



## GEOPOLITICAL TENSIONS IN THE ARCTIC CIRCLE: ANALYZING THE ROLE OF ARCTIC NATIONS AND EMERGING STAKEHOLDERS

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Received: 28.02.2025 Accepted: 12.03.2025 Published: 16.03.2025

**Abstract:** Arctic circle has become a focal point of geopolitical competition due to climate change, resource exploitation and emerging strategic interests. Arctic Nations- Russia, United States, Canada, Denmark and Norway are actively competing on regional claims, military dominance and economic occasions. Meanwhile, non-Arctic states such as China, India and Bangladesh are expanding their participation due to economic, environmental and strategic concerns. This study examines the underlying geopolitical stresses, evaluates policies of the Arctic and non-Arctic states, and assesses economic and security implications. Using a qualitative research approach, this paper highlights how Arctic geo -strategy can change the dynamics of global power.

**Keywords:** Arctic Militarization, Territorial Claims, Resource Competition Northern Sea Route (NSR), Russia-NATO Rivalry, Climate Change and Ice Melt, UNCLOS (United Nations Convention on the Law of the Sea), Exclusive Economic Zones (EEZs), Polar Silk Road (China's Arctic Strategy), Geopolitical Rivalries , US-Russia Tensions.

### Introduction

#### Background

The Arctic region, once seen as a frozen and inaccessible border, has emerged as a major geo -political hotspot due to climate change and technological progress. The melting ice is opening new shipping lanes, revealing huge unused natural resources, and safety is changing dynamics, causing the architect regional and global powers to have an constituency.

#### Research objectives

- Checking geopolitical tensions between Arctic countries about regional claims, resource competition and military development.
- To analyze the strategic interests of non-arctic states like China, India and Bangladesh in Arctic affairs.
- To assess the economic and environmental implications of Arctic geo -political changes.

#### Research Methodology

This study adopts a mixed-methode approach, with quantitative data from global organizations such as United Nations, Arctic Council and Energy Agencies with qualitative analysis of policy documents, official reports and scientific literature.

### Geopolitical tension between Arctic nations

#### Regional dispute and sovereignty struggle

The Arctic region is looking at the growing geopolitical tension due to regional claims between the Arctic nations. Disputes mainly revolve around marine borders, control of seized resources, and sovereignty on navigation rights, serving as a legal structure for claims with the United Nations Convention on the Law of the Sea

(UNCLOS).

#### 1. Russia vs Canada and Denmark: Lomonosov Ridge dispute

The Lomonosov ridge is at the center of regional claims by a underwater mountain range, a underwater mountain range spread over the Arctic Ocean. Under UNCLOS, the nation can expand its exclusive economic territories (EEZs) if they prove that seabed is a natural expansion of their continental shelf. Russia submitted a claim in 2001 (amended in 2015) said the Lomonosov Ridge is part of its continental shelf. Canada and Denmark later submitted competition claims, which led to a long -term dispute.

#### 2. United States vs Canada: North Western route

Canada considers the Northwest route - a major Arctic shipping route - as internal water, it gives the right to regulate access. The United States and European countries argue that the route is an international strait, which is open to global shipping under international law.

#### 3. Norway vs. Russia: Svalbard and Barents Sea Disputes

Norway and Russia have competing interests over Svalbard, a Norwegian-administered Arctic archipelago rich in resources. A 2010 agreement settled part of the Barents Sea maritime boundary, but tensions remain over fishing rights and oil exploration.

#### Military Build-up and Strategic Positioning

The Arctic has become a critical zone for military expansion as nations seek to secure territorial claims, protect economic interests, and establish strategic dominance. Melting ice has made the region

more accessible, prompting Arctic and non-Arctic powers to expand their military presence through infrastructure development, naval deployments, and joint exercises.

### 1. Russia's Arctic Militarization

Russia is the dominant military power in the Arctic, with the most extensive infrastructure and military capabilities: It operates 50+ Arctic military bases, including Soviet-era facilities that have been reopened and modernized. Russia has the world's largest fleet of nuclear-powered icebreakers, crucial for year-round Arctic navigation. In 2021, Russia conducted Zapad-21, a large-scale Arctic military exercise involving over 200,000 troops and advanced weapon systems. The Arctic Brigade, specialized in cold-weather combat, has been stationed in key locations such as Murmansk and Franz Josef Land.

