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India's Antarctic Act

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Introduction

The Indian Antarctic Bill, 2022 was introduced in Lok Sabha on April 1, 2022. It was passed with a majority in the lower house of the Indian Parliament on 22 July 2022. Simultaneously, after rigorous discussions, the bill was also cleared by the Rajya Sabha on 1 August 2022. Thereafter, the bill became 'The Indian Antarctic Act, 2022' and was notified to the public via the Gazette of India dated 8 August, 2022. India's passing of this bill and its formalization to an act gave further 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 and highlights India's firm commitment to these international mechanisms of Antarctic governance. This current issue of the Non-Traditional Security Centre digest highlights all important aspects of India's Antarctic Act, 2022. The Indian Antarctic Act 2022 is divided into 10 chapters that outline various aspects through which India will strengthen Antarctic management.

Chapter 1

This chapter defines and outlines various terminologies used in this act. It clearly defines the meanings of various 'words' used in the text of this act. This chapter also clearly highlights the various jurisdictions, persons, agencies and organizations to which various clauses of this act are applicable.

Chapter 2

Chapter two of this act deals with various kinds of 'Permits' that would be required by Indian people, agencies, aircraft, ships, and expeditions for undertaking various kinds of scientific, economic and other related activities on Antarctica. Various such permits include:

1. Permit for undertaking expedition to Antarctica.
2. Permit for staying at India's Antarctic stations.
3. Permit for vessels and aircraft entering Antarctica.
4. Permit for undertaking any kind of mineral resource activities on Antarctica.
5. Permit for introducing non-native animals and plants into Antarctica.

6. Permit for introducing microscopic organisms.
7. Permit to enter protected areas in the Antarctica.
8. Permit for waste disposal.
9. Permit for discharge into sea.
10. Permit for removal of biological specimen or any other sample from Antarctica.

Chapter 3

Chapter three of the act highlights the list of activities that are strictly prohibited in Antarctica as per the Indian Antarctic Act. As per the provision of this chapter

1. Any kind of nuclear explosion or disposal of any radioactive waste material is strictly prohibited in Antarctica.
2. Introducing non-sterile soil in Antarctica is prohibited.
3. The act prohibits introducing specified substances and products.
4. No person shall damage, destroy or remove any historic site or monument or any of its parts in Antarctica as may be prescribed.
5. Any form of possession or selling of anything that has been obtained in contravention of the provisions of this Act is prohibited.
6. Sea discharge of any garbage, plastic or other product or substance that is harmful to the marine environment of the Antarctic from a vessel into the sea is prohibited.

Chapter 4

Chapter four of this act deals with the Antarctic governance and environmental protection committees that the Government of India seeks to establish in the near future. This chapter highlights all the terminologies and composition of various appointments that the Government of India would undertake for the smooth conduct of various affairs of Antarctic governance and environmental protection. This chapter in the act further outlines details pertaining to the conduct of meetings of the committees, their roles and functions and the powers that rest with the Indian government to give direction to these set committees.

Chapter 5

Chapter five of this act highlights various aspects which the permit-granting committees need to consider while granting various kinds of permissions for the Antarctic. This chapter also highlights different scenarios under which the committee can grant, suspend or cancel the existing permit of an individual, group, organization, expedition, ship, or aircraft that fails to comply with the various provisions of this act.

Image Source: https://en.wikipedia.org/wiki/Antarctic_Convergence#/media/File:Antarctic-Convergence-Map.TIF

Chapter 6

Chapter six deals with various kinds of provisions related to 'inspections' that the government of India may undertake with regard to the Antarctic. This chapter highlights that the Government may designate any officer as an Inspector, who has the required qualifications and experience to undertake various kinds of inspections in the Antarctic. This includes inspections at Antarctic bases, ships, aircraft and at different Antarctic infrastructure bases. A section in the chapter highlights in detail various kinds of facilities that an inspector can inspect as a part of his/he assigned duties. Further, his chapter also highlights provisions for the formation of 'inspection teams' for undertaking specific types of inspection at various types of facilities and sites at the Antarctic. Lastly, this section highlights that no person shall obstruct an Inspector or inspection team or hinder any of them in performing their functions in India or in Antarctica. Also, no person shall knowingly or negligently provide any person false or misleading information, results or samples or file a document containing false or misleading information to the inspector or inspecting teams.

