

and share responsibilities and achievements. In future, China will adhere to the Scientific Outlook on Development, improve its rare earth policies, reinforce supervision over the industry, and work closely with the international community to safeguard a fair and rational order of the rare earth market, better coordinate rare earth development and utilization with the protection of the environment and resources, and make new contributions to the world's economic growth and scientific and technological development.¹⁴⁴⁷

8.7.13 Polar research

Polar Research has been already discussed in detail in **Chapter VI Defence under subheading 6.2.5 Notable Event: China in Arctic.**

Polar Research Institute of China (PRIC) founded in 1989, dedicates itself to the scientific research and logistic support for the polar expedition. The main functions of PRIC are

- 1) to conduct research of science, technology and strategic issues in the polar regions;
- 2) to undertake environments monitoring and conservation in the polar regions;
- 3) to operate research stations, vessels and aircrafts and provide logistic supports to Arctic/Antarctic research expeditions;
- 4) to carry out education and outreach of polar science and promote international cooperation.

The Division of polar strategic studies within PRIC, founded in 2009, takes the responsibilities of the tracing and analysis of the polar circumstances, and the research on the strategic issues in the domains of polar politics, economy, science & technology, as well as security. It shall provide advices for the national decision-making related to the Polar Regions and build the brand of an influential think-tank with regard to the polar strategic studies.¹⁴⁴⁸

The State Council Information Office of China released its **Arctic white paper *China's Arctic Policy*** on January 26th, 2018. It's the first official document that China issued to clarify its basic positions, policy goals and major polices on Arctic affairs. While China's Arctic activities have been for a long time, the development of its position towards the Arctic emerged from about only ten years ago.

1. A brief history of China's Arctic activities

China's Arctic activities started from 90 years ago. 1925 is the officially recognized starting point, when the then Chinese government signed the *Spitsbergen Treaty* or the *Svalbard Treaty*. According to this treaty, Chinese citizen and company have access to Svalbard and the right to undertake any kind of maritime, industrial, mining or trade activity. Compared with other affairs, the Arctic is not important in China's agenda for a rather long time. In fact, China didn't undertake any significant activities in the Arctic for more than 60 years after 1925. However, as the reform and opening up policy proceeded in an all-round way and the Arctic region's de-securitization process unfolded after the

¹⁴⁴⁷ Information Office of the State Council White Paper titled "Situation and Policies of China's Rare Earth Industry" issued in June 20, 2012, available online at URL:

<http://www.china-embassy.org/eng/zt/bps/t943727.htm>

¹⁴⁴⁸ China-Nordic Arctic Research Centre, Polar Research Institute of China (PRIC)

<https://www.cnarc.info/members/21-polar-research-institute-of-china>

Cold War, China renewed its focus on the Arctic. In 1995, a group of Chinese scientists and journalists travelled to the North Pole and conducted research. It's the first North Pole expedition that China organized. In 1996, China became a member of the International Arctic Science Committee. In 2004, China built the Arctic Yellow River Station, its only Arctic station in Svalbard's Ny-Ålesund.

China's Arctic activities intensified and expanded into diverse areas such as Arctic global governance and economic development in the 21st century. According to *China's Arctic Policy*, China has carried out 8 scientific expeditions in the Arctic Ocean with its research vessel *Xue Long* (Snow Dragon), and conducted research for 14 years with the Yellow River Station as the base by the end of 2017.¹⁴⁴⁹ In 2013, China was granted permanent observer status by the Arctic Council. In recent years, Chinese enterprises conducted several commercial trial voyages in Arctic shipping routes. For example, the freighter *Yong Sheng* (Eternal Prosperous), which belongs to China's largest shipping enterprise COSCO (China Ocean Shipping Company), passed the Northeast Passage in 2013, became the first Chinese merchantman to do that. China also begins to participate in Arctic energy exploitation and infrastructure construction. The Sino-Russian Yamal LNG project, which went into production in December 2017, has attracted great attention.

2. The development of China's position before the white paper

It's not problematic that China didn't think it's necessary to clarify its Arctic policies and position when its Arctic activities are sporadically conducted and scientific research is the major, or even the only activity. As China's economic power increased sharply and its Arctic activities intensified in recent years, however, the international society, especially the Arctic states, is deeply concerned that how will China employ its powerful scientific and economic strength, what's its aim in the Arctic, and whether China will respect Arctic states' rights. After the other major "Non-Arctic states" such as South Korea, Japan, Germany and UK issued their Arctic strategies, China's Arctic policy and position paper is constantly called for.

