

**T.R.
MANİSA CELAL BAYAR UNIVERSITY
GRADUATE SCHOOL**



**MASTER OF ARTS THESIS
DEPARTMENT OF POLITICAL SCIENCE AND INTERNATIONAL
RELATIONS**

**COMPARISON OF TERRITORIAL CLAIMS FOR THE ARCTIC
REGION AND THE ANTARCTIC CONTINENT IN THE
FRAMEWORK OF THE IMPACTS OF CLIMATE CHANGE:
THE CASES OF THE USA AND RUSSIA**

Ali SAYILGAN

**Supervisor:
Assoc. Prof. Dr. Sühal ŞEMŞİT**

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TAAHHÜTNAME

Bu tezin Manisa Celal Bayar Üniversitesi Lisansüstü Eğitim Enstitüsü Siyaset Bilimi ve Uluslararası İlişkiler Ana Bilim Dalında akademik ve etik kurallara uygun olarak yazıldığını ve kullanılan tüm literatür bilgilerinin referans gösterilerek tezde yer aldığını, tamamen kendi çalışmam olduğunu, her alıntıya kaynak gösterdiğimi, tezin yazımında akademik ve etik kurallara aykırı herhangi bir yapay zekâ ve program kullanmadığımı beyan ederim.

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ÖZ

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İKLİM DEĞİŞİKLİĞİNİN ETKİLERİ ÇERÇEVESİNDE ARKTİK BÖLGESİNE VE ANTARKTİKA KITASINA YÖNELİK BÖLGESEL HAK TALEPLERİNİN KARŞILAŞTIRILMASI: ABD VE RUSYA ÖRNEKLERİ

İklim değışikliği, küresel ısınma nedeniyle dünyanın sıcaklık dengesinin zarar görmesi sonucu ortaya çıkan iklimsel anomalilerdir. Özellikle Sanayi Devrimi sonrasındaki süreçte antropojenik etkiler sebebiyle giderek artan küresel ısınma, kutup bölgelerinde ciddi buzul kayıplarına neden olmuş ve iklim değışikliğinin etkileri 1990’lardan sonra giderek daha da belirginleşmiştir. Küresel ısınma sebebiyle öncelikle Arktik bölgesinde ciddi miktarda buzul kayıpları olmuş, yeni deniz rotaları ortaya çıkmış ve mineral ve hidrokarbon kaynaklarına erişim kolaylaşmıştır. Bunun sonucunda Arktik bölgesine yönelik olarak bazı devletler bölgesel hak talepleri ilan etmiş ve 1996 yılında Arktik Konseyi kurulmuştur. Buna karşın Antarktika kıtasındaki buzul kayıpları daha az olmuştur ancak Arktik’e benzer biçimde kıtaya yönelik geçmişte bölgesel hak talepleri olmuştur. Bu talepler 1959 yılında imzalanan Antarktika Anlaşması ile dondurulmuş ve kıta bilime ve barışa adanmıştır. Kutup yönetişimine yönelik bu sistemlerin her ikisinde de Rusya ve Amerika Birleşik Devletleri önemli aktörlerdir. Arktik bölgesinde çatışmaya dayalı bir ilişki içinde olan bu iki aktör, Antarktika kıtasında ise barışçıl bir misyon üstlendiklerini savunmaktadırlar.

Bu alıřmada “Kresel iklim deęiřiklięi, kutup blgelerinin ynetiřiminin srdrlebilirlięi ve kıtaya ynelik blgesel hak taleplerinin etkinlięi aısından belirleyici bir faktr mdr?” sorusu zerinden yola ıkılarak kresel iklim deęiřiklięinin hem kutup blgelerine ynelik blgesel hak taleplerinin řekillenmesindeki rol hem de Rusya ve Amerika Birleřik Devletleri’nin politikaları erevesinde kutup ynetiřiminin srdrlebilirlięi zerindeki etkisi vaka alıřması yntemiyle incelenmiřtir. Bu erevede kutup blgelerinin korunabilmesi aısından kutup ynetiřim mekanizmalarının ne derece srdrlebilir standartlara sahip olduęunu belirlemek amalanmıřtır.

Anahtar Kelimeler: İklım Deęiřiklięi, Kutup Ynetiřimi, Blgesel Hak Talepleri, Arktik, Antarktika, Rusya, Amerika Birleřik Devletleri.

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ABSTRACT

Master of Arts Thesis

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COMPARISON OF TERRITORIAL CLAIMS FOR THE ARCTIC REGION AND THE ANTARCTIC CONTINENT IN THE FRAMEWORK OF THE IMPACTS OF CLIMATE CHANGE: THE CASES OF THE USA AND RUSSIA

Climate change is the climatic anomalies that occur as a result of the damage to the world's temperature balance due to global warming. Increasing global warming due to anthropogenic effects, especially in the period after the Industrial Revolution, has caused serious glacier losses in the polar regions, and the effects of climate change have become more and more evident after the 1990s. Owing to global warming, there have been serious glacier losses primarily in the Arctic region, new sea routes have emerged, and access to mineral and hydrocarbon resources has become easier. As a result, some states declared territorial claims for the Arctic region, and the Arctic Council was established in 1996. In contrast, glacier losses in the Antarctic continent have been less, but similar to the Arctic, there have been territorial claims to the continent in the past. These claims were frozen by the Antarctic Treaty signed in 1959, and the continent was dedicated to science and peace. Russia and the United States of America are important actors in both of these systems of polar governance. These two actors, who have a conflict-based relationship in the Arctic region, argue that they undertake a peaceful mission in the Antarctic continent.

In this study, starting from the question “Is global climate change a determining factor in terms of the sustainability of the governance of the polar regions and the effectiveness of the territorial claims to the continent?”, the role of global climate change in shaping the territorial claims to the polar regions and its impact on the sustainability of polar governance within the framework of the policies of Russia and the United States of America are analyzed through case study method. In this framework, it is aimed to determine to what extent polar governance mechanisms have sustainable standards in terms of protecting the polar regions.

Keywords: Climate Change, Polar Governance, Territorial Claims, Arctic, Antarctica, Russia, the United States of America.

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ABBREVIATIONS

AAT	Australian Antarctic Territory
AC	Arctic Council
ACAP	Arctic Contaminants Action Program
ACIA	Arctic Climate Impact Assessment
AEC	Arctic Environmental Cooperation
AEPS	Arctic Environmental Protection Strategy
AMAP	Arctic Monitoring and Assessment Programme
ANCSA	Alaska Native Claims Settlement Act
ASOC	Antarctic and Southern Ocean Coalition
AT	Antarctic Treaty
ATCM	Antarctic Treaty Consultative Meeting
ATS	Antarctic Treaty System
AZRF	Arctic Zone of the Russian Federation
BANZARE	British, Australian, and New Zealand Antarctic Research Expedition
BAS	British Antarctic Survey
BAT	British Antarctic Territory
BC	Before Christ
CAE	Canadian Arctic Expedition
CAFF	Conservation of Arctic Flora and Fauna
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CCAS	Convention for the Conservation of Antarctic Seals
CEP	Committee for Environmental Protection
CH₄	Methane
CLCS	Commission on the Limits of the Continental Shelf
CMIP	Coupled Model Intercomparison Project Phase
COMNAP	Council of Managers of National Antarctic Programs
COP	Conference of the Parties
CO₂	Carbon Dioxide
CW	Cold War
DHHS	Department of Health and Human Services

DOC	Department of Commerce
DOE	Department of Energy
DOI	Department of the Interior
DOS	Department of State
DOT	Department of Transportation
EC	European Commission
Ed.	Editor
Eds.	Editors
EEZ	Exclusive Economic Zone
EIAs	Environmental Impact Assessments
EPPR	Emergency Prevention, Preparedness and Response
EU	European Union
FAR	First Assessment Report
FID	Falkland Island Dependencies
FIDS	Falkland Island Dependencies Survey
FSB	Federal Security Service
GHGs	Greenhouse Gases
GMST	Global Mean Surface Temperature
GW	Global Warming
GWP	Global Warming Potential
GWPS	Global Warming Potential Scenarios
G-20	Group of 20
HBC	Hudson's Bay Company
HSPD	Homeland Security Presidential Directive
H.R.	House of Representatives
H2O	Water Vapor
IAATO	International Association of Antarctica Tour Operators
IARPC	Interagency Arctic Research Policy Committee
IASC	International Arctic Science Committee
ICJ	International Court of Justice
ICL	International Court of Law
IGY	International Geophysical Year
IMF	International Monetary Fund
IMO	International Maritime Organization

IMPs	Illustrative Mitigation Pathways
IMP-GS	Illustrative Mitigation Pathway-Gradual Strengthening
IMP-LD	Illustrative Mitigation Pathway-Low Energy Demand
IMP-Neg	Illustrative Mitigation Pathway-Negative
IMP-Ren	Illustrative Mitigation Pathway-Renewable Energy
IMP-SP	Illustrative Mitigation Pathway-Shifting Pathways
IPCC	Intergovernmental Panel on Climate Change
IPCC-SAR	Intergovernmental Panel on Climate Change-Second Assessment Report
IPEV	French Polar Institute Paul-Émile Victor
IPY	The International Polar Year
LNG	Liquefied Natural Gas
MHWs	Marine Heatwaves
NAMMCO	North Atlantic Marine Mammal Commission
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NEAFC	North East Atlantic Fisheries Commission
NGOs	Non-Governmental Organizations
NOAA	National Oceanic and Atmospheric Administration
NP	Northeast Passage
NSC	National Security Council
NSDD	National Security Decision Directive
NSDM	National Security Decision Memorandum
NSF	National Science Foundation
NSPD	National Security Presidential Directive
NSR	Northern Sea Route
NWMP	North-West Mounted Police
N₂O	Nitrous Oxide
OCTA	Overseas Countries and Territories Association
OD	Ottawa Declaration
ODSs	Ozone-Depleting Substances
OPEC	Organization of Petroleum Exporting Countries
O₃	Ozone

PAME	Protection of the Arctic Marine Environment
PDD	Presidential Decision Directive
PNRA	Programma Nazionale di Ricerche in Antartide
PRC	People's Republic of China
RCMP	Royal Canadian Mounted Police
SAO	Senior Arctic Official
SAR	Second Assessment Report
SCAR	Scientific Committee on Antarctic Research
SDWG	Sustainable Development Working Group
SPAs	Specially Protected Areas
SSPs	Shared Socio-Economic Pathways
TAAF	French Southern and Antarctic Lands
TAE	Trans-Antarctic Expedition
TAPS	Trans-Alaska Pipeline System
UK	United Kingdom
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UPJ	Uti Possidetis Juris
USA	United States of America
US	United States
USEPA	United States Environmental Protection Agency
USSR	Union of Soviet Socialist Republics
WB	World Bank
WMO	World Meteorological Organization
WWI	World War I
WWII	World War II

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INTRODUCTION

The phenomenon of climate change is characterized by climatic anomalies arising from Global Warming (GW), primarily fueled by the accumulation of greenhouse gases (GHGs) in the atmosphere. This disrupts the delicate global temperature equilibrium and poses substantial risks to ecosystems on a worldwide scale. In this context, the factors that ensure the constancy of the global climate balance at a certain level and within a certain range are of great importance. Polar regions, which contain vast glacier masses, are foremost among these elements as they help prevent excessive GW. However, both Antarctica in the South and the Arctic in the North have experienced substantial glacier losses, particularly intensified since the Industrial Revolution. Consequently, these losses contribute to a detrimental feedback loop, further exacerbating GW.

Despite the environmental challenges posed by glacier retreat, it has also led to increased accessibility to underground and surface resources in these polar regions. This accessibility has prompted various states to pursue activities aligned with their national interests in these areas. Throughout history, numerous states have asserted territorial claims over the polar regions, a trend that continues to influence geopolitical dynamics today.

Among these areas, the Arctic region in particular has been significantly more affected by climate change than Antarctica and has consequently become a region where states assert their claims through more aggressive policies. In this context, since 1907, based on the Sector Theory proposed by Canadian Senator Pascal Poirier, Canada, the Kingdom of Denmark, Finland, Iceland, Norway, the Russian Federation (Formerly the Union of Soviet Socialist Republics (USSR), Sweden, and the United States of America (USA) have asserted rights over specific sectors (Elferink and Rothwell, 2001: 121-123). However, numerous disputes have arisen in the past due to conflicting claims over certain areas. These disputes have been somewhat mitigated by the establishment of the Arctic Council (AC), which consists of the 8 Arctic states and observer members, under the framework of the Ottawa Declaration (OD) declared on 19 September 1996 (AC, 2024a: 2-3). However, a mechanism for fully overseeing the Arctic states has not yet been allocated within the structure of the council.

Antarctica, conversely, is a region where states penetrated later, largely due to its status as the coldest place on Earth, housing significantly larger glacier masses

compared to the Arctic, and being devoid of any terrestrial links to the continent. The territorial assertions here have similarly been steered by the Sector Theory that has influenced claims within the Arctic region. Within this framework, after 1908, the United Kingdom (UK), New Zealand, France, Australia, Norway, Chile, and Argentina have asserted jurisdiction over specific sectors on the continent, with the USSR and the USA also asserting reserved claims in the region. Nevertheless, although the claims of these asserting states were not invalidated, they were effectively put on hold with the signing of the Antarctic Treaty (AT) in 1959 following negotiations among the states during the International Geophysical Year (IGY) of 1957-58. (AT, 1959: 21-23).

Following the implementation of the AT, subsequent agreements such as the Convention for the Conservation of Antarctic Seals (CCAS) (London 1972), the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) (Canberra 1980), and the Protocol on Environmental Protection to the AT (Madrid Protocol, 1991) were incorporated into the Antarctic Treaty System (ATS). These measures served to establish Antarctica as a prominent global scientific laboratory dedicated to scientific research and international peace efforts (Leuprecht and Causey, 2022: 73).