Chapter 7

Chapter seven of India's Antarctic Act, 2022 outlines various provisions for 'waste disposal' and 'waste management' in the Antarctic. This chapter calls for the establishment of the waste classification system and waste management plans and outlines various provisions for the same. It also highlights various kinds of chemicals, degradable/non-degradable, toxic/non-toxic and other kinds of waste produced during the undertaking of different kinds of activities on the Antarctic. This section of the Act deals in detail with the elimination, storage, segregation and removal of all different kinds of waste from Antarctica.

Chapter 8

Chapter eight of India's Antarctic Act, highlights various provisions related to the Prevention of Marine Pollution and Liability for Environmental Emergency in the Antarctic. This section calls that a committee shall ensure compliance of any activity undertaken in the Antarctic environment and dependent and associated ecosystems by the permit holder. This includes compliance with existing International Conventions or Treaties or Protocols or such other international obligations, as prescribed.

It further lays down various postulates related to the duties and liabilities of operators in case of any environmental emergency in the Antarctic. This section also provides provisions for some cases where the operators are exempted from liability depending on a case-to-case basis.

Chapter 9

Chapter nine of the act deals with various kinds of 'offences' and 'penalties' which the Indian court could trial and charge Indian persons, aircraft, vessels and companies that failed to comply with the defined rules, laws and other obligations required for undertaking various kinds of activities in the Antarctic. This section of the act highlights all kinds of punishment from imprisonment to monetary fines for violating different laws in the Antarctic region.

Chapter 10

Lastly, chapter ten of this act highlights various other miscellaneous provisions that have been brought for the effective management of India's Antarctic affairs. This includes details on:

1. Constitution of funds for government activities.
2. Jurisdiction of Indian Designated Courts on Antarctic matters.
3. Report to Committee of Offences.
4. Conferment of powers of investigation, etc.
5. Accounts and audit of funds.
6. Power to make rules.
7. Power to remove difficulties on any matters that impact to give credible effect to the provisions of this act.

Recent Developments in Antarctic

Antarctica's ice sheets have hit an unprecedented low: Researchers

In a recently published research in the journal Frontiers in Environmental Science researchers have revealed that Antarctica's ice sheets have hit an unprecedented lows. Satellite observations monitoring the ice levels of the continent showed a disconcerting trend, indicating a monthly loss of glacier mass. In 2023, the ice sheets plummeted to new heights, reaching levels a staggering 20 percent lower than the historical average recorded over the past four decades.

Scientists probe characteristics of a form of plasma wave identified in the Indian Antarctic station, Maitri

Indian scientists at country's Antarctic station at Maitri have identified Electromagnetic Ion Cyclotron (EMIC) waves and studied its characteristics. These waves play an important role in precipitation of killer electrons (electrons having speed close to speed of light, which form the radiation belt of planet Earth), which are hazardous to our space-borne technology/instruments. This is an interesting finding that can help understand the impact of energetic particles in the radiation belts on the low orbiting satellites.

The ozone hole above Antarctica opened early this year

The ozone hole above Antarctica has opened up unusually early this year. Scientists think the Hunga Tonga volcanic eruption that sent shockwaves around the world in January 2022 may be to blame. Ozone experts predicted earlier this year that the eruption, which injected 50 million tons (45 million metric tons) of water vapor into Earth's atmosphere, is likely to have an impact on Earth's protective ozone layer in the years following the eruption. Concentrations of water vapor in the stratosphere (the second lowest layer of Earth's atmosphere where the ozone layer resides) have increased by 10% due to the explosion of the undersea volcano. That, according to Paul Newman, the chief scientist for atmospheric science at NASA Goddard Space Flight Center, resulted in "significant cooling" in the stratosphere, which is bad news for ozone levels.

Australia rescues sick researcher from Antarctica

An urgent rescue operation was launched last week to reach the man, who has an undisclosed "developing medical condition". The mission required a medical retrieval team, a massive icebreaker ship and two helicopters. For this mission Australia sent its icebreaker RSV Nuyina from Tasmania to reach country's Casey research station that is thousands of miles away and air rescue mission was ruled out due to harsh conditions. It was mentioned that an evacuation by air was not feasible as the nearby Wilkins aerodrome near Casey has an ice runway that is often unusable during the harsh winter. According to reports it was suggested that runway would need weeks of preparation to use, and therefore it is far quicker to send the icebreaker.

India Plans for its First Polar Research Vessel

As countries become increasingly interested in polar research due to climate change concerns, India is on course to have its first polar research vessel in the next five years. India's Minister of Earth Sciences Kiren Rijiju made this revelation while responding to a query in the Rajya Sabha. He highlighted that India currently runs three research stations in Antarctica, and a polar research vessel would be used for logistics and resupply missions. Minister Kiren revealed the vessel will also be used as a platform for research, specifically in the Southern Ocean. According to the Minister, the proposal regarding the ship order is expected to go for cabinet approval during this current financial year. The estimated cost of the vessel is $310 million. Earlier in 2014, the Indian Cabinet had approved over $120 million for acquiring a similar ship. However, the tender was later dropped.

'Marine granary' in the Antarctic contains 1 billion tons of krill, sufficient to feed 1.4 billion people

Chinese scientists have recently discovered a "marine granary," an oceanic area in the Antarctic that harbors rich marine life resources, among which are vast quantities of krill, totaling as much as 1 billion tons. The oceanic area discovered by the Chinese Antarctic scientific exploration research team have a rich species diversity ranging from various species of fishes, birds, seals and whales. The Antarctic krill reserves are estimated to be as high as 1 billion tons, sufficient enough to feed 1.4 billion people, according to China Food Semimonthly Magazine.

Antarctic krill is an advanced marine crustacean known for its small size, with a maximum length of only 5 centimeters. With its soft, easily digestible meat, Antarctic krill holds significant nutritional value, making it an excellent food choice for those with weak physical constitutions. The abundant magnesium found in krill plays a vital role in regulating heart activity and protecting the cardiovascular system. Additionally, the calcium and phosphorus present in Antarctic krill are particularly beneficial for children and pregnant women.

Antarctic research stations have polluted a pristine wilderness

Antarctica is often described as one of the most pristine places in the world, but it has a dirty secret. Parts of the sea floor near Australia's Casey research station are as polluted as the harbour in Rio de Janeiro,

Brazil, according to a study published in PLOS One in August. The contamination is likely to be widespread across Antarctica's older research stations, says study co-author Jonathan Stark, a marine ecologist at the Australian Antarctic Division in Hobart. Stark and his colleagues found high concentrations of hydrocarbons — compounds found in fuels — and heavy metals, such as lead, copper and zinc. Many of the samples were also loaded with polychlorinated biphenyls, highly carcinogenic chemical compounds that were common before their international ban in 2001. When the researchers compared some of the samples with data from the World Harbour Project — an international collaboration that tracks large urban waterways — they found that lead, copper and zinc levels in some cases were similar to those seen in parts of Sydney Harbour and Rio de Janeiro over the past two decades.

Suggested latest readings on Antarctic

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Non-Traditional Security Centre

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मनोहर पर्रिकर रक्षा अध्ययन एवं विश्लेषण संस्थान

Manohar Parrikar Institute for Defence Studies and Analyses
No.1, Development Enclave, Rao Tula Ram Marg,
Delhi Cantt., New Delhi - 110 010
Tel.: (91-11) 2671-7983 Fax: (91-11) 2615 4191
Website: http://www.idsa.in