In fact, China did try to clarify its Arctic position several times before the release of the white paper. This can be traced back to the speech made by Hu Zhengyue, the then assistant minister of foreign affairs, in 2009 at the High North Study Tour, which was organized by Norwegian government.¹⁴⁵⁰ In his speech, Hu underscored China's support for the Arctic Council, the *Svalbard Treaty* and the Arctic related content of the *United Nations Convention on the Law of the Sea* (UNCLOS). China's respect for the sovereignty and jurisdiction enjoyed by the Arctic states was emphasized as well. He also pointed out

¹⁴⁴⁹ According to the information published by Chinese Arctic and Antarctic Administration, China's second icebreaker *Xue Long 2*, a product of China's cooperation with Finland, will enter into service in 2019. As referred in China Institute of International Studies (CIIS) titled "Arctic white paper *China's Arctic Policy*" on January 26th, 2018 written by **Liu Jin***, edited by Wang Jiawei available online at URL: http://www.ciis.org.cn/english/2018-07/09/content_40413210.htm

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¹⁴⁵⁰ "中国对北极事务的看法——外交部胡正跃部长助理在'北极研究之旅'上的报告"[China's Views on Arctic Affairs---Assistant Minister of Foreign Affairs Hu Zhengyue's Report at the 'High North Study Tour'], *Shijie Zhishi*, No. 15, 2009, pp. 54-55.

As referred in China Institute of International Studies (CIIS) titled "Arctic white paper *China's Arctic Policy*" on January 26th, 2018 written by Liu Jin, edited by Wang Jiawei available online at URL: http://www.ciis.org.cn/english/2018-07/09/content_40413210.htm

that the existing Arctic legal order needs to be gradually updated according to the changes of the situation; the Arctic coastal states should balance their interests with international community's common interests when defining the limits of the outer continental shelves.

China became the permanent observer of Arctic Council in 2013, which means by accepting the Council's revised criteria for admitting observers, the most sensitive of which is "Recognize Arctic States' sovereignty, sovereign rights and jurisdiction in the Arctic",¹⁴⁵¹ China formally made its position on the question which is most concerned by the Arctic states known.

Two years later, the Chinese government introduced its Arctic activities and policies comprehensively for the first time at the third Arctic Circle Assembly. In his video message, the foreign minister Wang Yi formally put forward the concept that China is a major stakeholder in Arctic affairs. He claimed that China's principles on the Arctic are "respect, cooperation and win-win", China will respect the Arctic States' sovereignty, sovereign rights and jurisdiction in the Arctic, and the legitimate concerns and rights that China enjoyed under international law in the Arctic should be respected too.¹⁴⁵² In his keynote speech at the assembly, the then vice foreign minister Zhang Ming clarified the "stakeholder" concept by pointing out China's geographical position as a "near-Arctic state", which means "the changing natural environment and resources exploration of the Arctic have direct impact on China's climate, environment, agriculture, shipping, trade as well as social and economic development". Furthermore, 6 specific policies regarding Arctic affairs were put forward, in which China's respect and support of the existing Arctic legal order and governance mechanism were emphasized.¹⁴⁵³

3. China's Arctic Policy

China's Arctic Policy, as long as about 9000 words, consists of three parts: Foreword, main body and Conclusion. The main body is further divided into 4 parts, including "The Arctic Situation and Recent Changes", "China and the Arctic", "China's Policy Goals and Basic Principles on the Arctic" and "China's Policies and Positions on Participating in the Arctic Affairs". It will be published in 8 languages including Chinese, English, French, German, Russian, Spanish, Arabic and Japanese.¹⁴⁵⁴ According to Kong Xuanyou, the vice foreign

¹⁴⁵¹ <http://arctic-council.org/index.php/en/about-us/arctic-council/observers>.

As referred in China Institute of International Studies (CIIS) titled "Arctic white paper *China's Arctic Policy*" on January 26th, 2018 written by Liu Jin, edited by Wang Jiawei available online at URL:

http://www.ciis.org.cn/english/2018-07/09/content_40413210.htm

¹⁴⁵² "王毅部长在第三届北极圈论坛大会开幕式上的视频致辞"[Video Message by Foreign Minister Wang Yi At the Opening Ceremony of the Third Arctic Circle Assembly], October 17th, 2015,

http://www.fmprc.gov.cn/mfa_eng/wjb_663304/wjbz_663308/2461_663310/t1306857.shtml.