Of these two governance mechanisms established in the polar regions, the AC is seriously affected both by conflicts of interest and wars in international politics and by disputes over resources and the continental shelf in the region. In Antarctica, there is a more effective functioning, especially through the prohibition of feasibility and extraction activities for underground resources within the Madrid Protocol and the regulation and supervision of the use of surface resources by units such as CCAMLR, Committee for Environmental Protection (CEP), Scientific Committee on Antarctic Research (SCAR), etc. within the ATS (SCAR, 2024: 1). However, recent developments such as Russia's resurgence as a prominent player in the international arena vis-à-vis the USA in the post-Cold War (CW), its assertive and war-driven policies, as well as the heavily politicized nature of the global arena due to various conflicts and crises, have brought about a politicization of relationships among stakeholders and governance elements in the polar regions.

In addition to negative political factors, the Arctic region has seen the emergence of new strategic sea routes and increased accessibility to new underground resource areas due to climate change and GW. These effects are becoming more severe, leading some states to view this situation as a security concern. While Antarctica has

experienced relatively fewer glacier losses, there is concern that the ATS may be inadequate in terms of protecting the continent, especially with the expectation of significant losses similar to those in the Arctic in the future, along with the risk of easier access to underground resources. Consequently, a negative correlation has emerged between the increasing impact of climate change and the sustainability of governance mechanisms in the polar regions.

In this research, initiated by the question “Is global climate change a determining factor in terms of the sustainability of the governance of the polar regions and the effectiveness of the claims to the continent?”, the objective is to assess the durability of governance structures in the polar regions, their compliance with international law, potential future risks, and systemic solutions, with a specific focus on American and Russian policies in the polar regions. The study employs a literature review methodology that relies on qualitative data and a descriptive approach, eschewing extensive theoretical speculation in favor of utilizing established theories like Realism Theory. Additionally, a Case Study Methodology is adopted to conduct the analysis, employing a Collective Case Study framework based on Cross-Case Analysis to elucidate similarities and differences in actor behaviors and governance elements.

The variables used in this context are as follows: Independent variable of the study is the effects of climate change due to GW. Dependent variables of the study are developments in the polar regions due to GW, state policies shaped by these developments, interest-oriented territorial claims to the poles, and the functioning and sustainability of polar governance mechanisms. Lastly the intervening variables of the study are the anarchic structure of the international system, the effects of international law, the effects of international agreements and coalitions.

To analyze the aforementioned situations, international studies and agreements conducted under the United Nations (UN), agreements formulated within the ATS and Antarctic Treaty Consultative Meeting (ATCM) reports, studies undertaken within the AC, decisions of international law, practices of states in the international arena, doctrines, and judicial decisions rendered by international courts are utilized as crucial research and evaluation tools

Important academic studies have also been conducted on the governance of polar regions and the effects of climate changes on this governance. For example, the book “Polar Cousins: Comparing Antarctic and Arctic Geostrategic Futures” compiled

by Christian Leuprecht and Douglas Causey is one of them (Leuprecht and Causey, 2022). The other article titled “Polar Opposites: Assessing the State of Environmental Law in the World's Polar Regions” authored by Mark P. Nevitt and Robert Percival serves as a significant example in contemporary discourse also (Nevitt and Percival, 2018).

However, this scholarly work distinguishes itself by undertaking a thorough examination of current agreements and multinational governance mechanisms. It scrutinizes instances where these frameworks, designed to foster cooperation, manifest deficiencies that diminish their efficacy during international crises. Additionally, the study meticulously explores the intricate role of climate change in exacerbating these shortcomings, thereby contributing to the literature on the complex interplay between environmental law and global environmental challenges in polar regions.

The primary reason for selecting this topic is to draw attention to the critical importance of the polar regions as key habitats crucial for maintaining global climate balance. These regions are particularly vulnerable to the impacts of GW and the self-serving activities of states in these areas. Moreover, the aim is to emphasize the insufficiencies in the governance structures established for managing the poles effectively. If the loss of polar ice caps cannot be averted, there are risks that the future effects of GW may threaten the existence of all living things. According to the most extreme climate change scenarios, there is a possibility of complete destruction of the life. Within this context, the protection of the polar regions necessitates, first and foremost, a focus on state-level initiatives and governance mechanisms in the poles.

Therefore, there is a need to address and regulate industry-driven activities at the global level, especially those that pose risks to the environment. Overall, safeguarding the polar regions requires a multi-faceted approach involving strong state actions and global regulations to ensure the conservation of these vital ecosystems and mitigate the potential adverse consequences of climate change.

This study is structured into three main sections. The first section establishes the theoretical background and conceptual framework. It begins with an exploration of Realism, specifically Classical Realism, which forms the theoretical foundation of the study. This theoretical basis is then contextualized within the definition of climate change and various theoretical perspectives on its causes. Subsequently, the section delves into the impact of climate change throughout history, its current effects, and potential future scenarios, as articulated through the lens of UN organizations and

reports. The third part of this section examines the effects of climate change on both natural and human geography, organized into relevant sub-headings. Additionally, it addresses the unique impact of climate change on polar regions, detailing how these areas both influence and are affected by global climate shifts. This section concludes by elucidating the concept of territorial claims within the context of climate change. Also, at the end of the chapter, the methodology of the research is given.

In the second part of the study, the background of settlements and state activities in the Arctic region is discussed initially, followed by an exploration of the developmental stages of the process that commenced with states asserting territorial claims and culminated in the establishment of the AC. Furthermore, the historical evolution of exploration expeditions towards Antarctica and the formation of the ATS, which transpired within the context of emerging territorial claims, are delineated.

In the third section of the study, the analysis focuses on the impacts of Russian and American polar policies on the sustainability of governance mechanisms in polar regions. This examination is conducted within a historical context, emphasizing the role of climate change in shaping these policies and their governance implications. A comparative approach is employed to highlight both the distinctions and similarities between Arctic and Antarctic governance mechanisms. Furthermore, the section evaluates the legal frameworks governing territorial claims in international law, scrutinizing the validity and binding nature of agreements established by international organizations. This analysis draws on historical and contemporary international crises and conflicts to contextualize the efficacy and challenges of these legal frameworks. Finally, the study synthesizes its findings within the framework of Realism Theory, offering a comprehensive assessment of the subject matter. This theoretical lens provides insights into the motivations and behaviors of state actors in polar governance, thereby enriching the overall understanding of the sustainability and effectiveness of governance mechanisms in polar regions.

In the conclusion section of the study, a comprehensive summary of the subject matter is provided along with the conclusions drawn from the findings. The identified risks, proposed solutions, and an overall assessment regarding the degree to which the research question requirements have been met are also encompassed in this section.

CHAPTER ONE

THEORETICAL AND CONCEPTUAL FRAMEWORK

The theory of Realism was used to create the theoretical framework in this study, which is based on climate change, the sustainability of the governance mechanisms of the polar regions and the effects of territorial claims. In the realm of realism, particularly Classical Realism, significant emphasis is placed on various elements such as the role of the state within the international system, the dynamics of the “balance of power”¹, the perpetual quest for security, inter-state relations, and the pursuit of securing and safeguarding national interests. Furthermore, Neorealism or Structural Realism has been employed in certain instances to elucidate the behaviors exhibited within this system. Within this theoretical framework, an analysis was conducted on the concepts of climate change and territorial claims.

1.1. REALISM

1.1.1. Classical Realism

The origins of Realism, a foundational theory in the field of international relations, trace back to the Peloponnesian War (431-404 Before Christ (BC)), a conflict between Athens and Sparta during Ancient Greece. The theory of Realism, commonly attributed to the segment of Thucydides' work known as the ‘Melian Dialogue’ on this war, is termed Classical Realism. Key thinkers who developed and defended Classical Realism following Thucydides include Niccolo Machiavelli, Thomas Hobbes, and Hans Morgenthau (Dunne et al., 2021: 60-61; Thucydides, 1954: 447). Additionally, Edward Hallett Carr is recognized as another proponent of Classical Realism, albeit positioned as a transitional figure between Classical Realism and Neorealism. Carr's critiques centered on the perceived failures of liberal internationalist policies post-1920s and the ideals of Idealism, alongside occasional criticisms of Classical Realism (Donnelly, 2000: 26-30).

¹ The balance of power system represents the extent to which states in the international arena hold authority relative to each other. While the hegemonic states within the system have more power, the others can obtain less power. Within the framework of the balance of power system, which is one of the most important sub-elements of Realism, the powerful state always uses the elements in the system to achieve its own interests (Viotti and Kauppi, 2009: 31-34).

Furthermore, in the context of international relations as a discipline emerging post-World War I (WWI), influenced notably by Idealism, Carr's critical perspective on the international system, Morgenthau's emphasis on power dynamics, and the persistent insecurity inherent in the state's condition amid active international conflicts have elevated both the discipline of international relations and the Theory of Realism to significant prominence (Elman and Jensen, 2014: 33-39).

Realism theory adopts a fundamentally pessimistic outlook, grounded in an observation of the world as it is, rather than as it ideally should be. Within the discipline of international relations, realist thinkers concentrate on several key issues: the inherent selfishness of human nature, often referred to as the 'state of nature', and its impact on both individual states and the international system; the anarchic nature of the international system itself, where there is no overarching authority; the central role of the state in this anarchic system as the primary actor; the dynamics of the balance of power among states, which involves strategic interactions and alliances; the perpetual quest for security among states, driven by the absence of a global authority that can guarantee safety; and finally, the continuous pursuit by states to acquire and safeguard their interests within the international arena. These themes collectively define the core tenets of Realism within the study of international relations (Booth, 2011: 52-53; Viotti and Kauppi, 2009: 32-33).

In the understanding of Classical Realism, when defining the role of the state, the focus is on the similarities rather than the differences between the domestic system and the international system. Accordingly, the state is a rational actor and has a legal order and understanding of justice within its borders (Dunne et al., 2021: 59-60). On the contrary, within the international arena, the state exists in isolation and sustains itself primarily through its military capabilities and its diplomatic relations with other states. However, underlying both of these realms are the selfish ambitions and desires of individual actors (Donnelly, 2000: 187-188).

Additionally, man's selfish nature affects both systems (Dunne et al., 2021: 61). Thucydides also emphasized this point in the Melian Dialogue and identified the Athenian rulers' pursuit of power, interests and security, and the perception of this as a threat by other city-states, as the main cause of the war. In this context, Sparta is characterized not as the triggering party of the conflict, but rather as the party that was drawn into the war as a result of the pursuit of individual interests (Thucydides, 1954: 450-458).

In 'The Prince,' Machiavelli delves into the inherently malevolent, self-serving, and self-interested nature of individuals, shedding light on the traits deemed essential for a prince to embody. He articulates that a prince's decisions are guided by two fundamental concepts he terms 'fortuna' and 'virtù' (Machiavelli, 1998: 132-135; Whitfield, 1970: 55-58). Fortuna or fortune is a phenomenon that is predestined by God and which man cannot directly control through his common sense or actions, but over which he has the authority to intervene to a certain extent within his will (Donnelly, 2000: 176-177).

In another dimension, the concept of virtù, or virtue, underscores the imperative for a prince to deploy all available means to achieve objectives, even embracing selfishness and eliciting fear when deemed necessary. While Machiavelli accords morality and religion significant roles in his philosophical framework, he contends that in the pursuit of power and strategic interests, deceit often finds facile justification. Within this paradigm, Machiavelli fortifies virtue with attributes such as fortitude, capability, resolve, and tangible accomplishments (Donnelly, 2000: 174-175; Whitfield, 1970: 49-59). Simultaneously, he underscores the prince's necessity to embody the cunning of a fox and the strength of a lion in exercising these virtues. The persona of the prince, thus endowed comprehensively with traits oriented towards self-interest and authority, serves to underscore the self-serving nature of the state while augmenting its dominion and influence, both domestically and on the global stage (Machiavelli, 1998: 102-105).

On the other hand, in *Leviathan*, Thomas Hobbes used the term 'homo homini lupus' (Hobbes, 2008: 10) to describe the selfish nature of man, that is, 'the state of nature'. This discourse is translated as 'man is the wolf of man' (Hobbes, 2008: 86-89). According to this, people are equal in nature and this inequality leads to insecurity and insecurity leads to war. In other words, in the absence of a state or authority, people do not respect each other's lives, property and personal freedoms, resulting in anarchy (Ağaoğulları, 2015: 434).

Nevertheless, through the institution of sovereign power or absolute authority, as articulated by Hobbes in his concept of the 'Leviathan,' whereby individuals willingly surrender their authority to the sovereign, internal peace can be secured within the state while projecting a formidable image to external adversaries on the international stage. This authoritative power, which symbolizes the personal interests of its subjects, consolidates the entity of the state and engages in inter-state

competition, where conflicting interests with other states' authorities often arise (Martinich, 2003: 48-50; Newey, 2014: 105-107).

According to Morgenthau, the construct known as a nation or state is essentially abstract, but it acquires tangible form through the collective meaning conferred upon it by its constituents. Thus, the foundation of a state's power emanates from the individuals comprising it. In this regard, the influence governing inter-state policies is intricately linked to the personal characteristics, interests, and aspirations of these individuals who constitute the states. Naturally inclined to maximize their self-interests in both domestic and foreign policy arenas, individuals inherently shape the self-interested nature of states themselves (Morgenthau, 1949: 73-75).

On the basis of all these arguments, thinkers advocating Classical Realism generally explain the role of the state in the international system, conflicts and anarchic structure in terms of the individuals' tendency to anarchy due to their selfish nature.

The elements that Classical Realism focuses on when explaining the role of the state are the importance of power in the international arena, the understanding of the balance of power, the search for security, and the understanding of obtaining and protecting interests. In this context, states try to ensure their security and protect their interests in the international arena as a result of both their military capacity, that is, the power and capacity they have, and the relationships and alliances they have established with other states. However, when interests are at stake in relations between states, dilemmas arise. At this point, if the role of a state increases too much compared to the roles of other states, it may lead to a war. For this reason, with the 'balance of power' to be established between states, even though a hierarchical structure is established between states, it may be possible to preserve the system up to a certain point by establishing a more balanced structure in terms of both power, security and benefit (Dunne et al., 2021: 62-63).