### 2. United States and NATO response

To combat Russia's Arctic expansion, the United States and NATO have increased military activities: U.S. Has allocated \$ 40 billion for Arctic Defense, including new Icebreaker and Investment in Monitoring infrastructure. U.S. Refrugged its Cold War-era the air base in Greenland, a major radar station for missile defense. NATO has increased the Arctic military exercises by 35% since 2020, such as cold response and trident junctions such as Norway, Canada and European colleagues. The Pentagon has enhanced the Arctic-Fine Fighter Jets and the submarine that is increasing the capabilities of the Arctic War.

### 3. China's strategic Arctic ambitions

Although not an Arctic nation, China has declared itself a "near-Arctic state" and is expanding its presence: China has created two Arctic Research Stations in Norway and Iceland, which is often suspected of being dual -used military functions. Polar Silk Road initiative integrates Arctic trade routes into China's belt and road structure, securing economic and geopolitical impact. The competent ship and prolonged military ambitions, forming their first atomic-operated icebreaker, are building.

### 4. Enhance geopolitical stress

In 2022, Russia conducted the Arctic Nuclear Practice, raising NATO concerns about regional stability. American and Canada are modernizing Nord (North American Aerospace Defense Command) to combat potential Russian threats. Extension of military bases and monitoring systems suggest that the Arctic competition is turning into a possible military conflict with economic rivalry.

## Role of non-arctic nations

While Arctic is mainly ruled by nations which have regional claims in the region- Russia, United States, Canada,

### China's interest in Arctic Circle

Despite being geographically away from the Arctic, China has shown significant interest in the region due to economic, strategic and environmental factors. Its growing participation in Arctic cases reflect global presence and its widespread ambition to establish a global appearance and impact in areas such as trade, resources and climate change on emerging geo -political development.

#### 1. Economic and trade interest

China sees Arctic as an important area for future economic opportunities, especially in terms of energy resources and shipping

routes:

**Energy Resources:** Arctic oil is home to a huge untold reserves of natural gas and minerals. China has invested in Russian Arctic Power Projects, including the Yamal LNG project and the search for oil in the region. China is also a prominent partner in Russian Arctic Energy Exports, which gives access to resources that are difficult to remove elsewhere.

**North Sea route (NSR):** The northern sea route, which moves along the Arctic coast of Russia, provides a small route for shipping between Asia and Europe, which is a journey time compared to traditional routes like Suez Canal Reduces 40%. China has shown great interest in this route as part of its belt and road initiative (BRI), which aims to integrate the Arctic Shipping Lane in its comprehensive infrastructure development strategy. By investing in ports and logistics along the route, China wants to secure trade and economic benefits.

#### 2. Scientific and environmental interest

China is also rapidly engaged in Arctic scientific research, especially focus on climate change and environmental monitoring, because Arctic is experiencing the effects of climate change at a very fast rate.

#### 3. Strategic and geopolitical interest

China has demanded to increase its strategic impact in Arctic through diplomatic channels and partnership: Status of "near-Arctic State": In 2018, China declared itself a "near-Arctic state", indicating its interest in arctic matters despite regional claims in the region. China has demanded more participation in the Arctic rule, including participation in the Arctic Council as an observer.

**Polar Silk Road:** Through its Polar Silk Road initiative, China aims to set up a new trade route that connects the Arctic with its broad belt and road structure. This includes investment in Arctic ports and infrastructure, which leads to China's economic and political influence in the region.

### India's interest in Arctic Circle

Despite not having regional claims in the Arctic, India has shown increasing interest in the field due to its economic, environmental and scientific importance. India's participation in Arctic affairs is inspired by concerns on climate change, energy security and increasing participation in global rule on environmental issues.