As referred in China Institute of International Studies (CIIS) titled "Arctic white paper *China's Arctic Policy*" on January 26th, 2018 written by Liu Jin, edited by Wang Jiawei available online at URL:

http://www.ciis.org.cn/english/2018-07/09/content_40413210.htm

¹⁴⁵³ "外交部副部长张明在'第三届北极圈论坛大会'中国国别专题会议上的主旨发言"[Keynote Speech by Vice Foreign Minister Zhang Ming at the China Country Session of the Third Arctic Circle Assembly], October 17th, 2015, http://www.fmprc.gov.cn/mfa_eng/wjdt_665385/zyjh_665391/t1306858.shtml.

As referred in China Institute of International Studies (CIIS) titled "Arctic white paper *China's Arctic Policy*" on January 26th, 2018 written by Liu Jin, edited by Wang Jiawei available online at URL:

http://www.ciis.org.cn/english/2018-07/09/content_40413210.htm

¹⁴⁵⁴ For the English edition, see <http://www.scio.gov.cn/zfbps/32832/Document/1618243/1618243.htm>.

minister who briefed the press, the white paper will be updated in the future according to the changes of the situations.

It's clearly announced in the white paper that China is an important stakeholder, and it determines to participate in Arctic affairs actively or in the words of Kong, China will not "absent itself from the Arctic affairs". First, as mentioned above, China treats itself as geographically a "Near-Arctic State", which means "the natural conditions of the Arctic and their changes have a direct impact on China". Second, as signatory to Arctic related international treaties such as the UNCLOS and the *Spitsbergen Treaty*, and the permanent member of the UN Security Council, China enjoys certain rights such as "the freedom of scientific research, navigation, over flight, fishing, laying of submarine cables and pipelines, and resource exploration and exploitation in the high seas" and other relevant areas in the Arctic, and shoulders important responsibilities of "jointly promoting peace and security in the Arctic". Third, as a major trading nation and energy consumer in the world, China may be hugely impacted by the exploration and development of the resources and the utilization of sea routes in the Arctic. Fourth, China can be expected to contribute to the development of the Arctic region. In short, China regards itself as "an active participant, builder, and contributor in Arctic affairs".

Accordingly, the white paper sets China's policy goals on the Arctic as "to understand, protect, develop and participate in the governance of the Arctic", and China's basic principles as "respect, cooperation, win-win result and sustainability". 5 specific policies and positions are put forward:

1. Deepening the exploration and understanding of the Arctic;
2. Protecting the eco-environment of the Arctic and addressing climate change;
3. Utilizing Arctic resources in a lawful and rational manner;
4. Participating actively in Arctic governance and international cooperation;
5. Promoting peace and stability in the Arctic.

In the white paper's detailed elaboration of these goals, principles, policies and positions, four aspects are most noteworthy. First, China's respect for the rights and laws of the Arctic states, the tradition and culture of the indigenous peoples are repeatedly emphasized, China's exploration and utilization of the Arctic will abide by related treaties and general international law. Apparently, China wants to reassure the Arctic states about its activities in the Arctic.

Second, the existing Arctic legal system and governance mechanism are highly valued. It is the treaties and international laws mentioned above that give China the rights to participate in Arctic affairs. Besides, China will seek international cooperation when engage with the Arctic, without which its activities, especially the exploitation and utilization of Arctic resources will become very difficult, even unimaginable.

Third, Arctic scientific research and environment protection are placed in an important position. "To explore and understand the Arctic serves as the priority and focus for China in its Arctic activities", the white paper reads. Fragility of the ecosystem of the Arctic is

As referred in China Institute of International Studies (CIIS) titled "Arctic white paper *China's Arctic Policy*" on January 26th, 2018 written by Liu Jin, edited by Wang Jiawei available online at URL:

http://www.ciis.org.cn/english/2018-07/09/content_40413210.htm

fully realized, and China's will to protect the environment in its Arctic activities is repeatedly emphasized.