Especially the Peloponnesian War between Athens and Sparta provides an argument for this situation. Accordingly, Thucydides defines Athens' growing power and its attempt to gain the balance of power in its favor against Sparta as the background cause of the war (Elman and Jensen, 2014: 220-224). Machiavelli, in contrast, conceptualizes the balance of power as a "zero-sum game"², where the total

² The concept of the zero-sum game in international relations is defined as a scenario in which a state manipulates the power struggle between states to its advantage, thereby achieving dominance over its competitors and emerging victorious in the conflict. Within this paradigm, the balance of power is

amount of power remains constant across different historical epochs. According to this viewpoint, the overall quantity of power has not altered significantly from the early stages of empire to the present day; rather, what has changed is the distribution of power among those who attain it. Consequently, within this framework, certain states within the system may accrue substantial power while others may acquire relatively little, thereby shaping an international hierarchy. In such a scenario, conflicts may arise as states pursue security and endeavor to restore or maintain equilibrium in the balance of power (Ağaoğulları, 2015: 327-329).

Hobbes, on the other hand, adopts a more systematic approach at this point: According to him, the period before a sovereign power is called the state of nature and no human being has security of life and property. Afterwards, the state is built to allocate security, and power is given to a single ruler. The international system is formed by the coming together of many states, but just like the human state of nature, the international system is anarchic and has its own balance of power system. Hobbes describes this anarchic structure as the state of war (Booth, 2011: 21-23; Newey, 2014: 86). Furthermore, in describing the international system, Morgenthau correlates all political actions with the pursuit of power. He contends that behind every rationale articulated by those in authority, whether framed in terms of security, prosperity, freedom, or amalgamated with religious and political ideals, lies ultimately the relentless pursuit of power and self-interest (Morgenthau, 1949: 13-15).

As a result of these ideas on power, Morgenthau explained the anarchic structure of the international arena through six principles. These can be summarized as follows: Politics has its roots in human nature and has an objective and rational structure. In this context, a politician or authority is always self-interested, as it is also in human nature. In order to protect these interests in the international arena, the most important element is military power. Because morality is not important for a politics based on realism and it is essential to be shaped according to interests beyond moral approaches. However, if a politician wants to protect his/her interests in the international arena, he/she must act moderately and maintain the balance of power by making concessions at some points.

characterized by the condition in which only one side can emerge as the winner (Elman and Jensen, 2014: 224-225).

Based on all these arguments, a politician should be able to use all elements such as law, morality, religion, etc. to legitimize his/her policy and to protect his/her power and interests (Donnelly, 2000:16; Proctor, 2015: 1-4).

The understanding of Classical Realism, which started with Thucydides and then took shape with Machiavelli, Hobbes and Morgenthau, was interpreted from a different perspective by Edward Hallett Carr (1892-1982) in the 20th century. Carr criticized the understanding of Idealism, which rose especially after WWI, within the framework of Realism, but he also criticized Classical Realism (Booth, 2011: 26-27).

Carr elaborated his philosophy drawing from Machiavelli's insights, identifying three pivotal points within Machiavelli's theory. These points can be summarized as follows: Firstly, Carr emphasized that history unfolds through a sequence of cause-and-effect relationships, driven by pragmatic actions rather than fanciful or speculative ideas. In contrast to Idealist thinkers whom he categorized as Utopians, Machiavelli asserted that theory emerges from practice, rather than practice being derived from theory. Secondly, Carr underscored Machiavelli's assertion that politics is not subordinate to ethics; rather, ethics are shaped by political imperatives. This view challenges the traditional Idealist perspective that ethics should dictate political action (Carr, 1939: 63-64; Elman and Jensen, 2014: 39).

Carr advocated for a balanced approach that integrates the insights of both Idealism and Realism. He proposed that by harmonizing these perspectives, policymakers could derive pragmatic solutions to the challenges within the international system. Without such a synthesis, Carr argued, Idealists risked remaining trapped in utopian visions, while Realists would be confined to merely interpreting the status quo without envisioning possibilities for change and improvement (Carr, 1939: 68-75).

Following the criticisms brought to Classical Realism by Carr, some of the infrastructural foundations of the theory began to be questioned. Especially Kenneth Waltz has made a serious breakthrough in this regard with his Neorealism or Structural Realism approach.

1.1.2. Neorealism (Structural Realism)

The pivotal critique of Classical Realism in the 20th century emerged in the form of Neorealism or Structural Realism, articulated by Kenneth Waltz in his seminal work 'Theory of International Politics'. Departing from the anthropocentric view of human selfishness as the primary determinant of international relations, Waltz redefined the discourse by positing that the structure of the international system itself shapes and dictates state behavior (Donnelly, 2000: 16-19). According to him, the international system does not consist of a stray and chaotic disorder. On the contrary, it has an anarchic order, and this system is not a bandwagon but a balance (Elman and Jensen, 2014: 106).

In this context, the crucial element in the international system is the balance of power among states, where each state acts in self-interest and endeavors to safeguard its own interests. Waltz emphasizes that the balance of power framework holds greater significance than any overarching international authority. Consequently, states align themselves within this system either through their individual power capabilities or through alliances forged with other states (Waltz, 1979: 102-105).

These ideas of Waltz regarding Neorealism are called Defensive Realism. Accordingly, Waltz particularly emphasizes that a balance of power system is necessary in the international system. Because when a state upsets the balance of power and rises to a hegemon position, other states may accelerate their quest for power and this situation may turn into a security dilemma. Thus, the interests of the state that wants to become a hegemon may be endangered (Dunne et al., 2021: 77-85). This foundational argument of neorealism has been contested by realists like John Mearsheimer, who espouses Offensive Realism. According to Mearsheimer, a state must amass sufficient power to surpass all other states in the international system. He advocates that states should assert their hegemony aggressively, seeking to maximize their interests and power within the international arena. These views have been critiqued as extreme by some observers (Elman and Jensen, 2014: 177-183).

Consequently, Realism theory has profoundly influenced both the establishment of international relations as a discipline and its subsequent evolution. This study aims to harmonize the fundamental arguments of Classical Realism and Neorealism, addressing themes such as the pursuit of power in the international system, the balance of power, the anarchic nature of the international environment, the

impact (or lack thereof) of individual desires on global affairs, structural disparities and similarities between the international and intranational systems, and the dynamics of interest pursuit versus security concerns. These themes constitute the bedrock of Realism theory, from which ideas are generated and logical approaches are formulated. Moreover, Realism's critical stance on human nature, the self-interested behavior of states, and the dynamics of the international system represent the pivotal elements upon which the coherence of this study's arguments rests.

1.2. CLIMATE CHANGE

1.2.1. The Epistemology and Formation of Climate

Climate is a fundamental concept that typically denotes the long-term average of weather conditions observed over an extended period in a specific geographic area (Schneider and Dickinson, 1974: 448). Etymologically, “The word of climate came from the Greek word of klinein” (Bolle, 1985: 5). The term klinein used in ancient Greece was used to express the inclination of the earth from the equator to the poles and the differentiation in weather events between regions (Merriam-Webster, 2024a:1). David D. Houghton, while describing this differentiation between regions, defines climate as a specific weather pattern that occurs repeatedly over many years in a specific region (Houghton and World Meteorological Organization (WMO), 2002: 3).

In this context, climate is regarded as a broader concept compared to weather, which primarily encompasses shorter-term atmospheric phenomena. It is essential to distinguish clearly between these two concepts. The concept of weather, initially explored in Aristotle's work ‘Meteorologica’ (340 BC), focuses on predicting and measuring short-term atmospheric events within its dynamic structure, under specific conditions. In contrast, climate embodies a more intricate and encompassing concept (Frisinger, 1972: 634-635; Potter and Colman, 2003: 503-505).

The emergence and formation of climate is parallel to the development of the earth's formation process. According to Jim Bell, “the Sun and all the planets of our solar system were born around the same time, some 4.5 billion years ago, from the collapse of a huge spinning cloud of hot interstellar gas and dust” (Bell, 2019: 21). However, at the end of this first formation process of the Earth, there is not yet an

atmospheric structure that can create climate in parallel with today's definition of atmosphere (Bell, 2019: 22). In this regard, Michael Anderson states that the period between 4.5-2.5 billion years ago was not suitable for life due to the lack of oxygen in the atmosphere. However, he states that with the 'Proterozoic Eon', the atmosphere of the world began to form with the combination of many elements and both the vitality factor, and the climate factor developed (Anderson, 2011: 10-15).

At the point of the distribution of climate on the earth, characteristic differences emerge, and these constitute the global climate. Global climate is shaped by natural and human factors and expresses the general climatic characteristics of the world (Intergovernmental Panel on Climate Change (IPCC), 1990: 64-66). The primary determinant of global climate formation is solar radiation emitted by the sun, which reaches the Earth and is absorbed by various components such as oceans, atmosphere, biosphere, land surfaces, and ice. Central to this process is the GHGs effect, identified as the most influential mechanism maintaining a stable global climate equilibrium (Houghton and WMO, 2002: 4).

John F. B. Mitchell characterizes the GHGs effect as pivotal in stabilizing the Earth's climate. He identifies radiatively active gases, such as water vapor (H₂O), carbon dioxide (CO₂), and ozone (O₃) (Mitchell, 1989: 1), in the Earth's atmosphere as key agents in facilitating this effect. However, deviations in the concentration of these gases beyond certain thresholds can lead to adverse impacts on the complex systems known as climate (Mitchell, 1989: 2).

Climate systems, on the other hand, consist primarily of changes in the atmosphere and the factors affecting these changes. These factors can be characterized as glacier masses, land areas, biosphere (habitats) and oceans. All kinds of effects occurring on these can directly affect the climate (Houghton and WMO, 2002: 81-86). Bolle delineates the external forces that influence the factors shaping climate systems, encompassing tectonic movements, internal geological processes, solar radiation, volcanic activity, gravitational effects, and anthropogenic factors. This perspective underscores that both internal dynamics of the Earth and external influences significantly impact climate patterns and, consequently, the natural ecosystems supporting life (Bolle, 1985: 5-6).

In The First World Climate Conference dated 1979, it was stated that the effect and importance of the climate phenomenon in terms of the sustainability of living life, especially humans, is indisputable. In this context, from a sociological perspective,

climate and the resulting conditions are factors that directly or indirectly affect almost all human actions. In particular, the distribution of climate and its varying effects have significant effects on many situations such as economic factors, agricultural variables, health factors, the effect of green area and forest distribution on human geography, marine ecosystem, fishing activities, transportation activities (WMO, 1979: 35-40).

These effects manifest through changes in atmospheric pressure, temperature fluctuations, wind patterns, precipitation levels, evaporation rates, and duration of sunshine, all of which play crucial roles in shaping climate dynamics. Examining these factors reveals their profound influence and significance on both natural ecosystems and human geography. In this regard, the stability and equilibrium of climatic factors are essential prerequisites for sustaining life on Earth. Maintaining these factors in balance is imperative for ensuring the long-term viability and resilience of ecosystems and human societies alike (Turkish State Meteorological Service, 2024: 1-5).

There are basically two theories on how climate changes occur: According to the first theory, climatic anomalies occur because of extreme increases in GW. The second is the cycle that is generally thought to occur in response to GW and continues as the planet enters and exits ice ages. In this context, the ideas put forward on two different theories will be analyzed separately.

1.2.2. Theories on the Formation of Climate Change

1.2.2.1. The Theory of Global Warming or The Greenhouse Gases Theory

GW is the extreme deviations in the temperature balance that are shaped by the GHGs effect (GHGs Theory) and ensure that the world is climatically livable. The absorption of "long-wavelength solar radiation" from the sun by both the atmosphere and the ocean plays an important role in the formation of this effect (IPCC, 1990: 8; Dutta and Radner, 2009: 187-189). Through the absorption of solar radiation in the natural cycle, the average surface temperature of the Earth rises from -18 degrees Celsius to approximately +15 degrees Celsius, marking an increase of about +33 degrees Celsius. This temperature range is crucial as it creates conditions conducive to life on Earth (Mitchell, 1989: 1-2).

Nevertheless, the accumulation of certain gases in the atmosphere, known as GHGs, leads to excessive retention of solar radiation. This phenomenon causes the Earth's temperature to rise above average values, resulting in a global increase in planetary temperatures (IPCC, 2022a: 1489). The main GHGs that are effective in the formation of this effect can be listed as “H₂O, CO₂, nitrous oxide (N₂O), methane (CH₄), and O₃” (IPCC, 1995a: 21).

The first theorist to highlight the significance of GHGs in a theoretical framework was Jean Baptiste Fourier. He proposed that these gases play a crucial role in maintaining a balanced temperature on Earth, often referred to as "thermal equilibrium." Fourier argued that GHGs, particularly H₂O and CO₂, prevent the planet's oceans from freezing entirely. This greenhouse effect, according to his theory, helps sustain a climate conducive to life on Earth (Bell, 2019: 367; Burgess, 1837: 2-3).

Svante Arrhenius developed the theory and determined that the earth's climate warmed around 30 degrees thanks to the GHGs accumulated in the atmosphere (Ramanathan, 1988: 294). While shaping his theory, Arrhenius used the level of warming of the earth's climate by the amount of CO₂ as an argument and explained the formation of ice ages that occurred in past periods of time by associating them with the decrease in the amount of CO₂ in the atmosphere (Wisniak, 2002: 170).

