

# Non Traditional Security Digest

India and the Antarctic

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## India and the Antarctic

### Antarctic and Antarctica: Understanding the Key Difference

The polar region south of the Antarctic Circle (66°33'49.4" south of the Equator) is known as **Antarctic**. The 'Antarctic' comprises the continent of Antarctica, the Kerguelen Plateau and other island territories located on the Antarctic Plate or south of the Antarctic Convergence. It also includes the ice shelves, waters, and all the island territories in the Southern Ocean situated south of the 'Antarctic Convergence'. Antarctic convergence is kind of a curve that continuously encircles the 'Antarctic' region and this is a point where the cold water of the Antarctic meets the warmer water of sub-Antarctic region.

**Antarctica**, on the other hand, is a part and a continent within the Antarctic region. In terms of area, Antarctica is the fifth-largest continent in the world. Antarctica does not have any native human population other than the presence of scientists from different parts of the world at their respective established bases. There is also no sovereign state located on this continent although seven states namely New Zealand, Australia, France, Norway, the United Kingdom, Chile, and Argentina make their claims on different parts of it. Antarctica has an extremely cold, dry climate. Winter temperatures along Antarctica's coast generally range from -10° to -30°C (14° to -22°F). In 1959, 12 countries of the world signed the **Antarctic Treaty** that forbid any

kind of mining and exploration in the Antarctica. The treaty also enabled the cooperation of states to undertake scientific research for the betterment of global mankind.

### Brief History of India in the Antarctica

India sent its first expedition to Antarctica in 1981. Two years later on 19th August, 1983 India signed the Antarctic Treaty and constructed its first research base, **Dakshin Gangotri** in January 1984 with the help of 81 members along with the personnel from the Indian Army. Indian scientists in January 1984, also celebrated the **first Republic Day at the station** along with the Soviet and German scientists.



**Dakshin Gangotri Research Station**

India's **Dakshin Gangotri** station was fully capable of performing unmanned operations that were set up using indigenous Indian equipment. Due to continuous submersion of the base in the ice, India around 1988-89 abandoned it. It is currently being used as a supply base and transit camp. Dakshin Gangotri station was succeeded by Maitri research station.



## Maitri

In 1988, India build its second Antarctic research station **Maitri** ( $70^{\circ}45'52''$  S &  $11^{\circ}44'03''$  E) on the rocky Schirmacher oasis. The structure of the building was built on steel stilts and has stood firm. The location of the Maitri station remains important as it serves as a gateway to one of the largest mountain chains in central Dronning Maud land, located south of Schirmacher.



**Maitri Research Station**

**Maitri** is an inland station located about 100 km from the shore, at an elevation of about 50 meters above sea level. The station can support up to 25 people in the main building during summer and winter time. It can also accommodate about 40 people in a summer facility comprising of containerized living modules. The station consists of one main building, a fuel farm, a fuel station, a lake water pump house, a summer camp and several smaller containerized modules. The main building offers a regulated power supply, automated heating with hot and cold running water, incinerator toilets, cold storage, PA system, living, dining, lounge and containerized laboratory space. The communication is through dedicated satellite channels providing connectivity for voice, video and data with Indian mainland.

## Bharati

On 18 March, 2012 India commissioned its third advanced research base '**Bharati**' about 3000 km East of Maitri station. It is located between Thala Fjord & Quilty bay, East of Stormes Peninsula in Antarctica at  $69^{\circ} 24.41' S$ ,  $76^{\circ} 11.72' E$  at about 35 m above sea level. **Bharati** since its commissioning has facilitated year-round scientific research activity by the Indian Antarctic program. India's Bharati Station can accommodate 47 personnel on twin sharing basis in the main building during summer as well as in winter.

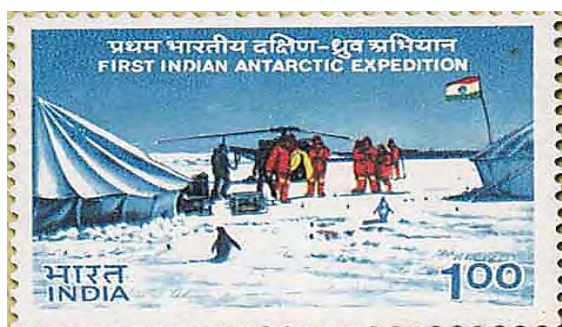


**Bharti Research Station**

It also has an additional emergency capacity to accommodate 25 people in emergency shelters/summer camps during summers, thus making the total capacity of the station to accommodate 72 people. This station consists of one main building, a fuel farm, a fuel station, a seawater pump house, a summer camp and a number of smaller containerized modules. Similar to the Maitri, the main building offers continuous power supply, automated heating and cooling systems with hot and cold running water facilities, flush toilets, a sauna, cold storage, PA system, aesthetically designed living, dining, lounge and laboratory space.