Fourth, the concept of "Polar Silk Road" is put forward and incorporated into China's Belt and Road Initiative. The Yamal LNG project, of which the Silk Road Fund holds 9.9% shares, is one of the specific activities. While Russia is the major partner of China in building this "Polar Silk Road" along the Northeast Passage at present, the white paper makes it clear that the Northwest Passage and the Central Passage are not excluded and "China hopes to work with all parties". Infrastructure construction and commercial and regularized operation of the Arctic routes are highlighted.

By releasing the Arctic white paper, the development of China's position towards the Arctic proceeded into a new stage. From now on, China has authoritative guidelines to guide its Arctic activities and *China's Arctic Policy* provides a reasonable basis for the international society to judge the trends of China's Arctic activities in the future.¹⁴⁵⁵

[Note: References from 172 to 178 are Originally published in German as "China als Baumeister in der Arktis: Zum Weißbuch der chinesischen Arktispolitik", *WeltTrends: Das außenpolitische Journal*, Nr. 140, Juni 2018.]

The **State Council Information Office of the People's Republic of China White Paper** titled "**China's Arctic Policy**" published on **Jan 26, 2018**.

China's Arctic Policy: China is an important stakeholder in Arctic affairs. Geographically, China is a "Near-Arctic State", one of the continental States that are closest to the Arctic Circle. The natural conditions of the Arctic and their changes have a direct impact on China's climate system and ecological environment, and, in turn, on its economic interests in agriculture, forestry, fishery, marine industry and other sectors.

China is also closely involved in the trans-regional and global issues in the Arctic, especially in such areas as climate change, environment, scientific research, utilization of shipping routes, resource exploration and exploitation, security, and global governance. These issues are vital to the existence and development of all countries and humanity, and directly affect the interests of non-Arctic States including China. China enjoys the freedom or rights of scientific research, navigation, over flight, fishing, laying of submarine cables and pipelines, and resource exploration and exploitation in the high seas, the Area and other relevant sea areas, and certain special areas in the Arctic Ocean, as stipulated in treaties such as the UNCLOS and the Spitsbergen Treaty, and general international law. As a permanent member of the UN Security Council, China shoulders the important mission of jointly promoting peace and security in the Arctic. The utilization of sea routes and exploration and development of the resources in the Arctic may have a huge impact on the energy strategy and economic development of China, which is a major trading nation and energy consumer in the world. China's capital, technology, market, knowledge and experience is expected to play a major role in expanding the network of shipping routes in the Arctic and facilitating the economic and

¹⁴⁵⁵ Excerpts from China Institute of International Studies (CIIS) article titled "Arctic white paper *China's Arctic Policy*" on January 26th, 2018 written by Liu Jin, edited by Wang Jiawei available online at URL: http://www.ciis.org.cn/english/2018-07/09/content_40413210.htm

social progress of the coastal States along the routes. China has shared interests with Arctic States and a shared future with the rest of the world in the Arctic.

China has long been involved in Arctic affairs. In 1925, China joined the Spitsbergen Treaty and started to participate in addressing the Arctic affairs. Since then, China has exerted more efforts in the exploration of the Arctic, expanding the scope of activities, gaining more experience and deepening cooperation with other participants. China's membership in the International Arctic Science Committee in 1996 marked its more active participation in scientific research in the Arctic. Since 1999, China has organized a number of scientific expeditions in the Arctic, with its research vessel Xue Long (Snow Dragon) as the platform. In 2004, China built the Arctic Yellow River Station in Ny Alesund in the Spitsbergen Archipelago. By the end of 2017, China has carried out eight scientific expeditions in the Arctic Ocean, and conducted research for 14 years with the Yellow River Station as the base. Using its research vessel and stations as platforms, China has gradually established a multi-discipline observation system covering the sea, ice and snow, atmosphere, biological, and geological system of the Arctic. The year 2005 saw China as the first Asian country to host the Arctic Science Summit Week, a high-level conference on Arctic affairs. In 2013, China became an accredited observer to the Arctic Council. In recent years, Chinese companies have begun to explore the commercial opportunities associated with Arctic shipping routes. China's activities in the Arctic have gone beyond mere scientific research, and expanded into diverse areas of Arctic affairs including the platforms of global governance, regional cooperation, and bilateral and multilateral affairs, and such disciplines as scientific research, ecological environment, climate change, economic development, and cultural exchanges. As an important member of the international community, China has played a constructive role in the formulation of Arctic-related international rules and the development of its governance system. The Silk Road Economic Belt and the 21st-century Maritime Silk Road (Belt and Road Initiative), an important cooperation initiative of China, will bring opportunities for parties concerned to jointly build a "Polar Silk Road", and facilitate connectivity and sustainable economic and social development of the Arctic.

