

# Status Report on Korean Arctic Research in 2008

FARO Business meeting

Bergen, Norway

## 1. Construction of Korean Ice Breaker, ARAON

- A. The Korea's icebreaker (ARAON), which is scheduled to be completed by the end of 2009, is currently under construction. She is 6,950-ton icebreaker and designed for operation in one-meter-thick-multiple-year ice condition (KR PL-10) with 3 knot speed per hour and will be equipped with twin Azimuth propulsion units driven by diesel-electric propulsion plant. She will accommodate up to 85 persons, including 25 crew members.
- B. After keel-laying in May of 2008 and launching and delivery in 2009, she is planned to be commissioned for scientific research and logistic purposes in both Antarctic and Arctic region. Korea expects that the icebreaker would enhance the capability of conducting scientific research in polar region with upgraded efficiency and quality.
- C. KOPRI is preparing for the 16<sup>th</sup> International Symposium on Polar Sciences in this coming June in Incheon, Korea. This symposium will be focused on the research activities using icebreaker.
- D. It will cruise to the Antarctic in Jan 2010 for the logistics, ice trail and research purpose. It can be used in the Arctic around June or July. The Arctic cruise schedule is still tentative because of the budget process, which will be settle down around Sep. 2009.



## 2. Research Activities in Dasan Arctic Research Station

- A. Fifty seven Korean scientists carried out in the field of atmospheric sciences and biology in Dasan station in 2008.
- B. Atmospheric Sciences
- i. Korean scientists carried out micrometeorological research in 2008 as a part of the integrated research on COMposition of Polar Atmosphere and Climate Change (COMPAC) project.
  - ii. For glacier study, Korean scientists did observation the retreat of glaciers around NyAlesund as a part of COMPAC project to eventually find out the cause of the marked climate change occurred in the Arctic 2008 project.
  - iii. In the field of atmosphere composition study, Korean scientists visited three times to demount the Dimethylsulfide (DMS) measurement system for modification.
- C. Biology
- i. Korean scientists involved in the sea-ice, snow, glacier bacteria & microalgae study visited station to collect low-temperature adapted organisms and research the ecophysiological mechanisms of those organisms in the Arctic area.
  - ii. For study on the community structure and function of marine and terrestrial ecosystem, five scientists collected marine bacteria, microalgae, and terrestrial organisms from several stations to study community structure and to elucidate environmental parameters determining the structure.
  - iii. Korean scientists visited the station and took some samples for their study on the biodiversity of various organisms around the Korean Arctic Research Station.
  - iv. Korean scientists working for the project of Optimum Utilization of Satellite Data for Polar Research visited the station to review the sampled data and satellite for study on an influence of climate change for Polar region.
  - v. The scientific activities of collecting samples was conducted at Kongsfjorden bay for the assessment of the distribution and accumulation characteristics of long-range transportable persistent organic pollutant (POPs)
  - vi. The scientists participating in the study on petrology and paleoclimate visited to collect some samples for their survey for dating the formation age of the patterned ground distributed in Ny-Alesund.



### 3. Cooperative Researches in the Arctic

- A. Korean scientists participated and carried out the research project - Species compositions and primary productions of phytoplankton and ice algae in the Arctic Ocean - by sharing Chinese icebreaker Xuelung in August, 2008.
- B. Visit on Canadian Resolute Base
  - i. Korean scientists and staffs visited the Canadian Resolute Base which is located in the middle of North West Passage for the discussion on future collaboration between KOPRI and PCSP (Polar Continental Shelf Project), Canada.
  - ii. PCSP hosted the workshop for future joint research and cooperation with KOPRI in the Arctic research in July, 2008.



### 4. Application for the observer status of the Arctic Council

- A. Korea submitted its application for the observer of the Arctic Council in May, 2008 to promote the collaboration and cooperation with other countries in the fields of Arctic research.
- B. Senior Arctic Officer's (SAO) meeting in Kautokeino in November, 2008 and Copenhagen in February, 2009.



## 5. EC-Korea 2nd Joint Science and Technology Cooperation Committee Meeting

- A. Korea and EC have made a discussion for the collaboration and cooperation in the fields of polar research and activities such as SIOS project.
  - i. Teleconference: December, 2008
  - ii. EC-Korea Joint S&T Cooperation Committee Meeting: 3-4 March, 2009, Brussels
  
- B. Korea and EU agreed to promote Korean scientists' involvement in the SIAEOS (SIOS) project identified in 2008 ESFRI Roadmap.
  
- C. Korea is going to participate in the international project Svalbard Integrated Arctic Earth Observation System (SIOS) which is supported by ESFRI under FP7.

