

OUTLINE FOR CHINA'S RESEARCH PROGRAM RELATED TO ARCTIC-SBI

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1. China's initiation for Arctic studies and scenarios of future plan

a) Expeditions in 1995 and 1999 in Arctic

China organized Arctic expedition to the pole by ski in 1995. Another expedition in Bering Sea and Chukchi Sea by research vessel is carried out in 1999 (see Figure 1 of the Chinese icebreaker).

b) International collaboration studies

As the initiative studies, China sent some young scientists to other country for learning research method and technology, such as meteorological studies in Svalbad, biological studies in US and Germany, and ocean dynamic studies in US and Japan.

c) Future national plans for Arctic study.

Since recent years, China government pays more attention to ocean science, include polar science. Next year is the first year of following five-year scientific plan, so the programs in following five years are being prepared. Some cruises to Arctic Ocean will be organized. Some long-term studies are going to implement in Svalbad's lab. More international collaboration with scientists will be encouraged.

d) Funding status

Main funding in China is from three aspects. Funding for certain Arctic research program is applied from government. NSF supports projects applied by scientists. Routine Arctic research funding is applying.

2. Main research subjects correlated to SBI

a) Water exchange of Arctic and Pacific and its action on lower latitude region

Water exchange by Bering Strait.

Effect of Arctic processes on the current system of North Pacific

Circulations in shelf seas and deeper ocean.

b) Ice cover and thickness change and its action on global climate change

Dynamic processes along ice edge.

Numerical modeling of sea ice and coupled model with ocean model and MM5.

Ice processes analysis by satellite data (AVHRR and SAR)

Correlation of Arctic ice drifting and NAO.

Energy budget and unbalance in Arctic.

c) Warming of middle layer water of Arctic and vertical water exchange

Inter-annual variation of middle layer warming and change in upper layer water.

Vertical material exchange and circulation along shelf slope area.

Correlation among ice variation, discharge of rivers, Arctic climate.

d) Arctic environmental and biological studies

Climate change records in sediment.
Elements as tracers and indicators.
Atmospheric physics in high altitude.
Fresh water and material diffusion in Arctic Basin.

3. Ideas in national and international partnerships

a) Take part in international observations for major topic in certain region.

China scientists are interested in collaboration with international observation plans in Canadian Basin, Svalbad, Bering Strait, heat budget, Arctic buoys, etc. China's observation plan can be adjusted to suit the international research needs.

b) Encourage the studies in Arctic processes.

As China is a non-Arctic country, the main research topics of China in Arctic are those correlated with climate change, water exchange, and Arctic system. Systematic studies for main processes in Arctic will be encouraged in China and hope to contribute to related international programmes.

c) Promote the data exchange about Arctic ocean and atmosphere.

Data sharing for Arctic study is possible in China. Though few data we have had, contribution from all countries should be encouraged in pushing the Arctic study.

d) Collaboration about vessel sharing and carrying.

The coordination for ice-breaker expedition plans in different country should be promoted in order to create synchronous observations opportunities.