In a pivotal development, Svukuro Manabe and Richard T. Wetherald conducted numerical modeling in 1967 to elucidate the impact of CO₂ within the frameworks of global energy balance and radiative-convective equilibrium theories. Their findings demonstrated that elevated levels of CO₂ intensify the greenhouse effect, leading to GW (Manabe and Wetherald, 1967: 241-250). In this regard, GW is commonly defined as the escalation in GHGs emissions.

GW, primarily driven by the effect of GHGs, represents the foundational factor triggering climate change. This phenomenon disrupts the Earth's current climatic equilibrium, leading to significant deviations in climate patterns. Consequently, the cyclic patterns of ice ages that historically regulated the planet's temperature balance are disturbed, resulting in threats to biodiversity due to global overheating. Historically, natural processes have been identified as contributing to climate variations, including the return to normal temperature values following periods of GW. However, contemporary discussions emphasize the escalating role of human activities—anthropogenic influences—in exacerbating GW (UN, 2024a: 1-4).

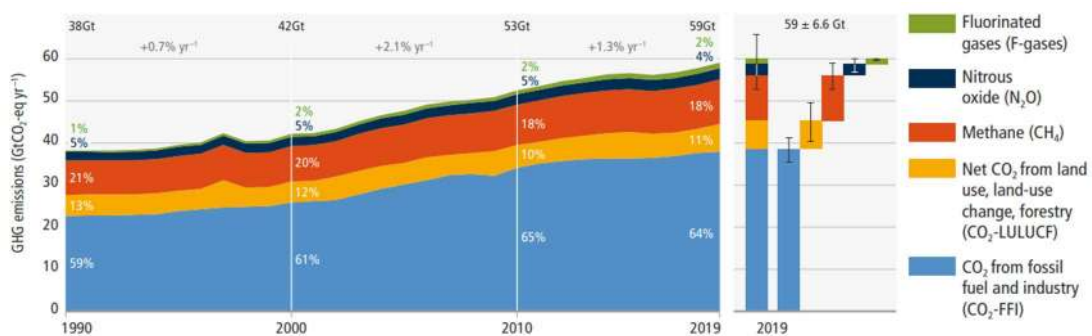
In this context, there is consensus among scientists regarding natural processes predominantly shaping GW before the Industrial Revolution. However, differing perspectives have emerged regarding the causes of the accelerated GW observed since the Industrial Revolution:

- According to the first of these, the cause of GW, the effects of which are felt today, is the increase in industrialization after the Industrial Revolution, the excessive use of fossil fuels and the uncontrolled release of GHGs emissions into the atmosphere.
- According to the second understanding, it is the assumption that an ongoing phenomenon such as increasing GW as a result of a systematic cycle underlying the functioning of the world and subsequent ice ages balancing this effect exists independently of human actions (Philander, 2012: 3-5).

Although there is not a full consensus on this point, based on research, it is thought that anthropogenic effects have a very serious share in the increase in GW, the effects of which have been observed recently.

While debates persist over the precise causes of GW, there is widespread consensus regarding its detrimental effects as it continues to unfold. In this context, in the 2018 IPCC GW of 1.5 °C Report, the argument “Human-induced warming reached approximately 1°C (likely between 0.8°C and 1.2°C) above pre-industrial levels in 2017” (IPCC, 2018: 51) was put forward. This situation shows that emissions have increased even after the start of the climate change awareness process after 1990. These increases are shown in the table below (IPCC, 2018: 52).

Figure 1: Global Net Anthropogenic Greenhouse Gases Emissions 1990–2019



Source: IPCC, 2024a: 7

As depicted in Figure 1, the concentration of CO₂ in the atmosphere has steadily risen since the onset of the Industrial Revolution, primarily attributed to its role as the principal driver of GW (IPCC, 1990: 66-68). In 1990, this concentration was approximately 26%. According to the IPCC AR5 Synthesis Report from 2014, the CO₂ concentration had increased to about 45% by 2010, with projections indicating it is expected to range between 40% and 60% by 2030 (IPCC, 2014: 83-85)

Furthermore, alongside the rising levels of CO₂, there is a notable escalation in the presence of other GHGs such as CH₄, nitrous oxide, and fluorinated gases in the atmosphere. This trend contributes significantly to the intensification of GW. In order to balance this increase in GHGs and emissions, the “2015 Paris Climate Agreement” was signed under the umbrella of the United Nations Framework Convention on Climate Change (UNFCCC) dated 1992, and it was decided by the states to make regulations to reduce GHGs emissions and keep GW below 2.0°C by 2030 (IPCC, 2022b: 242; UN, 2015: 1). Because it has been theorized that if the anthropogenic impact cannot be reduced, there is a risk that the world will be warmer than it has been in the last 10,000 years (Holocene) and this theory is still alive (IPCC, 1995a: 22-24)

1.2.2.2. The Theory of Ice Ages: The Climatic Regulators or Climatic Disasters

The Ice Age, also known as a Glacial Age, is characterized by the proliferation of glacial masses across terrestrial regions due to a significant cooling of global atmospheric temperatures resulting from pervasive and influential triggering factors. These glaciations can persist for millions of years, shaping the Earth's landscape profoundly (Chen et al., 2017: 51-52; Suggate, 1965: 619-621).

Within the context of ice ages, there exists a distinction between Glacial Stages and Interglacial Stages in terms of their formation, peak effectiveness, and subsequent impact durations. The Glacial Stage denotes the period of maximum cooling on the Earth's surface and the peak accumulation of glacier masses during an ice age. According to scholarly literature, the most recent glacial stage marks the culmination of the Quaternary period, specifically known as the Pleistocene Epoch, whose effects are discernible to this day. Conversely, the Interglacial Stage encompasses the intervals between ice ages characterized by GW relative to the preceding Glacial Stage. These stages represent warmer periods when ice sheets retreat and temperatures rise,

temporarily altering climatic conditions across the planet (The Editors of Encyclopaedia Britannica, 2024a: 1-3); Oceanic and Atmospheric Administration (NOAA), 2021: 1-2; Paillard, 2001: 326).

“Earth has witnessed five significant ice ages throughout its history. The first, the Huronian Ice Age, occurred approximately 2.4 to 2.1 billion years ago. The second, known as the Sturtian-Marinoan Ice Age, transpired around 850-630 million years ago. The third ice age, the Andean-Saharan Ice Age, occurred between 460-430 million years ago. Following this, the Karoo Ice Age took place from 350-260 million years ago. The most recent and well-known ice age is the Quaternary Ice Age, which began roughly 2.6 million years ago and persisted until the onset of the Holocene Interglacial Age around 10,000 years ago. The Holocene epoch continues to the present day (Adamo et al., 2021: 609; National Aeronautics and Space Administration (NASA), 2023: 1-3).”

The occurrence and conclusion of ice ages are attributed to significant fluctuations in global temperatures and climate patterns. These periods are characterized by extensive glaciation, during which global cooling predominates. Ice ages play a crucial role in regulating Earth's climate and environmental conditions. They are considered pivotal in restoring climatic equilibrium by counterbalancing periods of GW and contributing to the maintenance of biodiversity and ecological stability. Thus, ice ages hold profound importance in both global climate dynamics and the sustenance of life on Earth (Adamo et al., 2021: 608).

When the factors that trigger the formation of ice ages are examined, tectonic movements, the effect of the earth's orbit, volcanoes, the effect of solar radiation and changes in ocean currents come to the fore (Adamo et al., 2021: 606-607). Especially the theory put forward by Milutin Milankovic on the effect of the earth's orbit on ice ages and called Milankovic Cycles is very important (Bell, 2019: 193).

Milankovitch proposed that variations in the Earth's axial tilt (obliquity), its orbital eccentricity (the shape of the orbit around the Sun), and precession (the wobble of the Earth's axis) influence the amount and distribution of solar radiation reaching the Earth's surface. These factors are instrumental in driving climate variations and influencing the initiation and duration of ice ages by impacting global temperature dynamics. Specifically, changes in these orbital parameters affect the seasonal and latitudinal distribution of solar energy, thereby regulating GW processes and contributing to the onset or decline of ice ages over geological timescales (Muller and

MacDonald, 1997: 215-218).

At this point, he argued that the earth makes a complete revolution every 26,000 years, but its elliptical revolution is approximately 21,000 years. He stated that seasonal effects occur with these two revolutions. He also suggested that ‘angular changes’ occur between the axis of the earth and the inclined orbital plane of the earth, and that inferences can be made by observing them. In the 19th century, astronomers such as Joseph Adhemar and James Croll put forward similar approaches, but no complete periodic evidence could be reached (Short et al., 1991: 163-164).

Regarding the frequency of ice ages, Mark Maslin has proposed that the onset and conclusion of these periods, which historically occurred over extended intervals, are now unfolding at a significantly accelerated pace in the present era. There is speculation that the Holocene Interglacial Age, which commenced approximately 10,000 years ago, may be nearing its conclusion. This hypothesis is supported by observations of rapid ice melt in the Antarctic, where glaciers formed around 35 million years ago, and in the Northern Hemisphere, where glaciers have been present for approximately 2.5 million years since the waning stages of the last ice age. These phenomena underscore the potential impact of contemporary climate changes on the Earth's glacial and interglacial cycles (Maslin, 2014: 35-38).

In addition, according to some climate authorities, there are serious doubts about the beginning of another ice age after the Holocene (Dryzek et al., 2011: 2). However, based on historical data and current trends, there are more specific projections suggesting that the Earth could potentially enter a new ice age within the next 1,000 years. This prediction takes into account the escalating GHGs effect and GW, which historically have influenced climate shifts towards periods of glaciation (Maslin, 2014: 39-40).

Since the onset of the Holocene epoch around 10,000 years ago, the Earth has experienced a relatively stable and balanced period in terms of its ice age cycle dynamics. During this epoch, human civilizations developed and flourished, establishing dominance in many regions of the world. However, the advent of an increasingly interconnected and industrialized global society has amplified what is known as the ‘Anthropogenic Impact’ on the Earth's climate. This impact has been primarily driven by the rising levels of GHGs in the atmosphere, which have significantly disrupted the Earth's natural self-regulating mechanisms (Chen et al., 2017: 1202-1210).

On the other hand, since the impact of humans on the environment was much more limited in the pre-Holocene period, no significant technological progress had yet been made, and nature was an element that humans could not control and were seriously affected by, the climatic cycle was always renewed in the form of cycles until today. has arrived (Dryzek et al., 2011: 1-3).

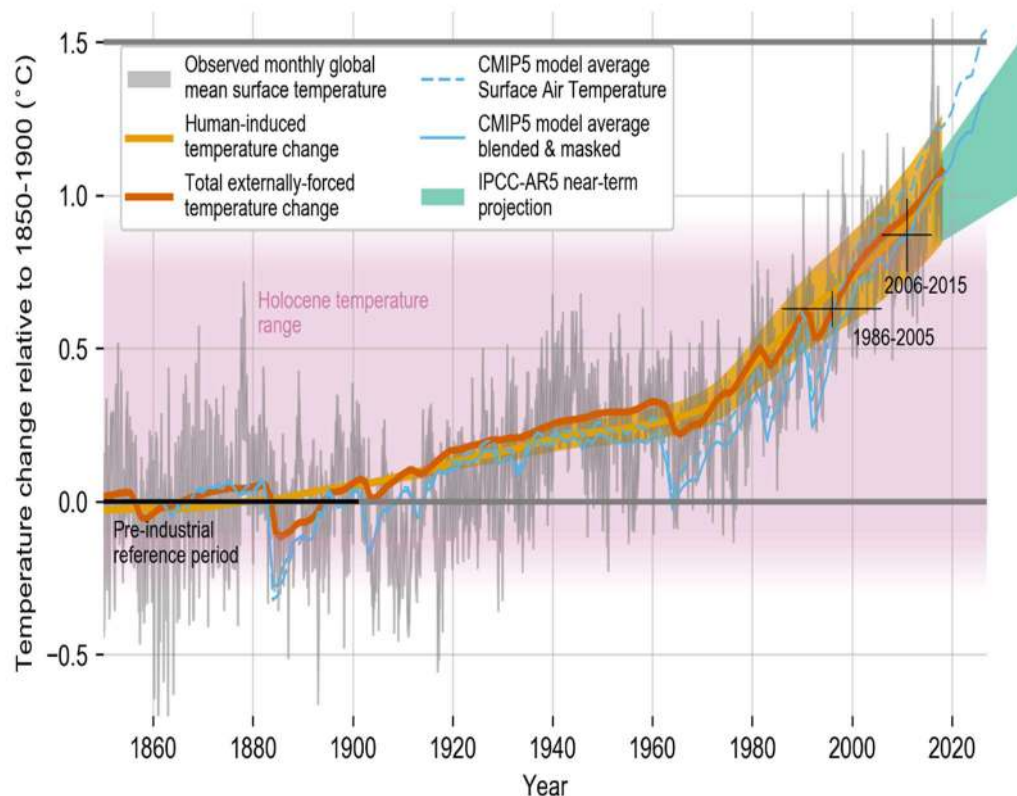
From an inferential perspective, hyper-climatic extremes such as ice ages profoundly influence the function and viability of biological organisms and natural elements. Despite their extreme impacts, these events play a crucial role in maintaining a sustainable trajectory for the planet. They regulate essential physical and chemical processes, thereby acting as pivotal mechanisms in shaping and concluding the internal dynamic structures of Earth. In this context, it becomes clear that ice ages work as climatic regulators and are very important elements in terms of the world climate (Chen et al., 2017: 48-53).

1.2.3. Studies and Scenarios for Assessing the Impacts of Global Warming and Climate Change

In theoretical discourse, a pivotal framework revolves around the climatic dynamics shaped by the GHGs effect, exacerbated by GW, and culminating in climate change due to anthropogenic activities. The UN, along with its affiliated sub-organizations and international agreements facilitated under its auspices, represents the foremost international entity fostering the evolution of climate change theory and its practical applications (Purvis and Busby, 2004: 69). In this context, with the 2030 Agenda for Sustainable Development Goals announced by the UN in 2015, 17 goals were determined to identify the causes of climate change, determine solutions, prevent climate change or improve adaptation standards, and initiatives were initiated to implement them in the next 50 years (Leuprecht and Causey, 2022: 206-208).