III. China's Policy Goals and Basic Principles on the Arctic

China's policy goals on the Arctic are: to understand, protect, develop and participate in the governance of the Arctic, so as to safeguard the common interests of all countries and the international community in the Arctic, and promote sustainable development of the Arctic.

To understand the Arctic, China will improve the capacity and capability in scientific research on the Arctic, pursue a deeper understanding and knowledge of the Arctic science, and explore the natural laws behind its changes and development, so as to create favourable conditions for mankind to better protect, develop, and govern the Arctic.

"Cooperation" is an effective means for China's participation in Arctic affairs. It means establishing a relationship of multi-level, Omni-dimensional and wide-ranging cooperation in this area. Through global, regional, multilateral and bilateral channels, all stakeholders including States from both inside and outside the Arctic, intergovernmental organizations, and non-state entities are encouraged to take part in cooperation on climate change, scientific research, environmental protection, shipping route development, resource utilization and cultural activities.

IV. China's Policies and Positions on Participating in Arctic Affairs

When participating in Arctic affairs, China prioritizes scientific **research**, underscores the importance of environmental protection, rational utilization, law-based governance and international cooperation, and commits itself to maintaining a peaceful, secure and stable Arctic order.

1. Deepening the exploration and understanding of the Arctic

The Arctic holds great value for scientific research. To explore and understand the Arctic serves as the priority and focus for China in its Arctic activities.

China actively promotes scientific expedition and research in the Arctic. China respects the Arctic States' exclusive jurisdiction over research activities under their national jurisdiction, maintains that scientific research in areas under the jurisdiction of Arctic States should be carried out through cooperation in accordance with the law, and stresses that all States have the freedom of scientific research on the high seas of the Arctic Ocean. China is actively involved in multi-disciplinary research including Arctic geology, geography, ice and snow, hydrology, meteorology, sea ice, biology, ecology, geophysics and marine chemistry. It actively participates in monitoring and assessing local climatic and environmental changes, and carries out multi-level and multi-domain continuous observation of atmosphere, sea, sea ice, glaciers, soil, bio-ecological character and environmental quality through the establishment of multi-element Arctic observation system, construction of cooperative research (observation) stations, and development of and participation in the Arctic observation network. China is committed to improving its capacity in Arctic expedition and research, strengthening the construction, maintenance and functions of research stations, vessels and other supporting platforms in the Arctic, and promoting the building of icebreakers for scientific purposes.

China supports and encourages research activities in the Arctic by constantly increasing investment in scientific research, building modernized research platforms, and improving the capacity in, and level of, research on the Arctic. It is making a greater effort to advance research in the fields of natural science, climate change and ecological environment, accelerate the development of basic subjects such as physics, chemistry, life science and earth science, strengthen social science research including Arctic politics, economy, law, society, history, culture and management of Arctic activities, and promote innovation in both natural and social sciences. It is also working to strengthen personnel training and public awareness of the Arctic, support higher learning and research institutions to train professionals specialized in natural and social sciences on the Arctic, build science popularization and education centres, and publish cultural products on the Arctic to improve public knowledge. It actively promotes international cooperation on Arctic research, pushes for an open and inclusive international monitoring network of the Arctic environment, supports pragmatic cooperation through platforms such as the International Arctic Science Committee, encourages Chinese scientists to carry out international academic exchanges and cooperation on the Arctic, and encourages Chinese higher learning and research institutions to join the network of the University of the Arctic.

2. Protecting the eco-environment of the Arctic and addressing climate change

China follows international law in the protection of the natural environment and ecosystem of the Arctic and conservation of its biological resources, and takes an active part in addressing the challenges of environmental and climate change in the Arctic.

(2) Protecting the Ecosystem

The Arctic is home to several endangered species of wild fauna and flora from around the globe. China attaches importance to the sustainable development and biodiversity protection of the Arctic. It conducts scientific evaluation of the impact on the Arctic ecological system caused by global climate change and human activities, strengthens protection of migratory birds and their habitats, organizes **research** on the migration patterns of Arctic migratory birds, improves the adaptability and resilience of the Arctic ecological system, and advances international cooperation in the protection of Arctic species of fauna and flora.