#### 1. Climate change and environmental concerns

India is one of the most unsafe countries for the effects of climate change, especially due to rising levels of sea and extreme weather events. The Arctic region is heating up very rapidly than the global average, causing it an important field for scientific research:

**Climate Research:** India's interest in Arctic is mainly motivated by the need to understand the effects of climate change on global weather patterns and increase in sea levels. As part of its research initiatives, India has established the Himadri Research Station at Swarbard, Norway to study the Arctic Climate and Ecosystem. Indian scientists focus on understanding the loss of marine ice, especially the changes in the Arctic biodiversity, and their possible effects on the global monsoon patterns.

**Sea level rise:** India, being a lower level country with broad beaches, is highly unsafe for the rising level of the sea caused by the melting of Arctic glaciers. Understanding these changes allows India to assess and reduce the impact on its coastal areas, which are

homes for millions of people.

## 2. Energy security

Arctic oil is home to important unused energy resources including oil, natural gas and minerals. As India's demand for energy increases, achieving access to Arctic resources is an important part of its long-term energy strategy:

**Energy investigation:** India has partnered with Arctic nations, especially Russia, to invest in the search for oil and gas in the Arctic sector. Russia's Yamal LNG project, which India has supported, is an example of this growing energy cooperation.

**Energy Diversification:** With increasing domestic energy demands, India wants to diversify its energy sources beyond traditional suppliers. The vast hydrocarbon reserves of the Arctic offer a valuable opportunity to secure energy imports for its rapidly growing economy. Polar research, helping to shape the global research agenda and deepen its involvement in the Arctic Environmental regime.

### Bangladesh interest in Arctic Circle

While Bangladesh is geographically far from Arctic, it has growing bets in the region, which is mainly inspired by climate change and its vulnerability for the growing level of the sea. Additionally, Bangladesh wants to expand its role in global maritime trade and benefits from emerging Arctic economic opportunities. Given its vulnerability for environmental changes, participation in Bangladesh's Arctic affairs is largely focused on climate science, environmental advocacy and shipping access to shipping access through Arctic trade routes.

#### 1. Climate change and environmental vulnerability

Bangladesh is one of the weakest countries for the effects of climate change, especially due to its broader coastal areas and low-to-swamp geography. Arctic, where the effects of climate change are most clear, is an important interest for Bangladesh for the following reasons:

**Rising C level:** Melting of Arctic snow increases global sea levels, which is a direct threat to Bangladesh's vast coastal population and agriculture. There is a risk of flood, erosion and saltwater infiltration in fresh water sources in the country. The study of Arctic snow melt and its effect on sea level is important to understand and reduce adjacent risks for Bangladesh.

**Climate Diplomacy:** Bangladesh is actively involved in international climate dialogues, such as Paris Agreements, advocates more and more global action to combat climate change. Given the role of Arctic as a barometer for global environmental changes, Bangladesh uses Arctic data in its diplomatic efforts to address climate effects and secure safe adaptation funds.

#### 2. Potential maritime shipping route

As the North Sea Marg (NSR) and other Arctic shipping lane opens, Bangladesh is considering strategic implications for global trade, especially in terms of rapid shipping routes between Asia and Europe:

**Trade Efficiency:** Bangladesh's growing economy depends on its maritime trade, especially through the Bay of Bengal and its Chittagong port. With the small Arctic shipping route viable, Bangladesh is finding out how these routes can provide a more efficient route for international trade. The North Sea route, if made more accessible, can reduce shipping costs and time for goods

being traded between Asia and Europe to benefit Bangladesh's export area.

**Economic Opportunities:** As a new boundary for the discovery of Arctic energy and natural resources, Bangladesh can also engage in resource partnership, especially with countries like Russia and China, which is heavy in Arctic infrastructure and projects. Through a strategic partnership, Bangladesh can gain access to Arctic Resource Development or benefit from business linkage.

#### 3. Scientific and research cooperation

Bangladesh's Arctic engagement can also expand to scientific and research activities, especially focusing on the environment and climate changes of the field.

**Arctic Research Partnership:** Bangladesh has increasing interest in climate science and can collaborate with Arctic nations and global research institutes to study the effects of global weather patterns, ocean streams and ecosystems on ecosystems. By engaging in Arctic Research, Bangladesh can make better preparations for environmental challenges.

**International Scientific Forum:** Bangladesh can increase its participation in global scientific cooperation's focused on Arctic, such as conducted by Arctic Council and other international organizations. By joining these platforms, Bangladesh can contribute to significant environmental studies and, in turn, obtain valuable knowledge to address their own climate challenges.

#### 4. Advocacy for sustainable development

Bangladesh is a vocal lawyer for climate justice and sustainable development in international forums. In terms of Arctic, Bangladesh can play an active role in promoting environmentally durable practices as global interest in this field increases.

**Environmental advocacy:** Bangladesh Arctic is likely to emphasize the need for sustainable development, especially about resource extraction and environmental protection. This can push for international agreements that ensure that arch -archive resources are responsible responsibly, reducing damage to the delicate ecosystem of the region.

## Findings and Results

### Key Geopolitical Shifts

#### Key Geopolitical Shifts in the Arctic

The Arctic sector is undergoing important geo -political changes run by environmental changes, strategic competition and increasing importance of its resources. As the Arctic ice melts and opens new trade routes and reaches natural resources, both the Arctic and Non-Arctic nations are adjusting their policies and military strategies. The following major geo -dominant changes portray the dynamics developing in the Arctic Circle:

#### 1. Military presence and strategic competition increase

Arctic has become a military border as the Arctic states (Russia, the U.S., Canada, Norway, Denmark) and non-Arctic states (especially China) have increased their military presence. This change is inspired by the need to secure resources, to secure shipping routes and project power.

**Arctic militarization of Russia:** Russia has greatly increased its military appearance in the Arctic, renewed Soviet-era bases and has created new ones. Moscow is increasing its naval capabilities,

deploying nuclear-managed icebreakers, and expanding its architeic fleet. It has also conducted a large -scale military exercise in the region, indicating its intentions to maintain control over the North Sea route and maintain access to energy resources.

American and NATO response: American and NATO have carried forward military activities, including joint exercises such as cold response in Norway and modernization of Norad (North American Aerospace Defense Command). U.S. Has also invested heavily in Arctic infrastructure, such as airbase and icebreakers such as airbase and Icebreckers to combat Russia's growing dominance.

## **2. Shifting the power dynamics**

China, although not an Arctic nation, has demanded to affect Arctic matters mainly through economic and environmental means.Polar Silk Road: China's Belt and Road Initiative (BRI) extends to Arctic, where it aims to set up a "polar silk road" by investing in infrastructure, shipping routes and energy projects. This includes partnership with Russia on energy exploration and developing new trade routes such as the North Sea Marg (NSR).

Arctic Council Engagement: China has demanded to increase its diplomatic influence by obtaining observer status in the Arctic Council. Although there are no regional claims in China's territory, its participation in Arctic rule, including scientific research and climate studies, reflects its widespread strategic interest.

## **3. Resource competition and economic opportunities**

Arctic is rich in unused natural resources including oil, gas, minerals and rare earth elements. Melting of Arctic snow is opening new areas for exploration and extraction, focusing global forces towards the economic capacity of the region.

Energy and Resource Extraction: Russia, U.S. And countries like Norway are eager to exploit the huge hydrocarbon reserves of the Arctic. China has also participated with Russia in oil and gas projects such as Yamal LNG projects in Arctic, Russia. These activities are increasing geopolitical competition on Arctic's resource funds.

Shipping route: The North Sea route and the north -west route are becoming increasingly viable as melting of snow, offering small shipping lanes between Asia, Europe and North America. Countries like China and India are searching for these routes to reduce transit time and shipping costs, while Russia wants to control and regulate these sea routes.

## **4. Climate change as a catalyst for geopolitical change**

The Arctic is doubling to double the global average, which is deepening environmental changes. This rapidly changing the geo -political significance of the warming region, as nations are forced to be compatible with new realities.

Environmental impact on coastal countries: Melting Arctic snow and as a result is a growing concern for countries such as Bangladesh and India, which are unsafe for the results of global warming. As a result, these nations have become more active in global discussions about Arctic rule and climate change mitigation.

