for Polar Sciences (AFoPS)**

AFoPS Secretariat
on behalf of
AFoPS Arctic research community

Introduction

The Asian Forum for Polar Sciences (AFoPS) established in 2004, is a non-governmental organization set up to encourage and facilitate cooperation for the advance of Antarctic and Arctic sciences among Asian countries. The AFoPS currently consists of five Members - China, India, Japan, Malaysia, and the Republic of Korea - with a growing number of observers from Thailand and many more.

Towards the end of the first decade, the AFoPS has become an important medium of collective endeavors in human and information exchange, research collaboration, and logistics cooperation among the Asian polar science institutions.

Research infrastructures of AFoPS members now encompass much of the Arctic, both oceanic and terrestrial realms. Ice breaking or ice strengthened research vessels from China, Japan and Korea regularly sail the Arctic waters. Four members maintain research stations in Svalbard and many more observation posts around the Arctic. These facilities can be well connected and offered for international collaboration.

Logistic capabilities of AFoPS are reaching a level that can make significant data contribution to a circum-Arctic perspective. Human expertise and enthusiasm are also growing. It is timely to offer this possibility to the wider polar community in contribution to a sustained Arctic observing system.

Current activity and research infrastructure of AFoPS Members

Xuelong, the powerful Chinese research icebreaker, sails every other year to Pacific Arctic waters mid-summer, usually August to September. The Chinese program undertakes a fairly extensive, multi-disciplinary survey in areas such as oceanography, biology and geology. Reaching out to the northernmost edge of the sea ice to survey deep in the icy Arctic waters was often attempted in the Chinese research voyages. A number of focused investigations in

hydrographical/biogeochemical processes and biodiversity were conducted in a number of locations in the Arctic Ocean including the Canada Basin and the Bering Basin. Chinese Arctic station Yellow River in Svalbard also support a range of observational activities.

The first Indian Arctic expedition in August 2007 has marked a beginning of long-term scientific research by Indian scientists in yet another arena of global scientific collaborative research in the Polar Regions. In 2008, a research base ‘Himadri’ station was established in Ny-Alesund to mark the IPY and to give a thrust to our endeavor in Polar Science. Recent deployment of IndARC, the country’s first underwater moored observatory in the Kongsfjorden fjord, half way between Norway and the North Pole, represents another milestone in India’s scientific endeavors in the Arctic region.

In response to the rapid change of the Arctic environment, the Japanese ministry to support science and technology, MEXT, started the Arctic Climate Change Research Program in 2011 as one of the new national projects, “Green Network of Excellence (GRENE)”. In order to strengthen Arctic research and contribute to the international community, MEXT initiated the next 5-year program called “Arctic Challenge for Sustainability (ArCS)”. This program focuses on 1) understanding changes in the Arctic holistically as well as its global impacts through comprehensive and integrated research, 2) understanding causes and mechanism of these changes, 3) predicting future changes and assessing the subsequent socio-economic impacts, and 4) delivering robust scientific information to stakeholders.

Korea Polar Research Institute (KOPRI), the lead agency of the Korean national polar program, undertakes Arctic observations supported by some of its major research projects. Oceanography and remote sensing group conduct multi-disciplinary research survey every summer in the Pacific side of the Arctic waters, mostly in Chukchi Sea and further north. Its research icebreaker Araon has been used as a deployment platform for ocean and sea ice buoys and moorings of many international partners. The terrestrial program focuses on permafrost ecosystem and greenhouse gas dynamics, running observation posts at a number of Arctic locations including Svalbard and Alaska. KOPRI’s field observation data will be incorporated into modelling efforts that have already begun to determine the climate linkages between the Arctic and mid latitude.

Malaysian polar program, yet to possess its own field infrastructure, has taken a great deal of interest in understanding the climatic connection between the changes in the polar region and lower latitude phenomenon. It also dispatches some of its scientists to Arctic field sites to observe and collect specimens and samples with support of AFoPS Members and other partners.

Concluding remarks

After marking the tenth anniversary in 2014 as well as a chairmanship transfer, the AFoPS is now gearing for a big leap in the next decade. This is also the time when we see a large expansion in research infrastructure and investments among the Asian polar programs. The AFoPS pursues elevated and more sustained Arctic observations by concerted use of its research

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infrastructures in both land and ocean. The AFoPS members have so far accommodated a number of foreign researchers on board or at stations as opportunities develop and will continue to do so.

A regional alliance with a global perspective has every good reason to become a network of active cooperation hubs for other members of the Arctic observing community. The AFoPS secretariat aims to coordinate this process and is prepared to receive expressions of interest and facilitate consultation as such cooperation is better mediated and implemented with collective effort. Please write to international@kopri.re.kr.