Furthermore, in the IPCC reports issued by the WMO and the United Nations Environment Programme (UNEP) since 1988, which constitute crucial resources for understanding climate change, the concept of Global Warming Potential (GWP) has been employed extensively. GWP models help quantify the rate of acceleration in GW since the Industrial Revolution and delineate the anthropogenic contribution to this phenomenon. These findings are depicted in Figure 2.

Figure 2: Evolution of Global Mean Surface Temperature (GMST) 1850-2020



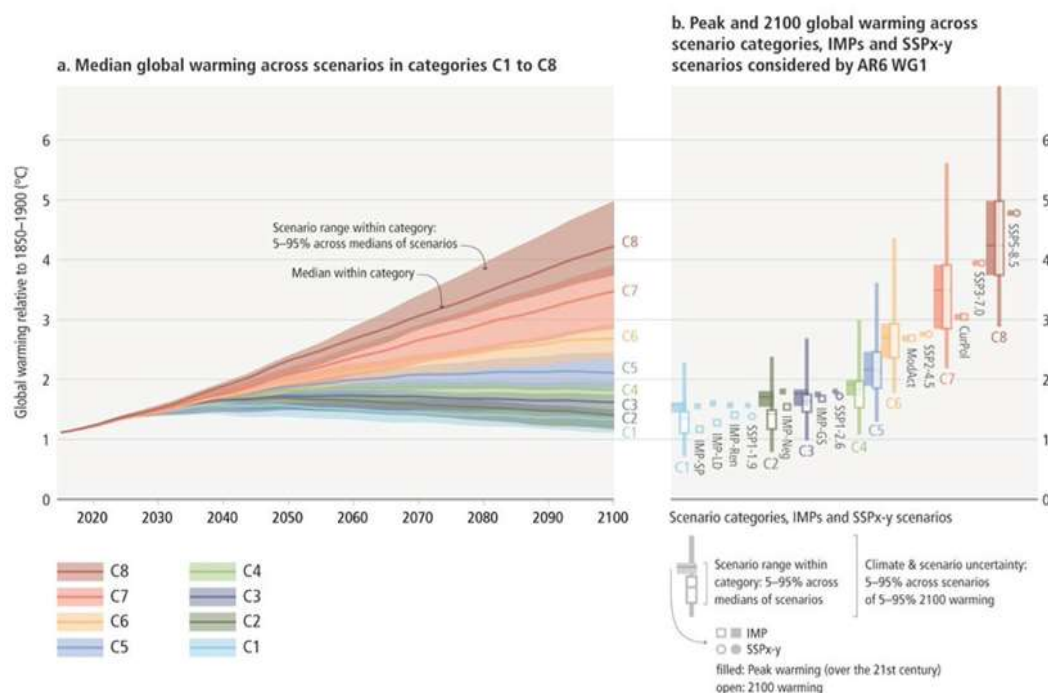
Source: IPCC, 2018: 57.

As illustrated in Figure 2, a notable rise in average global temperatures has been evident since the Industrial Revolution, closely paralleling the trajectory of anthropogenic influences on warming levels. Moreover, the observed global temperature increase of approximately 0.8-1.2 degrees underscores the looming risk of surpassing the “1.5-degree temperature threshold” (IPCC, 2018: 51) emphasized by the UN and other environmental bodies within the framework of climate security policy (Pawan, 2014: 76).

In addition to the studies focusing on GWP, the Global Warming Potential Scenarios (GWPS) program has been developed within the IPCC framework to assess the projected increases in GHGs and aerosol emissions. This program aims to analyze potential climate changes under scenarios where average GW is stabilized at 1.5 degrees Celsius or exceeds this threshold over a 100-year period. (IPCC, 1990: 10-14, UN, 2015: 2).

The main functional tools at this point are the structures containing major projections, modeling and categorizations that are also used in the “Coupled Model Intercomparison Project Phase 6 (CMIP6) Program and included in the GWPS program (IPCC, 2022a: 74-77). The Shared Socio-economic Pathways (SSPs) framework projects future scenarios based on emissions, incorporating economic and population data to examine potential outcomes (O’Neill et al., 2017: 171). Concurrently, the Illustrative Mitigation Pathways (IMPs) modeling entails the development of strategies to mitigate and prevent climate change, encompassing over 2000 scenarios. These efforts analyze the anticipated average GW increase by 2100 and the corresponding developments across 8 climate change categories (IPCC, 2022a: 298). In this context, the latest comprehensive GWPS modelling in IPCC reports are presented in Figure 3.

Figure 3: The Range of Assessed Scenarios Results in a Range of 21st Century Projected Global Warming



Source: IPCC, 2022a: 22.

In Figure 3, the most important elements to be considered in order to understand both the current impacts of climate change and the impacts that may occur in the future are the relational network between the 8 GW scenarios shaped in the range

of Category1-8 in the line graph on the left and the corresponding 5 SSPs GHGs emission scenarios and 5 IMPs emissions mitigation scenarios in the bar graph on the right.

Scenarios of average increase in GW can be listed as follows:

- Category C1 represents GW being limited to 1.5 degrees by 2100 with a probability of more than 50% or reaching or exceeding 1.5 degrees with a probability of less than 67%.
- Category C2 again includes limiting GW to 1.5 degrees by 2100 with more than 50% probability but represents exceeding 1.5 degrees with more than 67% probability. C1 and C2 are considered the most likely scenarios.
- The other categories, C3, 2°C or less; C4, 2°C or more; C5, 2.5°C; C6, 3°C; C7, 4°C or more with high probability; and C8, 4°C or more with very high probability (IPCC, 2023: 31).

The distribution of SSPs projections according to 8 categories can be listed as follows:

- “SSP1-1.9 projection is for C1 and C2 and it represents sustainability and low challenges to mitigation and adaptation.
- SSP1- 2.6 projection is for C3, C4, C5 and it is accepted as the middle of the road and medium challenges to mitigation and adaptation.
- SSP2- 4.5 projection is for C6, and it is based on regional rivalry, conflicts and high challenges to mitigation and adaptation.
- SSP3- 7.0 is for C7 and represents inequality and low challenges to mitigation but high challenges to adaptation.
- SSP5- 8.5 is for C8, and it is based on fossil-fueled development and high challenges to mitigation but low challenges to adaptation” (Hausfather, 2018: 4-12).

The IMPs modeling used to examine GWPS categories along with the SSPs projections in which emissions are examined are as follows:

- Illustrative Mitigation Pathway-Shifting Pathways (IMP-SP), Illustrative Mitigation Pathway-Renewable Energy (IMP-Ren), and Illustrative Mitigation Pathway-Low Energy Demand (IMP-LD) are associated with scenario C1.
- In IMP-SP modeling, it is aimed to ensure sustainability with the principle of reducing inequality.

- With IMP-Ren, greater use of renewable resources is emphasized.
- In the context of IMP-LD, the principle of more efficient use of resources comes to the fore.
- Illustrative Mitigation Pathway-Negative (IMP-Neg) is associated with the C2 scenario and is based on the principle of reducing the amount of net negative CO₂.
- Finally, Illustrative Mitigation Pathway-Gradual Strengthening (IMP-GS) modeling is associated with the C3 scenario and represents the principle of introducing mitigation measures more slowly but then gradually increasing them (IPCC, 2022a: 26).

In this context, it is concluded that IMPs scenarios are generally shaped according to the risk situation in the SS1-1.9 projection and that the scenarios in the C1 and C2 categories are primarily the level of climate change that is tried to be reached.

As a result of the data here and the approaches developed, the possibility that the increase in GW and climate change will worsen in a linear flow unless there is a change in the existing conjuncture comes to the fore. Furthermore, if GHGs emission rates remain unchanged until 2100, exceeding the criteria set in environmental agreements could lead to a significant rise in GW, potentially reaching as high as '3°C-4°C'. Such an escalation poses severe repercussions for the global ecosystem and biodiversity, potentially leading to extensive destruction of habitable areas (IPCC, 2022a: 1460-1469).

In light of this scenario, the contention arises that GW, driven predominantly by anthropogenic GHGs emissions, serves as a primary cause, with climate change being the consequential outcome of this warming phenomenon (IPCC, 2001: 143-154).

1.2.4. The Effects of Climate Change

Climate change has many effects on both human geography and natural life. In this context, the effects of climate change on human geography will be examined under the headings of effects on international politics, economic effects and effects on social and cultural life. The effects of climate change on natural life will be examined under

the headings of air pollution and extreme weather changes, changes in terrestrial areas (deforestation and agriculture) and changes in oceans and marine areas.

1.2.4.1. Effects of Climate Change on International Political Arena

The first important breakthroughs in the international political arena to reduce the effects of climate change began with the “1972 Stockholm Conference”. At the conference, the importance of the environment for humans was stated with the argument "Man is both creature and molder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth" and a comprehensive road map for its protection was drawn (UN, 1972: 3). The agreements made within this road map are listed as follows: World Climate Conferences, 1992 Rio Conventions, 1992 UNFCCC, 1997 Kyoto Protocol' to the UNFCCC, 2012 Rio+20: The UN Conference on Sustainable Development and lastly The Paris Agreement of 2015 (Brooklyn Law School, 2024: 1; European Commission (EC), 2024, 1-4; IPCC, 2007: 5-6).

The UN and its subsidiary bodies such as the UNEP, UNFCCC, and the WMO play a crucial role in shaping and implementing international agreements aimed at addressing climate change. Of particular note is the IPCC, established under the auspices of the UN, which has been instrumental in converting scientific findings into systematic frameworks. The IPCC not only synthesizes and utilizes scientific data but also evaluates the implementation of decisions made under these agreements, thereby playing a pioneering role in global climate governance (Carraro, 1999: 9-11). The Conference of the Parties (COP) meeting, held annually within the UN together with the IPCC, is also of serious importance in making binding decisions (Carraro, 1999: 3-10).

Despite the establishment of agreements and mechanisms for implementation, as highlighted in Rio+20, many states in the international arena have exhibited a passive stance regarding adherence to the criteria set by international agreements. This underscores the need for intensified efforts to ensure the allocation of sustainable environmental conditions as envisioned (UN, 2012: 2-3).

Furthermore, the 2015 Paris Agreement emphasized the imperative for all participating states to fulfill their obligations in addressing anthropogenic climate change impacts. This urgency stems from the recognition that mitigating the effects of

climate change is increasingly challenging, making it a dynamic and contentious issue in the international political arena (UN, 2015: 17-18).

As a result, the issue of climate change in the international arena maintains its importance and influences political moves both in the time period when it emerged and in the current political conjuncture.

1.2.4.2. Economic Effects of Climate Change

The first comprehensive analysis of the economic impacts of climate change was conducted in the “Intergovernmental Panel on Climate Change Second Assessment Report” (IPCC-SAR) on Climate Change in 1995. The report highlighted that climate change could significantly affect both economic and social dimensions. It emphasized that reducing GHGs emissions could mitigate economic damages resulting from climate change. Conversely, failure to mitigate emissions could lead to economic losses, as states might be compelled to curtail production. This dilemma poses a serious challenge for states and complicates global efforts to combat climate change (IPCC, 1995b: 401-407). As a result, a situation of ‘climate injustice’ occurs between states, and although the countries that are largely responsible for GHGs emissions are developed countries, the resulting situation negatively affects the economies of all states on a global scale (Dietz et al., 2020: 144; IPCC, 2022a: 158-160).

The risk of increased inflation and disruption of the supply-demand balance due to extreme weather events that may occur because of climate change triggering supply shocks is considered the first link in the formation of negative risks (Debelle, 2019: 3). These challenges impact various sectors including agriculture, fisheries, manufacturing, industry, transportation, and public health, potentially leading to reduced economic returns across multiple domains (IPCC, 2022b: 100).

In addition to these risks, the International Monetary Fund (IMF) has indicated that approximately \$3.5 trillion dollars annually is needed for the transition of the energy sector towards a low-carbon system. This expenditure is primarily expected from developed countries within the Group of 20 (G-20), which are significant contributors to emissions. Given that these countries collectively control around \$120 trillion, they are considered sufficiently resourced to meet this financial commitment with relative ease (IMF, 2019: 12-13).

In this context, the creation of a \$40 billion resource pool by 2025, as outlined in COP-27 under the UNFCCC, represents a significant advancement in addressing economic challenges arising from climate change proactively (UNFCCC, 2022: 1-3). However, a similar initiative was set forth in Copenhagen in 2009 with the goal of establishing a \$100 billion resource pool, but only \$16 billion in investments were secured. This historical precedent indicates the considerable difficulty in achieving such financial commitments by the targeted year of 2025 (UNFCCC, 2009: 3). If these measures are not taken, there is a risk of a loss of \$23 trillion, especially around 2050, because of losses in agriculture, health problems, sea level rise on the coasts, the impact of extreme weather events and the increase in insurance expenses for these situations (New York Times, 2021: 1).

In this context, the cost of measures against climate change is much more favorable than in cases where no measures are taken. However, when the existing policies are analyzed, it is concluded that the economic risks arising from climate change are still a serious international problem and the measures in this regard are not sufficiently implemented.

1.2.4.3. Effects of Climate Change on Society and Culture

Climate change profoundly influences human geography, an integral component of the natural environment that is intricately interconnected with various factors, notably social dynamics and cultural frameworks (UN, 1992: 13). At this point, significant social risks associated with climate change have surfaced due to the perceived ineffectiveness of mitigation and adaptation strategies. These risks encompass droughts, heat waves, cyclones, and glacier melting induced by rising temperatures in the natural environment. Within the social structure, these risks manifest as infrastructure challenges, limitations in accessing crucial natural resources, disruptions in economic activities, and resulting inequalities (Dietz and Garrelts, 2014: 269-270). At the same time, it was also possible that existing social structures would change radically, and new structures would emerge as a result of climate change (Dietz et al., 2020: 147).

The consequences that may arise as a result of the risk factors listed above can be listed as follows:

- The proliferation of epidemics that pose significant threats to public health.

- Escalating regional and global conflicts arising from diminished access to water resources during droughts.
- Declines in economic resources and productivity due to impacts on oceanic systems.
- Growing inequalities and barriers to accessing nutritional resources.
- Disruptions across various sectors including transportation, infrastructure, and tourism, adversely affecting social opportunities and undermining standards of living (IPCC, 2022b: 1060-1061).

These data underscore the multifaceted and pervasive effects of climate change on social life.

In addition to its societal impacts, climate change poses significant threats to cultures, which serve as the foundational identity of societies alongside the physical and biological elements that define specific geographies. A particularly concerning phenomenon is climate-related migration, often referred to as “climate migration,”³ wherein societies are compelled to relocate from their current habitats to more hospitable areas due to severe climatic conditions such as droughts, wildfires, or rising sea levels (Adger et al., 2013: 113-114; Dietz et al., 2020: 146).

In this context, climate migration can be understood as the forced migration of communities from their traditional regions to seek refuge in more suitable environments. This phenomenon jeopardizes the geographical landscapes that embody cultural values, both presently and in the future, if climate change mitigation efforts prove insufficient. Thus, without effective intervention, climate change presents alarming future scenarios with profound implications for climate migration (Boas et al., 2019: 902).

In the UN reports, it is pointed out that 48 million people are affected by this problem as of 2020 and 700 million people may face the risk of water scarcity in 2030, and migration may increase. According to the World Bank (WB), there is a risk of 216 million people facing migration in the European Union (EU) by 2050 (United Nations Children's Fund (UNICEF), 2024: 1-4).

³ Climate migration refers to the phenomenon in which indigenous populations are compelled to abandon their ancestral lands and relocate to other areas as a consequence of extreme climatic conditions. These extreme conditions, which can include heatwaves, prolonged droughts, flooding, tropical storms, and rising sea levels, directly trigger the migration process. Individuals who relocate due to these adverse climatic factors are referred to as climate refugees (Sayılğan and Şemşit, 2022: 17-18).

In this context, the risks posed by climate change are evident across both social and cultural dimensions. If climate change remains unresolved, societies will inevitably confront severe structural risks and threats to their human populations. Additionally, there is a significant risk of societies abandoning their cultural values as they face the necessity of migration. This could lead to the erosion of cultural identities, exacerbated by the convergence of diverse cultures forced into shared geographies due to migration patterns. Such scenarios also heighten the potential for conflicts to arise, further complicating social dynamics and stability. Thus, climate change presents critical challenges that extend beyond environmental concerns, impacting the very fabric of societies and cultures worldwide.

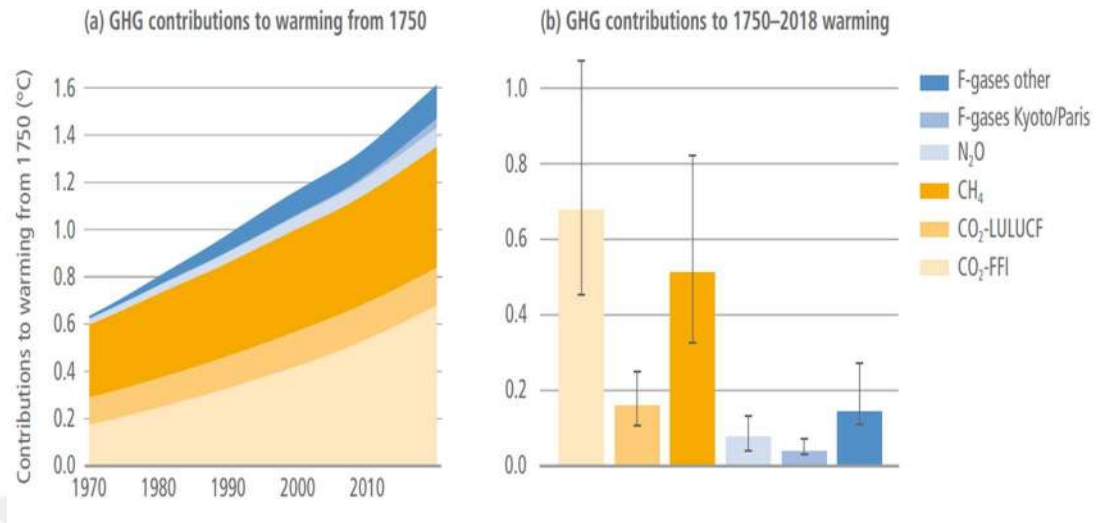
1.2.4.4. Air Pollution and Extreme Weather Changes

Climate change exerts a profound impact on the atmosphere, which is essential for sustaining life. Extreme deviations in weather patterns and intensified forest fires resulting from climate change significantly impair the ozone layer and degrade air quality (Crimmins et al., 2016: 71-73).

The root cause of these issues lies in the unchecked escalation of GHGs emissions. Figure 4 illustrates a striking trend: CO₂ levels in the atmosphere, crucially affecting the ozone layer, have surged by approximately 50% since 1750. Concurrently, CH₄ levels have risen by about 150%, emerging as primary contributors to GW. These trends underscore the critical role of reducing GHGs emissions to mitigate the adverse effects on atmospheric health and safeguard essential air quality for ecosystems and human well-being (IPCC, 2022a: 228-231; Orru et al., 2017: 505).

In addition, gases such as chlorofluorocarbons (banned in the 1980s), which are used in deodorants and refrigerators and are known as super GHGs, have further weakened the ozone layer and caused solar radiation to directly affect the earth (Ramanathan and Feng, 2009: 39). With the effect of these so-called 'Ozone-Depleting Substances' (ODSs), the thickness of the ozone layer has thinned by approximately 3% since the 1980s and there is a risk of further depletion (IPCC, 2005: 85).

Figure 4: Greenhouse Gases Contributions from 1750 to 2018



Source: IPCC, 2022a: 225.

Due to pronounced atmospheric phenomena, particularly concerning the ozone layer, a cascade of extreme weather occurrences ensues, including storms, wildfires, cyclones, floods, and heightened temperatures. The resultant devastation precipitates escalated emissions of GHGs into the atmosphere (Figure 4) (IPCC, 2022b: 47-50; NASA, 2024: 1) As a result of this situation, the planet's water cycle is damaged and extreme droughts occur due to increasing aerosol radiation and microphysical factors (Ramanathan and Feng, 2009: 41).

Another significant risk factor pertains to the potential for heightened respiratory issues among individuals, particularly those afflicted with asthma-related conditions. This is exacerbated by declining oxygen levels in the atmosphere due to elevated concentrations of CO₂ and CH₄, alongside increased airborne allergens such as pollen and spores attributable to GW (United States Environmental Protection Agency (USEPA), 2024: 1-3). Considering the fact that about 12% of human deaths worldwide are currently caused by air pollution, this situation is likely to reach much more serious dimensions in the future (Ritchie and Roser, 2021: 3-4).

1.2.4.5. Climate Change's Effects on Lands

Terrestrial environments encompass the essential material and spiritual elements required for sustaining vital activities of all living organisms. Therefore, it is imperative to develop habitable spaces on landmasses while safeguarding these areas. This dual approach ensures the fulfillment of nutritional requirements, fosters a sense of spiritual connectedness, and preserves cultural values (IPCC, 2019a: 40). Terrestrial areas are among the structures most affected by climate change. However, the amount of CO₂ contained in terrestrial areas cannot be determined clearly due to the volatility in climatic conditions, and this brings greater risks (IPCC, 2021: 42).

Moreover, the warming observed in terrestrial regions surpasses the average GW trend. Since the Industrial Revolution, global temperatures have risen by a maximum of 1.2 degrees Celsius, whereas terrestrial areas have experienced an increase of nearly 2 degrees Celsius. This discrepancy can be primarily attributed to the differential impact of GW on land. Human activities exacerbate this trend, including changes in land use practices driven by technological advancements, overproduction spurred by population growth, and disturbances to the natural equilibrium within terrestrial ecosystems caused by human actions (IPCC, 2019a: 41-42).

Primarily, the escalation of average GW, attributed to natural factors, has precipitated disruptions in the natural precipitation cycle, thereby instigating droughts and deforestation. Concurrently, heightened temperatures have contributed to numerous forest fires, disturbing the oxygen balance in natural habitats. Moreover, these extreme temperatures have accelerated the melting of glaciers, resulting in rising sea levels that inundate land areas and induce floods. Collectively, these risks underscore the principal catalysts behind the destruction unfolding within terrestrial environments as part of natural processes (IPCC, 2022b: 208-211).

The areas most affected by these risks are the terrestrial areas with arid climate, which constitute approximately 42% of the world and where around 3 billion people live. Approximately 500 million people were affected by droughts in these regions, led by Africa, as of 2015, and there is a risk that this number will increase in the future and trigger climate-based migrations (IPCC, 2019a: 50).

From a human perspective, the issue of land degradation emerges prominently. This includes concerns such as the extensive expansion of agricultural lands, deforestation for urban development, the peril of overexploiting environmental resources for economic gain, and the unsustainable use of timber and coal, perpetuating a harmful cycle of environmental degradation (IPCC, 2019a: 55).

Among these, the problem of balancing human-induced deforestation is the most prominent problem in terms of the sustainability of the natural climate. Because approximately 31% of the world is covered with forests, and through forests, the oxygen and carbon cycle remain in a sustainable balance. However, between 1990 and 2020, almost 1 billion hectares of woodland were destroyed, leaving about 4.1 billion hectares of woodland. This is a vital problem on a global scale. The human-induced reasons for the destruction of these forested areas can be listed as follows (IPCC, 2022a: 767):

- Greater soil suitability
- Agricultural activity
- Higher agricultural price
- Greater population
- Nearer to urban area
- Nearer to roads
- Rural income support
- Nearer to agriculture (IPCC, 2022a: 768)

Nevertheless, the challenge of feeding the rapidly growing global population since the 1960s remains a critically important concern. The demand for nutritional resources has surged by nearly 30% during this period, a substantial increase. To meet this demand, continuous cultivation of crops in terrestrial areas has been pursued, accompanied by widespread use of pesticide derivatives. Consequently, this practice has significantly degraded soil quality and led to irreversible damage in certain regions (IPCC, 2019a: 56).

As can be understood from the defined data sets, both natural factors and human factors play a serious role in the destruction of terrestrial areas. However, within the framework of anthropogenic effect-induced GW, which is the most important of these factors, it is concluded that the most important destruction of terrestrial areas is human factors, and if these factors are not balanced, it is a very

important risk situation that the destruction of terrestrial areas will reach serious levels.

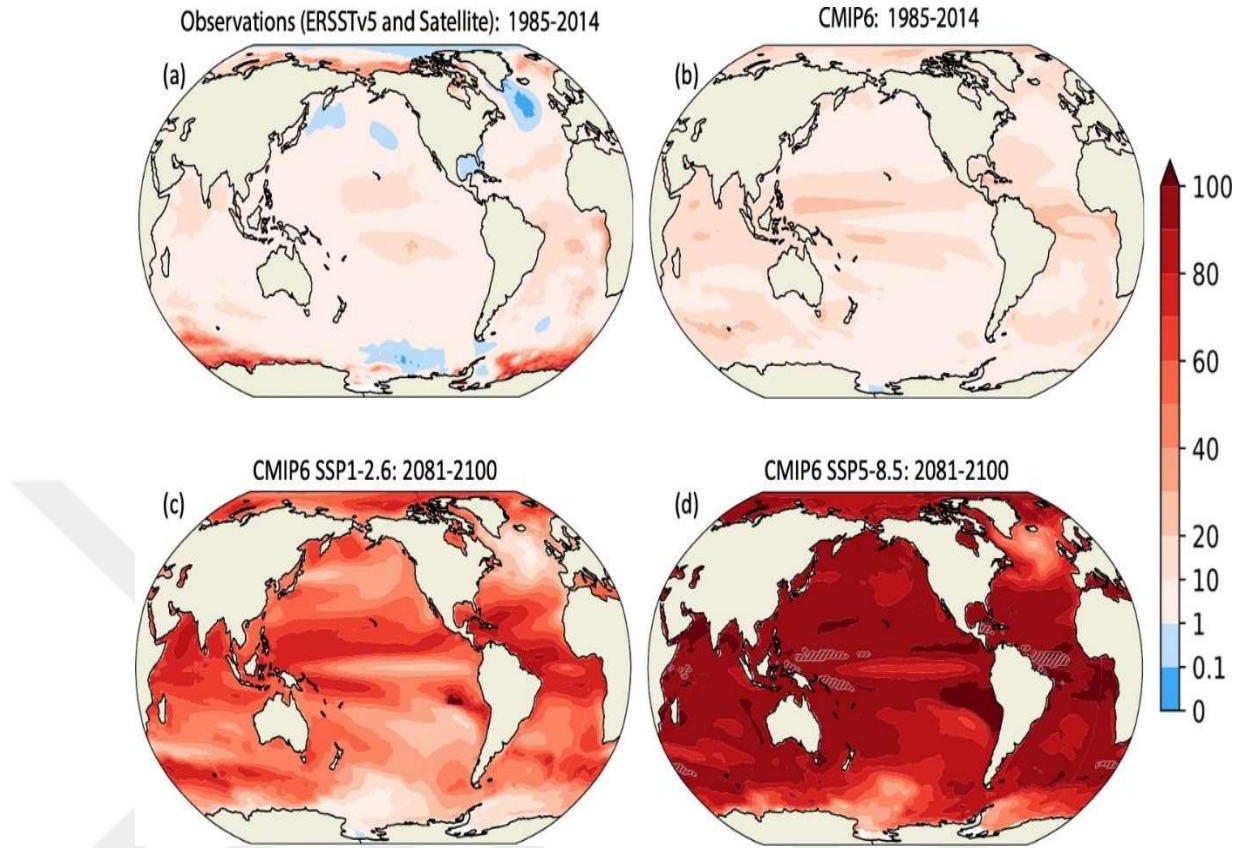
1.2.4.6. Climate Change's Effects on Oceans and Marines

Oceans cover approximately 71% of the earth and contain approximately 97% of the water in the world. However, with the increasing effects of GW in recent years, the temperature of the oceans has also increased, and imbalances have occurred in the deep-water currents in the oceans (Reid et al., 2009: 7). As a consequence of these developments, substantial melting has occurred in glaciers, particularly in regions such as the Arctic and Greenland, resulting in rising sea levels. Simultaneously, significant warming of permafrost has occurred, accompanied by increased sea acidity levels and a reduction in snowy days, notably in Arctic regions. These changes disrupt the systematic cycles of the oceans, which are pivotal for regulating the global climate balance (IPCC, 2019b: 205-209).

The oceans play a crucial global role as they contain approximately 45 times more carbon than the Earth's atmosphere and are central to the Carbon Cycle. Despite this, about 40% of the carbon released into the atmosphere due to human-induced climate change has been absorbed by the oceans. These carbon emissions can persist in the deep sea for centuries, posing significant environmental risks (IPCC, 2022a: 1268-1269). One notable consequence is the occurrence of Marine Heatwaves (MHWs), which arise from accumulated carbon affecting seabed temperatures, leading to periodic overheating of ocean waters. These heatwaves can persist over extended periods, particularly affecting regions such as the Arctic and the Equator (IPCC, 2022b: 392).

Recent measurements using CMIP6 Modeling indicate that if climate change remains unchecked, the difference in MHWs temperature values between 1995 and 2100 could increase by up to 9 times (CMIP6 SSP5 in Figure 5). This escalation poses a serious risk of significantly raising temperatures in both open oceans and enclosed seas, potentially triggering catastrophic scenarios for marine ecosystems and the organism's dependent on them (IPCC, 2022b: 393).

Figure 5: Marine Heatwaves: Observed and Projected Regional Probability Ratios from 1985–2014 and by the End of the 21st Century Under Two Emissions Scenarios



Source: IPCC, 2021: 1228.

Moreover, as GW intensifies, sea levels are steadily rising. The gradual occurrence of glacier losses in Antarctica, resembling those observed in the Arctic, underscores this risk scenario at specific locations. Additionally, there is a concern that the sea level, which increased by approximately 0.16 meters from 1902 to 2015, could potentially rise by several meters over the course of centuries. This escalation is anticipated to provoke extreme events such as towering wave heights, coastal erosion, and widespread flooding (IPCC, 2019b: 10-11).

In addition, the disruption of the balance between El Niño and La Niña, which are ocean currents, is a major risk factor. In this framework, El Niño, which represents the warm ocean currents, is expected to become more dominant than La Niña, which represents the cold ocean currents, and the resulting temperature increases are expected to be accompanied by drought and flood, tropical cyclones, and marine heatwaves (IPCC, 2019b: 35).

Ultimately, both the accumulation of carbon in the oceans and the profound impacts of oceanic changes, particularly on the Cryosphere, significantly influence human geography. These developments pose challenges for societies, especially those residing in coastal and marine environments, in managing these transformations and devising long-term strategies (IPCC, 2019b: 29).

Presently, about 3.3 billion people directly benefit from seafood as a food source, with approximately 60 million individuals living directly in coastal areas and depending on marine resources for their livelihoods. This underscores potential risks for human geography to a considerable extent. Therefore, ensuring the sustainability of oceans becomes a critical imperative for human geography, encompassing both environmental stewardship and socio-economic resilience planning (IPCC, 2022b: 385).

1.2.5. Climate Change and Polar Regions

Polar regions are a general expression used to refer to the north and south poles of the world (Cambridge University Press & Assessment. 2024a: 1). In terms of mathematical location, the Arctic or North Pole Region is located north of 66° 33'N latitude; The Antarctic or South Pole Region is located south of 66° 30' S latitude (Istanbul Technical University Foundation, 2023: 2). In terms of geopolitics “the Arctic is defined as the area within the Arctic Circle; the Antarctic includes the area within the Antarctic Convergence, including the Antarctic continent, the Southern Ocean, and the sub-Antarctic islands” (IPCC, 1997: 9). Consequently, these two regions exhibit markedly distinct physical attributes.

Moreover, the polar regions collectively cover approximately 20% of the world's land area and exhibit distinct structural characteristics from one another. The Arctic region is defined as a frozen ocean surrounded by continental landmasses, heavily influenced by the climatic conditions of its surrounding regions. In contrast, Antarctica is an isolated continent surrounded by ocean, predominantly covered by thick ice sheets with terrestrial areas in its peripheral regions (IPCC, 1997: 89).

Being situated far from the equator, both regions experience cold climate conditions characterized by sea ice, extensive ice sheets, and tundra landscapes. The presence of these glaciers highlights the significant role of the polar regions in regulating global climate stability (IPCC, 2007: 52).

In this context, an examination of the distinct characteristics of the polar regions and the impacts of climate change on each will be conducted separately on a regional basis.

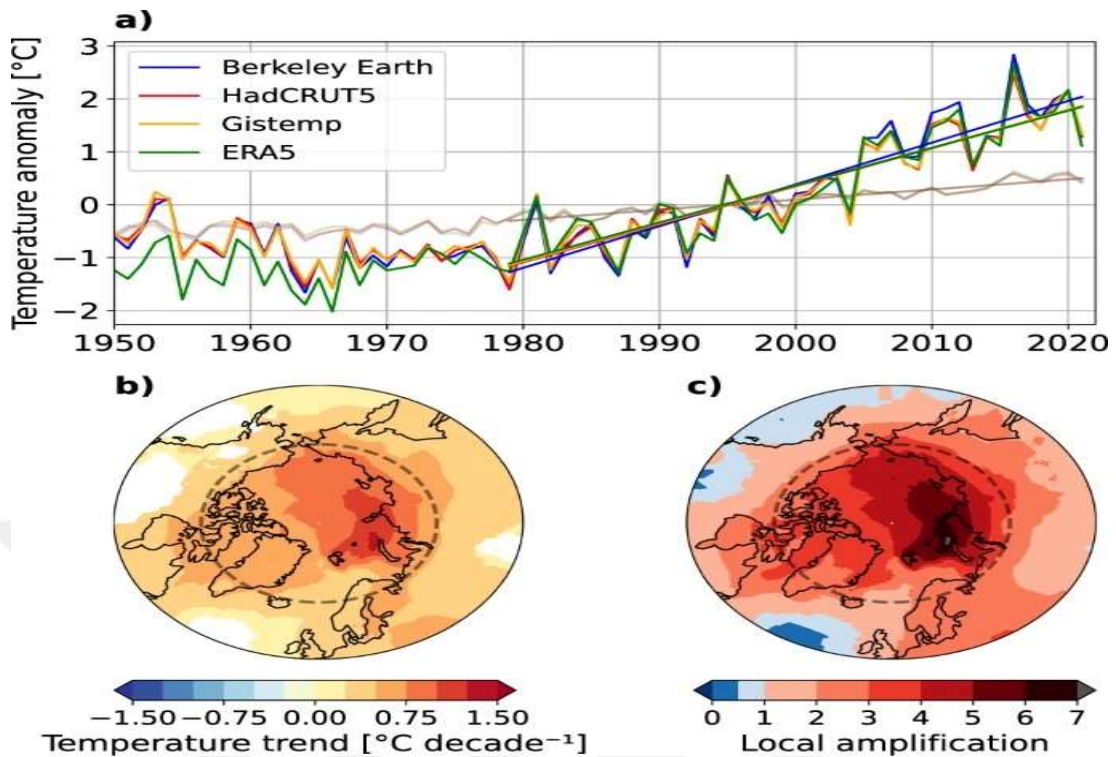
1.2.5.1. Arctic: Most Severely Affected Region

The Arctic region is a broad term commonly used to encompass the Arctic Ocean and its surrounding glaciers. Geopolitically, the Arctic Ocean includes Alaska (US) and Yukon (Canada) in the Western Arctic; Canada in the Central Arctic; Greenland in the Eastern Arctic; Siberia and Yakutia (Russia) in Eurasia; (Friesen and Mason, 2016: 176-179) and Scandinavia, comprising Finland, Sweden, Norway, and Iceland (Friesen and Mason, 2016: 223). In terms of structural features, the Arctic region was completely covered by glaciers except for a few small regions from the beginning of the Pleistocene until the Holocene (approximately 2,600,000-10000 years ago). This situation began to reverse during the Holocene (After 10000 BC) (Ostenso et al., 2024: 2-4).

Since the Industrial Revolution, the Arctic region has experienced pronounced climate divergence due to GW, exhibiting both significantly amplified positive and negative impacts compared to global climate trends. The effects of GW in this area have been particularly notable, with average temperature increases ranging from 2 to 3 degrees Celsius (IPCC, 2018: 2). This phenomenon became notably apparent post-1950, marked by a discernible positive divergence in warming trends within the Arctic, surpassing the average global temperature rise (Figure 6).

Consequently, this trend has intensified the risk of complete summer melt of Arctic Ocean glaciers, followed by their seasonal regeneration during winter months (Rantanen et al., 2022: 3-4).

Figure 6: Arctic Warming Accelerates: Nearly Four Times Faster than Global Average Since 1979



Source: Rantanen et al., 2022: 2.

Another factor affected by the melting problem is permafrost areas. At this point, the permafrost areas in the Arctic region, together with the glaciers on the water, melt by around 50 percent on average every year and then re-form. The situations that occur because of this can be summarized as follows:

- The increased water mass from extensive permafrost and glacier melting leads to drainage issues, causing substantial damage to both marine and terrestrial environments.
- Changes in species distribution and the emergence of dominant species disrupt ecological balance.
- While Arctic transit routes offer economic advantages for oil and natural gas transport, the region suffers greater economic losses from climate impacts.
- Significant economic harm affects local communities and the marine ecosystem's functionality.
- Finally, glacier loss threatens changes in crucial sea routes vital for strategic defense (IPCC, 1997: 89-90).

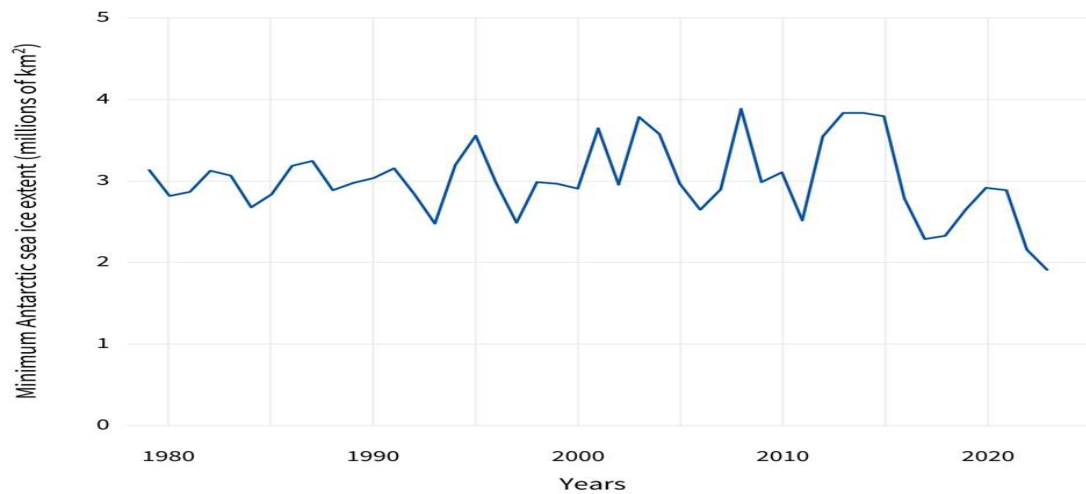
Threats to the Arctic region are particularly exacerbated by the Arctic Ocean warming four times faster than other areas. This accelerated warming prevents the Arctic Ocean, typically covered by reflective glaciers that bounce long-wavelength solar radiation during summer, from effectively fulfilling this crucial function. Consequently, the planet's average temperature rises further. Moreover, the diminished reflective capacity of the Arctic Ocean leads to warmer ocean currents from tropical regions penetrating Arctic waters, disrupting the global climate balance (Corell, 2006: 150; Rantanen et al., 2022: 3).

In the CMIP5 modelling carried out within IPPC, the average surface and ocean temperature in the Arctic is expected to hover around 2-6 degrees Celsius by 2100. This situation is expected to both increase the amount of carbon in the region and increase the ocean acidity rate and trigger heat strokes. In this context, in almost all of the CMIP5 Modelling studies, the Arctic region is expected to be the area most affected by GW in the future (IPCC, 2019b: 224-227).

1.2.5.2. Antarctic: The Shield to Global Warming

Unlike the Arctic, Antarctica is a region devoid of terrestrial connections between states. Encompassing approximately 14.2 million square kilometers, Antarctica features vast land areas, extensive glacial masses, and marine boundaries, with approximately 98% of its surface covered by thick glaciers. This makes it the coldest and most secluded region on Earth (Watt, 2024: 1). In the 21st century, Antarctica has also experienced glacial melting, albeit to a lesser extent compared to the Arctic. However, there is a gradual accumulation of CO₂ in Antarctica, posing a significant risk to its glaciers. These glaciers serve as a crucial shield by reflecting sunlight and mitigating GW effects. If these glaciers were to melt, it is highly likely that climate change would surpass the 1.5-degree threshold and escalate substantially (IPCC, 2019b: 206-208).

Figure 7: Antarctic Sea Ice Yearly Minimum



Source: Scott, 2023: 2.