Environmental rule: Like new economic opportunities emerge in Arctic, the need for effective environmental rule has become an important issue. Countries are being focused rapidly on permanent development and conservation of Arctic ecosystems. The innings has inspired international agreements like the Paris Climate Agreement to remove the environmental challenges caused by Arctic Resource exploitation.

## **5. International alliance and change of diplomacy**

Arctic shifting Geopolitical Dynamics is re -shaping the international alliance and diplomatic relations. Increasing competition for resources and impact in the region is leading to new forms of cooperation and rivalry.

Arctic Council: Arctic Council remains a primary international body to address Arctic issues, but its role is developing as new non-arcatic states (such as China and India) that want to affect the Arctic policy . While the primary focus of the council is on environmental protection and scientific cooperation, its growing geopolitical significance is motivating the revaluation of its governance structure.

Regional cooperation: Despite increasing stress, there is a strong emphasis on regional cooperation between Arctic states. Multilateral agreements on issues such as search and rescue operations, environmental protection, and shipping rules demonstrate the importance of diplomacy in the management of complex geo -political landscapes of Arctic.

## **Economic and environmental implications of Arctic geo -political changes**

Rapid changes in the Arctic due to climate change, combining their natural resources and strategic shipping routes, presents both economic opportunities and environmental challenges. These implications are re-shaping global geopolitical mobility, affecting both Arctic and non-Archtic nations. With long -term impact on the global economy, trade and environment, the economic and environmental results of these changes are far -reaching.

### **1. Economic implication**

Resource exploitation and energy extraction

Arctic is home to important unused natural resources including oil, natural gas and minerals. Since this area becomes more accessible due to melting ice, the countries are intensifying their efforts to take advantage of these resources, which leads to both economic development and new competition,

Oil and gas reserves: Arctic is estimated to have 13% of the world's unseen oil reserves and 30% of its unseen natural gas reserves. As after ice, the Arctic nation and energy companies are investing rapidly in the discovery of oil and gas. For example, Russia has upgraded its extraction capabilities in the Arctic through Yamal LNG project and offshore drilling operations. It not only promises economic development, but also competes between states to secure energy dominance in this region.

Minerals and Rare Earth: Arctic has a treasure of minerals and rare earth elements, which are important for modern techniques such as electronics, batteries and renewable energy infrastructure. As the demand for these materials increases, Arctic nations are likely to see economic benefits from extracting these resources, further driving geophysical competition.

Shipping route and global trade

Inauguration of Arctic Shipping Lane, such as the North Sea route (NSR) and the north -western route, causing revolution in global trade, due to melting:

Short trade route: NSR provides a significant decrease in shipping time between Europe and Asia, cutting up to 40% of travel distance compared to traditional routes such as the Suez Canal. This can lead to significant cost savings and increase shipping efficiency,



which can benefit nations such as China, India and Europe which are very much dependent on trade. For countries with Arctic coasts, controlling these routes provides both economic and strategic benefits.

**Infrastructure Development:** Investment in Arctic ports and shipping infrastructure with Russia, Canada and Norway is increasing. Since these routes become more viable, international trade will probably see changes in marine logistics, and shipping companies may be suited to use arctic for rapid transit.

#### Geophysical and strategic leverage

Arctic resources and access to shipping lane are also an important factor in transferring the dynamics of global economic power. The nations with strategic arctic interests, especially people with the border of the region, are dying for control, while non-arctic states such as China are investing heavy in the Arctic infrastructure to ensure trade access. As a result, the region can become a source of economic dominance, transferring the balance of power in the intestine

## 2. Environmental implication

### Effect of climate change

Arctic is doubling with a global average, which changed the environmental scenario of the region rapidly:

**Melting snow and rising sea level:** The most visible result of arctic warming is the melting of sea ice, which contributes to the global sea-level growth. It is an existential threat to lower countries such as Bangladesh, Maldives and other coastal population. The loss of snow affects the local ecosystem, inhibit traditional livelihood, and forces nations to rethink their coastal infrastructure and climate change adaptation strategies.