(3) Participating in conservation and utilization of fisheries and other living resources

As fish stocks have shown a tendency to move northwards due to climate change and other factors, the Arctic has the potential to become a new fishing ground in the future. As regards fishing in the high seas in the Arctic Ocean, China has consistently held a firm stance in favour of conservation in a scientific manner and of rational use, and maintains that, while enjoying their lawful right to conduct fisheries research and development in the high seas in the Arctic Ocean, all States should fulfil their obligations to conserve the fishery resources and the ecosystem in the region.

China supports efforts to formulate a legally binding international agreement on the management of fisheries in the high seas portion of the Arctic Ocean. China also supports the establishment of an Arctic fisheries management organization or making other institutional arrangements based on the UNCLOS. China will strengthen survey on and research into the fishery resources in the high seas in the Arctic, carry out appropriate exploratory fishing, and play a constructive part in the management of fisheries in the high seas in the Arctic Ocean. China hopes to strengthen cooperation with the Arctic coastal States on the research, conservation, and utilization of fishery resources. China is committed to properly protecting Arctic biodiversity and advocates transparent and reasonable exploration and utilization of Arctic genetic resources, and fair and equitable sharing and use of the benefits generated by the exploitation of such resources.

4. Participating Actively in Arctic governance and international cooperation

China takes an active part in negotiations over high seas fisheries regulation in the Arctic, and calls for a legally binding international agreement for managing fishery resources in the high seas portion of the Arctic. The agreement should allow scientific research and exploratory fishing activities in the high seas portion of the Arctic, and protect the freedom of all States on the high seas in accordance with international law.

In 2010, China and the United States set up an annual dialogue mechanism for bilateral dialogues on the law of the sea and polar issues. Since 2013, China and Russia have been

conducting dialogues on Arctic issues. In 2012, China and Iceland signed the Framework Agreement on Arctic Cooperation, which was the first intergovernmental agreement on Arctic issues between China and an Arctic State. China also values cooperation with other non-Arctic States. It has conducted bilateral dialogues on the law of the sea and polar issues with the United Kingdom and France. In 2016, China, Japan and the Republic of Korea launched high-level trilateral dialogues on Arctic issues to promote exchanges on policies, practices, and experience regarding Arctic international cooperation, scientific research, and commercial cooperation.

China supports the participation of all Arctic stakeholders in Arctic governance and international cooperation. China supports platforms such as “The Arctic: Territory of Dialogue”, “The Arctic Circle”, “Arctic Frontiers”, “The China-Nordic Arctic Research Center”, in promoting exchanges and cooperation among the stakeholders. China also supports the participation of research institutions and enterprises in Arctic governance with their own expertise put to good use. China encourages research institutions to communicate with foreign think tanks and academic institutions, and supports enterprises to participate in the commercial development and utilization of the Arctic in a lawful and orderly manner.¹⁴⁵⁶

8.7.14 Space science

8.7.14.1 History

China’s First Artificial Satellite

National Space Science Centre of China (NSSC) was established by **Chinese Academy of Sciences** (CAS) in 1958 with the mandate to develop China’s first artificial satellite, Dongfanghong-1 (DFH-1). The center’s founder, Prof. Jeoujang Jaw, a distinguished space scientist, was one of the fathers of China’s first artificial satellite.

In October 1957, the first artificial Earth satellite, Sputnik 1, was successfully launched by the Soviet Union, ushering in a new era of political, military, technological and scientific development. The following year, leading Chinese scientists Prof. Hsue-shen Tsien and Prof. Jeoujang Jaw made a proposal to establish China’s artificial satellite program. On May 17, 1958, Chairman Mao Zedong officially stated that China should develop its own satellite.

CAS shouldered responsibility for this project. In no time, several institutes were set up to take charge of payload development and system design for the satellite program. The program, called the “581 Mission,” was made the nation’s top scientific priority in 1958. Dr. Hsue-shen Tsien was named program chief, with Dr. Jeoujang Jaw and Mr. WEI Yiqing as deputy chiefs.

¹⁴⁵⁶ Excerpts of The State Council Information Office of the People’s Republic of China white paper titled “China’s Arctic Policy” published on Jan 26, 2018, available online at URL:

http://english.www.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm