



India and the Dynamism of Arctic Region

For Prelims: [Arctic](#), [Northern Sea Route](#), [MAHASAGAR](#), [National Centre for Polar and Ocean Research](#), [Himadri Research Station](#)

For Mains: Geopolitical changes in the Arctic and their global implications, India's role in Arctic governance and its Arctic Policy.

[Source: TH](#)

Why in News?

The [Arctic](#), a peaceful zone of scientific cooperation, is rapidly emerging as a geopolitical and military frontier, driven by climate change that is opening new sea routes, especially the [Northern Sea Route \(NSR\)](#) and triggering commercial interest and military buildup.

How Has the Arctic's Geopolitical Landscape Evolved?

- **Climate Change and Resource Access:** The opening of the NSR, previously passable only during brief summer months, is now a **nearly year-round navigable global trade route**.
 - This increase in maritime traffic is linked to the Arctic's untapped natural resources, including oil, gas, and minerals.
- **Commercialization and Militarization:** Arctic states are reopening old bases, deploying submarines, and showcasing power.
 - The Arctic has attracted commercial and military interests, especially from **Russia** (assertive military deployments), China (expanding Arctic footprint), and the US (renewed focus on Greenland).
 - The region is transitioning from a scientific commons to a geopolitical hotspot, central to global power play.
- **Potential Impact on India:** A militarised Arctic could undermine India's maritime interests by redirecting trade through the NSR, reducing the relevance of Indian Ocean routes.
 - This shift could jeopardize **India's MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions) Vision** for regional connectivity and weaken its role in the [Indo-Pacific maritime order](#).
 - India's strong ties with Russia, especially amid the ongoing [Ukraine conflict](#), have raised concerns among Nordic states.
 - These relationships may hinder India's ability to forge closer partnerships with Arctic nations, which are cautious of India's perceived strategic alignment with Russia.

Arctic

- **About:** The Arctic is a region located above the **Arctic Circle**, north of latitude **66° 34' N**, encompassing the **Arctic Ocean** and surrounding lands, with the **North Pole at its center**.

- This region includes territories of eight Arctic states: Canada, Denmark (Greenland), Finland, Iceland, Norway, Russia, Sweden, and the USA, who together form the [Arctic Council](#).
- The Arctic is home to nearly **4 million inhabitants**, with approximately one-tenth being indigenous peoples.
- **Significance:** It is rich in natural resources, including coal, diamonds, zinc, and rare earth metals, with **Greenland possessing about a quarter of the world's rare earth reserves**.
 - As India is the **3rd-largest energy consumer**, the Arctic's melting ice makes these resources more accessible, potentially addressing **India's energy security needs**.
 - Geographically, the Arctic regulates **ocean currents and reflects solar radiation, helping maintain Earth's temperature**.
 - **Environmentally**, the Arctic's melting ice is linked to glacial changes in the Himalayas, critical for India's water security.



What is India's Approach Towards the Arctic?

- **Historical Engagement:** India's Arctic engagement began in 1920 with the signing of the **Svalbard Treaty**.
 - The [National Centre for Polar and Ocean Research \(NCPOR\)](#), under the Ministry of Earth Sciences, is the lead agency for India's Arctic studies.
- **Scientific Expeditions:** India's Arctic engagement began in **2007** with its first scientific expedition, focusing on biological sciences, ocean and atmospheric sciences, and glaciology.
 - In 2008, India established the [Himadri Research Station](#) at the **Svalbard Arctic research base**.
 - Himadri is manned for 180 days annually. India has conducted 13 Arctic expeditions since 2007.
 - This was followed by the deployment of the **IndArc Observatory in 2014** at Kongsfjorden, marking India's first multi-sensor moored observatory.
 - In 2016, India set up its **northernmost atmospheric laboratory** at Gruvebadet, equipped to study clouds, precipitation, pollutants, and atmospheric parameters.
- **Arctic Council:** India became an Observer nation of the Arctic Council in 2013 and has actively contributed to its six Working Groups.
 - India has also engaged with the **Arctic Energy Summit, Arctic Science Ministerial, and meetings of Task Forces**.
- **India's 2022 Arctic Policy:** India's Arctic policy focuses on strengthening scientific, climate, and environmental research, enhancing maritime and economic cooperation.
 - It aims to deepen understanding of **climate change impacts on India's security and economy**, enhance analysis of Arctic ice melt, and explore connections between **polar regions and the Himalayas**.
 - The policy also seeks to foster deeper cooperation with Arctic nations, increase India's participation in the Arctic Council, and improve understanding of Arctic governance and geopolitics.

What are the Gaps in India's Approach Towards the Arctic?

- **Lack of Clear Strategy:** India lacks a long-term strategy addressing the region's **geopolitical and economic importance**. While focused on sustainability, it does not fully address the growing **militarization and geopolitical competition** in the Arctic.
- **Limited Economic Engagement:** India has limited private sector involvement in Arctic business opportunities like **resource extraction, shipping, and tourism**, leaving its commercial engagement underdeveloped.
 - Additionally, **India has not capitalized on the NSR**, failing to integrate it into its **broader economic strategy** despite its growing importance due to melting ice and climate change.
 - China's growing presence and its [Polar Silk Road initiative](#) challenge India's Arctic strategy. India's policy **needs to address the economic and security implications of China's increasing influence** in the region.
- **Underdeveloped Infrastructure Focus:** India has **overlooked key opportunities** in Arctic **infrastructure and shipping connectivity**.
 - As Arctic sea routes become more significant, India's limited involvement in infrastructure projects and **absence from shipping ventures puts it at a disadvantage in the region's expanding economy**.
- **Lack of Indigenous Engagement:** India has **not developed clear policies for engaging with indigenous communities**, which is crucial for responsible development.
- **Limited Research Focus:** India's research in the Arctic, through **Himadri and IndArc**, is **significant but could expand to include emerging areas** like Arctic biodiversity, marine pollution, and climate-induced migration.

How Should India Recalibrate its Arctic Strategy?

- **Institutionalise Arctic Engagement:** Establish dedicated **Arctic desks in the Ministries of External Affairs and Defence**, ensure regular inter-agency coordination, and engage strategic think tanks to frame a broader Arctic outlook beyond science.
 - With increasing militarisation of the Arctic, similar trends may emerge in Antarctica; India

needs a comprehensive **polar policy to prepare for future geopolitical and economic developments at both poles.**

- **Alignment with Arctic Countries:** India should establish an Arctic Technology Hub focused on clean energy, renewable solutions, and the development of ice-safe infrastructure, including ship repair, and ship recycling.
 - This would support sustainable Arctic engagement while boosting India's maritime capabilities and green innovation.
- **Strengthen Arctic Connectivity:** Establish an **India-Russia-Nordic shipping corridor**, focusing on green shipping along the NSR.
 - The [Chennai-Vladivostok Eastern Maritime Corridor \(EMC\)](#) is now a strategic sea link connecting **India's East Coast with Russia's Far East**. Beyond boosting bilateral trade, it opens a gateway to the **Arctic region via Russia's NSR**.
 - It enables India to diversify energy imports and strengthen ties with Arctic nations, positioning it as a key player in emerging polar supply chains.
- **Blue Economy Treaty:** India could propose an [Arctic Blue Economy Treaty](#) to balance economic growth and marine conservation.
 - The treaty would create a framework for **sustainable resource extraction, marine spatial planning**, and fisheries management.
 - Leveraging its expertise in ocean governance (**SAGAR, IPOI**), India could lead multilateral efforts to ensure Arctic development preserves ocean health.
- **Arctic Monitoring:** India should **use its space capabilities to create an Arctic Satellite System for real-time monitoring of ice**, wildlife, pollution, and **resource extraction**, offering data-sharing and expertise to Arctic nations, strengthening its role in climate research.

Conclusion

India's current Arctic posture rooted in science and climate diplomacy was suitable in an era of cooperation. But as the Arctic becomes a theatre of power, India risks strategic irrelevance if it does not recalibrate with purpose. A shift from passive observer to engaged stakeholder is now essential.

Drishti Mains Question:

The Arctic, once a zone of scientific collaboration, is now a theatre of strategic contestation. Analyze India's readiness to respond to this shift.

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. Which of the following statements is/are correct about the deposits of 'methane hydrate'? (2019)

1. Global warming might trigger the release of methane gas from these deposits.
2. Large deposits of 'methane hydrate' are found in Arctic Tundra and under the sea floor.
3. Methane in atmosphere oxidizes to carbon dioxide after a decade or two.

Select the correct answer using the code given below.

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (d)

Mains

Q. How do the melting of the Arctic ice and glaciers of the Antarctic differently affect the weather patterns and human activities on the Earth? Explain. **(2021)**

Q. What are the economic significance of the discovery of oil in the Arctic Sea and its possible environmental consequences? **(2015)**

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