**Ecosystem disruption:** Arctic delicate ecosystems are already experiencing disruption due to warming. The melting ice affects species such as polar bears, walras and seals, while warm sea temperature affects fish stock and marine biodiversity. These changes have an effect on the global ecosystem and can cause extinction of some species, affecting local communities and global food chains.

### Environmental decline due to resource extraction

While the extraction of Arctic resources provides economic benefits, it also increases important environmental concerns:

**Oil and gas discovery:** Increased drilling and extraction activities can cause oil spread and environmental contamination, which is particularly difficult to manage under the hard and distant circumstances of the Arctic. An oil spread in the Arctic can cause horrific damage to the local ecosystem, which affects marine life and beaches over decades.

**Mining and deforestation:** The extraction of minerals and rare earth elements comes with environmental risks such as housing destruction and pollution. As the nations run to remove these resources, there is a possibility of accelerating the environmental footprint of such activities, which further threatens the biodiversity and natural habitats of the region.

**Environmental rule and stability:** As the geo-political competition increases, international cooperation will be necessary to ensure environmental protection in Arctic

**International Agreements:** Organizations such as Arctic Council play an important role in promoting sustainable development and

environmental protection. However, increasing militarization and resource extraction in the region can reduce these efforts. Countries should balance economic interests with environmental protection to prevent irreversible damage.

**Sustainable Development:** Arctic has an increasing recognition of environmentally sustainable development. This includes managing resources responsibly, reducing environmental impacts from shipping and extraction, and addressing climate change mitigation to preserve the Arctic environment for future generations.

## Conclusions and policy recommendations

The Arctic sector is experiencing intensive changes due to a combination of geopolitical competition, climate change and increasing demand for natural resources. These changes present both opportunities and challenges for the Arctic and Non-Arctic nations equally. While the region provides huge potential for economic growth through resource extraction and new shipping routes, it also faces significant environmental risks that threaten its delicate ecosystem.

Geophysical stresses are growing as Arctic nations and external actors are Vie to control the field resources and strategic shipping lane. This has increased the need for clear governance structure, permanent resource management and international cooperation. The role of non-arctic countries such as China, India and Bangladesh makes the geopolitical landscape more complex, as their growing interest in the Arctic sector outlines the global importance of the field.

The environmental implications of these changes are equally important. The arctic ecosystems, as a result of rapid melting of snow and increase in sea level, highlights the urgency of addressing climate change. Arctic regime should prefer environmental protection to protect the biodiversity of the region, reduce the effects of climate change, and ensure that the region remains living for local communities.

To Add these complex issues, requiring a balanced approach, a one that integrates economic development, environmental stability and geo-political stability. Strengthening international cooperation, increasing scientific research, and including indigenous communities in decision making are important steps towards achieving this balance. Additionally, promoting responsible resource extraction and promoting permanent energy initiatives will help reduce the environmental risks of the region.

### Policy recommendations for managing Arctic geo-political stress and environmental stability

Since the Arctic Economic and geologically become an important region, it is important for both Arctic and Non-Arctic countries that they adopt broader and cooperative policies that balanced the strategic importance of the region with their delicate environmental ecosystems We do. Below are major policy recommendations that can help manage geo-political stresses in Arctic, promoting sustainable development and environmental protection:

1. **Strengthen international cooperation through multilateral agreements**
  - **Enhance Arctic Council Role**

The Arctic Council, as the primary inter-governmental platform for the Arctic issues, should play a central role in the facility of

collaboration between Arctic states and non-Arctic stakeholders. To manage growing geo-political stress: Expand the mandate of the Arctic Council to include more widespread discussions on your environment and scientific focus -safety and resource regime.

Encourage the involvement of non-arctic states (such as China, India and Bangladesh) in arctic matters through the position of the observer, while ensuring that the decisions under the leadership of the Arctic nations remain.

- **Establish binding environmental agreements**

Given the share responsibility for Arctic environmental protection, the international community needs:

Create binding agreements to prevent environmental fall from resource extraction and shipping. This may include international rules for oil and gas drilling, mining and shipping routes, ensuring that economic activities do not compromise the delicate ecosystem of the region.