## India Post Office in Antarctica

In 1984, India along with the establishment of Dakshin Gangotri also setup its first [India Post Office in Antarctic](#). It became operational on February 24, 1984 and was part of the multiple support systems at Dakshin Gangotri. Scientist G. Sudhakar Rao was appointed as the first Honorary Postmaster and in the very first year of its foundation, almost 10,000 letters were posted and cancelled in the Dakshin Gangotri post office. India Post also released two postal stamps marking a historic memory of the country's first Expedition to Antarctica and highlighting the country's Dakshin Gangotri research station and Post Office.



After the decommissioning of Dakshin Gangotri in 1990, India's Post Office was also [moved to the country's new station Maitri](#) and the same remains operational to date.

## India's Antarctic scientific Research and Administration

All the scientific activities at India's research stations are coordinated by the [National Centre for Polar and Ocean Research](#) (NCPOR) which was established as an autonomous Research and Development Institution of under the Ministry of Earth Sciences (formerly Department of Ocean Development), Government of India on the 25th May 1998. This year (2023) India will be sending the 42nd Expedition to Antarctic. [India's scientific research in the Antarctica includes](#) research in Cryosphere and Ice Core studies, critical assessments in Remote Sensing, Lacustrine Studies and understanding various elements of environmental studies related to global warming and climate change. To date, India [does not have its own independent Polar Research vessel](#) or ice breaker ship. All of India's scientific research expeditions to the Antarctic have been undertaken on chartered ice-class vessels. Though the government of India is working on an acquisition of its independent Polar Research vessel or icebreaker ship.

## India and the Antarctic Treaty

On 1st December 1959, twelve countries whose scientists were actively involved in Antarctica during the International Geophysical Year (IGY) of 1957-58 signed a historic [Antarctic Treaty](#). This treaty entered into force in 1961 and since then has been acceded to by many other nations.

As of 2023, 56 countries are the parties to this treaty. India became the signatory state to Antarctic Treaty on 19th August, 1983 and received consultative status in Antarctic Treaty meetings on 12th September, 1983. The treaty has [14 Articles](#) which are summarized as follows:

#### **Article 1**

Article one restrains states from any kind of military activity in the Antarctica, though military personnel and equipment may be used for peaceful purposes.

#### **Article 2**

Article two calls for complete freedom of scientific investigation.

#### **Article 3**

Article three calls for Antarctic Treaty Nations to exchange plans for their scientific programmes, share scientific data and enable scientists exchange between expeditions where practical.

#### **Article 4**

Article four of the treaty calls for putting aside all territorial claims of the states for the duration of the Treaty. It further asserts that no activities under the Treaty will affect claims to sovereignty of any part of Antarctica made by any nation.

#### **Article 5**

Article five bans nuclear explosions and nuclear waste disposal on Antarctica.

#### **Article 6**

Article 6 mentions that the Treaty applies to all land and ice shelves south of 60° South, but not to the seas.

#### **Article 7**

Article seven mentions that all Antarctic stations, ships and aircraft supplying Antarctica shall be open to inspectors from any Treaty nation.

#### **Article 8**

According to Article eight, observers and exchange scientists shall be under the jurisdiction of their own country regardless of which national station they may visit. National laws do not apply to stations or areas, but only to the citizens of those countries.

#### **Article 9**

Article nine calls for Treaty nations to meet and consider ways of furthering the principles and objectives of the Treaty. Attendance at these meetings shall be limited to those countries that are engaged in substantial scientific research activity in Antarctica. Unanimous approval will be necessary for any new measures to become effective (i.e. everyone has to agree).

#### **Article 10**

Article ten calls for Treaty Nations to ensure that no one carries out any activity in Antarctica that is against the Treaty.

**Article 11**

Article eleven mentions that any dispute by Treaty Nations, if not settled by agreement, shall be determined by the International Court of Justice.

**Article 12**

As per article twelve, the Antarctic Treaty may be modified at any time by unanimous agreement. After 30 years any consultative Party may call for a conference to review the operation of the Treaty. The Treaty may be modified at this conference by a majority decision.