Strengthen the climatic goals of the Paris Agreement with specific goals centered on the Arctic region, especially about the loss of sea ice and global warming effects.

## **2. Promote Sustainable Resource Development**

- **Responsible Resource Extraction**

To balance economic development with environmental protection: Encourage Arctic states and companies to adopt the best practices in resource extraction, including permanent mining and carbon capture technologies for oil and gas operations. Support indigenous communities in the Arctic, ensuring that their rights and traditional livelihood are protected through inclusive policy-making and counseling processes in resource development.

- **Support Arctic Renewable Energy Initiative**

Arctic has significant abilities for renewable energy projects such as wind and hydroelectric. The policy should pay attention: Promote clean energy investment to reduce the environmental footprint of resource extraction. Governments should encourage private sector investment in green technology for the Arctic, such as upset wind fields and permanent energy infrastructure. Increasing international cooperation on clean energy research in Arctic, especially with countries such as Canada, Denmark, and Norway, which leads to Arctic renewable energy development.

## **3. Establish clear and cooperative maritime rules**

- **Develop a comprehensive Arctic Shipping Code**

To facilitate safe and efficient shipping in Arctic while protecting the environment: Install a global shipping code for Arctic routes, covering issues such as snow-breaking, pollution control and emergency response system in the event of accidents. Work with international bodies such as International Marine Organization (IMO), including implementing strict environmental rules for arctic shipping, limiting emissions and preventing oil spreading in this sensitive field.

- **Search and Rescue (SAR) expand cooperation**

As such as Arctic Shipping Lane open, the risk of accidents increases, search and rescue (SAR) need increased cooperation: Establish multinational SAR agreements between Arctic and Non-Arctic nations to ensure rapid and coordinated reactions to any accident in Arctic water. Invest in infrastructure and technology for Arctic Rescue Missions, including the creation of SAR hub in strategic locations and improving the icebreaker fleet.

## **4. Address climate change and environmental protection**

- **Strengthen climate change optimization for Arctic communities**

Climate change is an external impact on the Arctic ecosystem and indigenous communities.

The policy should pay attention: Support climate adaptation programs for Arctic countries and weaker communities, especially in coastal areas, to protect them from sea level rise and permafrost thawing's. Promoting research on climate flexibility, focusing on the ecological effects of the Arctic warming climate, and sharing knowledge and solutions among international partners.

- **Arctic biodiversity conservation**

To preserve the delicate biodiversity of the region: Focus on important ecosystems such as the development and implementation of protected areas in the Arctic, Arctic Marine Environment, migrant routes and breeding base for marine mammals and birds.

Strengthening the regional biodiversity management agreements under the Convention on Biological Diversity (CBD), to ensure that protection efforts in the Arctic are coordinated and effective.

## **5.**

- **Include indigenous people in decision making**

Indigenous Arctic communities have significant knowledge about the environment and have lived in the region for centuries. Policy: Ensure indigenous representation in Arctic rule bodies and decision-making processes, especially in discussion on resource development and environmental protection. Supporting indigenous leadership on climate change and environmental stability, ensuring that their voices are heard in extensive geopolitical discussions about Arctic policies.

- **Attach non-arctic nations in global climate discussion**

Non-Arctic nations, especially for climate effects such as Bangladesh and India, are highly unsafe, should be included in the global arctic policy dialogues. Arctic's environmental risks and their attitudes on wide global climate agenda can contribute to more balanced, inclusive decisions on Arctic rule.

## **6. Encourage scientific cooperation and research**

- **Increase international scientific partnership**

Scientific research is necessary to understand the rapidly changing Arctic atmosphere. Policy: International scientific cooperation with Climate Studies, Marine Biology, and Geology to monitor Arctic changes, International Scientific Cooperation with countries such as Russia, Canada and U.S., as well as non-across countries, Foster International Scientific Cooperation. Support Arctic Research Funding and Infrastructure, such as Icebreaker, research stations and satellite monitoring, so that scientists are able to collect significant data on Arctic ecosystem, weather patterns and resource distribution.

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