**Article 13**

As per article thirteen, the Treaty must be legally ratified (agreed to) by any nation wishing to join. Any member of the United Nations may join as well as any other country invited to do so by the Treaty Nations. All notices and records are to be deposited with the Archives of the United States of America.

**Article 14**

The Treaty translated into English, French, Russian and Spanish was signed on 1st December 1959 by 12 states and entered into force on [23rd of June 1961](#).

**The Indian Antarctic Bill, 2022**

On 1 August, 2022 the Rajya Sabha passed the [Indian Antarctic Bill, 2022](#) after it was cleared by the lower house on 22<sup>nd</sup> July, 2022. This Bill seeks to give effect to the Antarctic Treaty, the Convention on the Conservation of Antarctic Marine Living Resources, and the Protocol on

Environmental Protection to the Antarctic Treaty. India's bill also seeks to protect the Antarctic environment and regulate activities in the region. The [key features](#) of this Bill are:

India's Antarctic Bill would provide a harmonious policy and regulatory framework for India's Antarctic activities through well-established legal mechanisms and will help in the efficient and elective operations of India's Antarctic Programme. It will facilitate India's interest and proactive involvement in the management of growing Antarctic tourism and sustainable development of fisheries resources in Antarctic waters. It would further help in increasing India's international visibility, and credibility of India in Polar governance leading to international collaboration and cooperation in scientific and logistics fields.

There has been a continuously growing presence of Indian scientists in Antarctica with a concurrent commitment to Antarctic studies and protection of the fragile Antarctic ecosystem that warrants adoption of domestic legislation on Antarctica consistent with its obligations as a member of the Antarctic Treaty System.

This law would confer jurisdiction on the Indian courts to deal with any dispute or crimes committed in parts of Antarctica. Legislation of such a kind will bind the citizens to the policies of the Antarctic Treaty System. This will also be useful in building India's credibility and enhancing its global status.

India's Antarctic Bill also proposed to set up the Indian Antarctic Authority (IAA) under the Ministry of Earth Sciences, which shall be the apex decision making authority and shall facilitate programmes and activities permitted under the Bill. It shall provide a stable, transparent and accountable process for the sponsorship and supervision of Antarctic research and expeditions; ensure the protection and preservation of the Antarctic environment; and shall ensure compliance by Indian citizens engaged in the Antarctic programs and activities with relevant rules and internationally agreed standards. Secretary, Ministry of Earth Sciences will be the Chairperson of the IAA and the IAA will have official members from the concerned ministries.

### **India and the Antarctic Treaty Consultative Meetings (ATCM)**

As per Article IX of the Antarctic Treaty, every year (before 1994 every two years) the original twelve Parties to the Treaty and those Parties that demonstrate their interest in Antarctica by conducting substantial research activity there (together being called the Consultative Parties) meet "for the purpose of exchanging information, consulting together on matters of common interest pertaining to Antarctica, and formulating and considering and recommending to their Governments measures in furtherance of the principles and objectives of the Treaty". These are called the [Antarctic Treaty Consultative Meetings](#) (ATCM). The measures often

called "Recommendations", include a large number of documents in which the principles of the Antarctic Treaty and the Environment Protocol are translated into specific regulations and guidelines. India being the fifteenth Consultative Member of the Antarctic Treaty, regularly participate in these annual meetings. The XXX-ATCM was held in India in 2006, during which India got permission for its third station Bharti. India will be hosting the next [Antarctic Treaty Consultative Meeting in 2024 in New Delhi](#).

### **Some Recent news Updates on Antarctic**

#### **90% of ice around Antarctica has disappeared in less than a decade**

Antarctic sea ice has reached [record low levels](#) with some scientists alarmed that dramatic drops are a signal that the climate crisis may now be more clearly influencing this vast, complex and isolated region.

The sea ice that fringes Antarctica dropped to just 737,000 square miles (1.91 million square kilometres) on February 13, according to the [National Snow and Ice Data Center](#), or NSIDC, below the previous record of 741,000 square miles (1.92 million square kilometres) set on February 25 last year.

#### **China to build satellite tracking station in Antarctica**

Beijing has plans to build a [ground station in Antarctica](#) to back its network of ocean monitoring satellites. The decision comes



after Sweden's state-owned space company declined to renew contracts with China. The ground station will be established at the Zhongshan research base, one of two permanent Chinese research stations in Antarctica. The Chinese government has awarded a contract of \$6.53 million to the China Aerospace Science and Technology Group.

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