The most conspicuous evidence of anomalies attributed to GW in Antarctica emerged from the analysis of glacier extent data collected in February 2023. According to Figure 7, during the period known as the annual glacier minimum, which typically corresponds to peak temperatures and minimal glacier coverage, the Antarctic glacier area decreased to 1.79 million square kilometers. This measurement represents the lowest extent recorded thus far, setting a new record in glacier recession. This unprecedented decline underscores that Antarctica, historically characterized by its stable glacier levels, is now succumbing to the effects of GW (Scott, 2023: 2).

The fact that GW has become effective in Antarctica has triggered the emergence of anomalies in other factors, just like in the Arctic. These situations can be listed as follows:

- Fluctuations in sea levels due to glacier melting, although they have not yet reached critical levels.
- Increased surface water temperatures, particularly notable in the northern parts of the Southern Ocean.
- Decreasing ocean acidity levels, with a decline of approximately 0.003–0.026 pH units per decade since 1980. Projections suggest a potential decrease of 0.1–0.6 pH units (considered lethal limits for marine organisms) by the year 2100.
- Atmospheric temperatures over West Antarctica have risen by approximately

0.2–0.3°C per decade from 1957 to 2016, whereas East Antarctica has not exhibited significant changes.

- Heat waves are becoming more frequent in the region, although their severe impacts have not yet been fully measured.
- Significant carbon accumulation and temperature increases are observed in permafrost areas. According to IPCC climate change scenarios, it is anticipated that all permafrost areas will thaw by 2100 (IPCC, 2022b: 2323-2328).

Based on these data, it is clear that the effects of climate change in Antarctica are not as intense as the Arctic. However, it is likely that climate change will affect Antarctica at the level of the Arctic as a result of the inability to keep climate change at the level of the conditions specified within the scenarios.

1.3. TERRITORIAL CLAIMS

1.3.1. The Concept of Territory

While the concept of territory represents a certain piece of land in geological terms, it is considered an area based on the sovereignty of a certain state in political terms. In an etymological context, the concept of territory came from “from Latin territorium, literally, land around a town, from terra land” (Merriam-Webster, 2024b: 1). Territory holds significant importance for states. According to the first article of the Montevideo Convention, “The state as a person of international law should possess the following qualifications: A permanent population; a defined territory; government; and capacity to enter into relations with the other states” (Montevideo Convention, 1933: 3), and it is stated that territory is one of the 4 elements necessary for a state to be characterized as an independent structure.

The ideas articulated by Aristotle, an eminent ancient Greek philosopher in his work "Politics," played a pivotal role in shaping the concept of territory. Aristotle argued that the "Polis" or City-State should be relatively small, embodying a cohesive unity of religious, political, and socio-cultural values. Moreover, he stressed the Polis's capability to engage in diplomacy with other states and, when necessary, defend itself using its military resources. Aristotle thus identified the Polis or territory as a fundamental element essential for the existence of a state (Aristotle, 1998: 245-248).

Stuart Elden asserts that in the period following Ancient Greece, the concept of territory was articulated through the term 'territorium' within Roman thought, particularly highlighted by Cicero and Seneca. This term held significant importance within Roman intellectual frameworks. Additionally, Elden characterizes territorium as a structured space where communities congregate to establish principles of justice, pursue common interests, and uphold a unified system of rules and governance (Elden, 2019: 60-68).

In the modern period, Joe Painter put forward the argument “borders, security, sovereignty, secession, invasion and occupation, all usually seen as close correlates of territory” (Painter, 2010: 1092) to emphasize the importance of the concept of territory and defined the elements that make up a state and many interstate situations within the framework of the concept of territory. evaluated. He also stated that the concept of territory has come to the fore again with the changing world systematics (Painter, 2010: 1093).

Margaret Moore defines territory as a distinct piece of land where human communities reside under the political representation of a legitimate authority. She emphasizes that this authority should not be oppressive but rather just and law-abiding, demonstrating genuine concern for individuals within society. Consequently, when territory is understood not merely geologically but in its political sense, it assumes a profound significance for states. Moore underscores its indispensable nature, shaped by historical processes and essential for the governance and stability of societies (Moore, 2015: 26-35).

1.3.2. The Formation of Territorial Claim

While the concept of territorial is defined as “of or relating to a territory” (Merriam-Webster, 2024c: 1), the concept of claim is defined as “a statement that something is true or is a fact, although other people might not” (Cambridge University Press & Assessment, 2024b: 1-2). In this context, when the two concepts come together, they can be defined as a right claim that is accepted for a certain piece of land or put forward with the aim of making it accepted.

Paul R. Hensel and Sara M. Mitchell define the concept of "territorial claim" as a primary catalyst for numerous conflicts throughout history. They argue that states have often utilized their political and military might to assert rights over unclaimed

territories or to seize territories belonging to other states. This dynamic, they contend, has persisted into contemporary times, where territorial disputes remain a significant source of international tension and conflict (Hensel and Mitchell, 2017: 127-135).

Bryan A Frederick, on the other hand, states that territorial claims to a region can be related to many issues. These issues can be summarized as follows; having the same origin, language and religion unity, having an interest in that region, being a common conflict area because of the ambitions of other states on that region or just an effort to seize it etc. (Frederick et al., 2017: 100-102).

Alexander B. Murphy delineates two significant elements in the formation of territorial claims:

- Firstly, he posits that individuals are inherently driven by an instinctual urge to occupy unclaimed territory or land belonging to others.
- Secondly, Murphy argues that any region or piece of land plays a crucial role in the establishment of the 'social contract' that forms the foundation of a state. Therefore, capturing territory is deemed necessary and inevitable for the state's existence and operation (Murphy, 1990: 532-535).

Murphy's framework suggests a dual perspective: one highlighting human tendency toward self-interest and territorial expansion, and the other emphasizing the essentiality of territorial acquisition for the coherence and functioning of states under the social contract theory.

In addition, in the historical perspective, there has been a significant increase in territorial claims, especially after the 1900s, and this situation has become much more complex, especially after the World War II (WWII) (Hensel and Mitchell, 2017: 129). The reason of that is the emergence of the nation-state concept, catalyzed by nationalist movements spurred by the French Revolution, marked a transformative shift in the international political landscape, establishing itself as the prevailing paradigm. The nation-state structure is characterized by a state comprising citizens who share a collective sense of nationality, identity, language, and culture, typically based on the 'Jus Soli Principle', where citizenship is determined by place of birth (Feinstein, 2024: 1-3).

At this point, because of the nationalist elements triggered by the values attributed to the nation-state, there was a significant increase in territorial claims after WWII, and especially in the process known as Decolonization, many nations struggled to obtain their own separate territorial integrity and were successful. Thus, most of the

lands in the world have become structures owned by nation-states. The contention over territorial claims ranks among the most contentious issues in the international arena and holds significant importance for states. This includes disputes over regional rights and conflicting interests that emerge in polar regions (Jansen and Osterhammel, 2017: 171-180).

In this context, the governance frameworks established to address these demands are crucially shaped by the complexities of polar governance. These frameworks evolve based on the interplay of various national and international interests, environmental concerns, resource management, and indigenous rights, among other factors. The second part of this study explores how these dynamics influence and shape the governance structures implemented in polar regions.

1.4. METHODOLOGY

The study's methodological framework is grounded in the Case Study method within the realm of Qualitative Research. Qualitative research, as defined by Creswell, diverges from quantitative methods by focusing on understanding events and perceptions rather than numerical measurements. In this approach, the researcher engages with primary sources such as observational groups, study participants, or documentary data to construct the research design. Methods commonly employed include open-ended interviews, participant observation, note-taking during interviews, and archival document analysis. Data gathered through these methods are analyzed using approaches such as Biography, Phenomenology, Grounded Theory, Ethnography, and Case Study. These analytical methods facilitate the interpretation of findings within the broader context of the study's objectives and contribute to generating meaningful insights (Valencia, 2020: 88-92).

According to Gary King and Robert Keohane, the qualitative approach requires a deeper, detailed and systematic perspective rather than data overload in conceptualizing the variables identified to construct a study and explaining the systematic properties of these variables. At the same time, to apply this method, descriptive inferences are often made based on observed actions (King et al., 2021: 60).

Patti Lather, conversely, argues that qualitative research methods do not rely on rigorously defined variables or comprehensive causal frameworks akin to "hard

evidence." Instead, such methods derive new insights experimentally through observations and examinations, with researchers actively engaged throughout the entire process (Denzin and Lincoln, 2011: 29).

Robert E. Stake posits that the case study method, a prominent qualitative research approach, involves a holistic interpretation of specific approaches framed within the context under investigation. This methodology adopts an inductive approach where insights are derived from detailed analysis and subsequently synthesized into cohesive narratives (Stake, 1994: 32). Also commonly utilized techniques include interviews, observations, and document analysis to gather pertinent data (Denzin and Lincoln, 2011: 51).

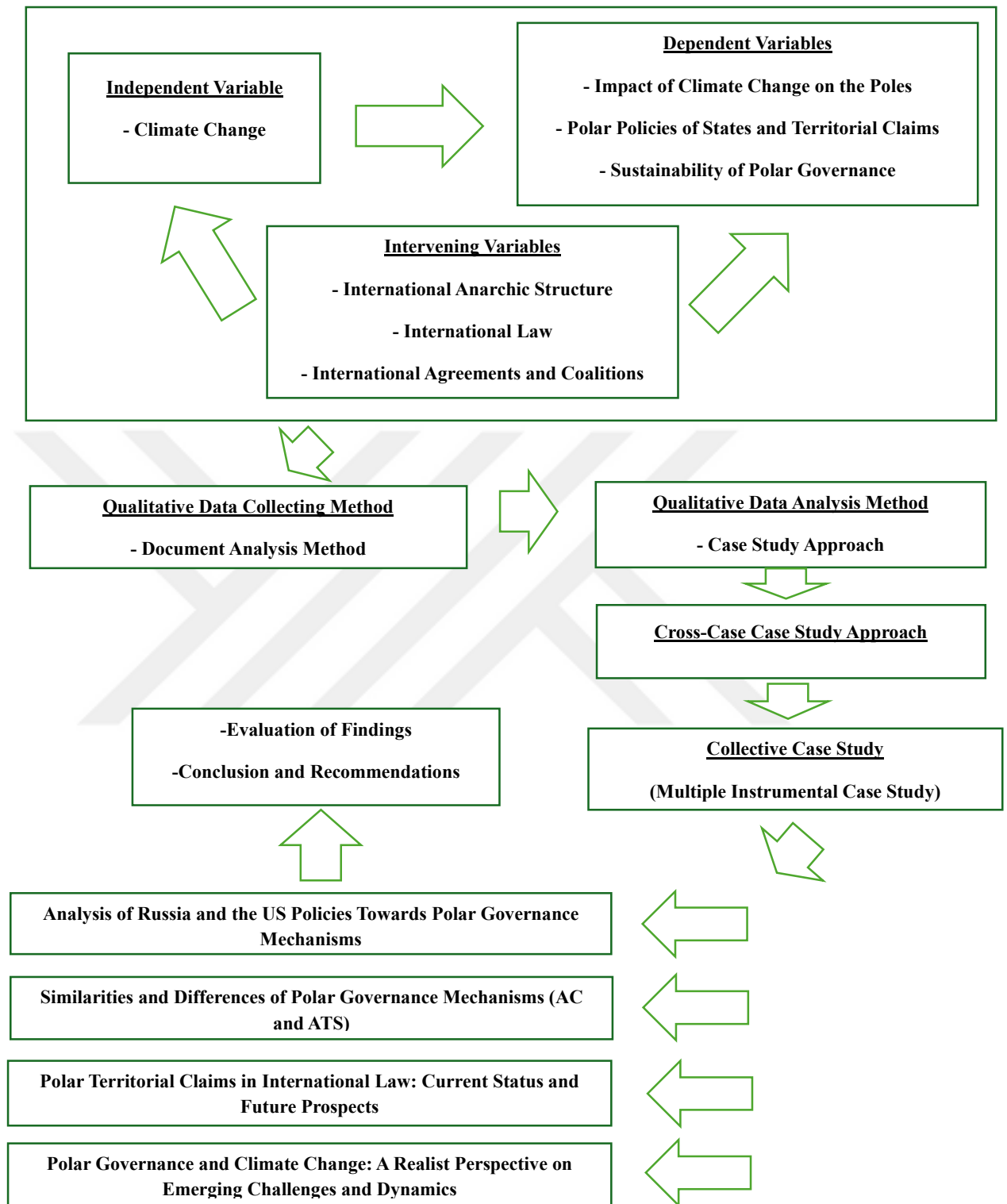
The approach employed in this study centers on evaluating data obtained through document analysis or literature review, utilizing a case study framework during the analysis phase. Specifically, the Cross-Case method was employed, facilitating the identification of semantic relationships across multiple cases rather than focusing solely on a single instance.

Stake categorizes the Cross-Case Study method into three distinct approaches. Firstly, the Intrinsic Case Study approach focuses primarily on a central issue and its influencing factors, where the main issue holds greater significance compared to peripheral elements. Secondly, the Instrumental Case Study method revolves around specific sub-elements shaped around a particular case study. Unlike the intrinsic approach, here, these sub-elements that influence the main case study are deemed equally important. Lastly, the Collective Case Study method expands on the instrumental approach by examining multiple cases or samples (Green et al., 2012: 125-126).

The overarching aim of the Cross-Case Study method is to facilitate generalization and problem-solving analysis from specific instances to broader contexts. By evaluating similarities and differences across multiple cases or samples, researchers can draw descriptive inferences and derive comprehensive insights that encompass key aspects of each subject involved (Stake, 1994: 34-35).

Lastly, the study was concluded by applying the Collective Case Study shaped within the framework of the Cross-Case method to independent, dependent and intervening variables. In this context, the methodological approach and progress steps representing the research design were carried out as indicated in the figure below.

Figure 8: The Methodological Steps of the Study



Source: Developed by the Author.

As depicted in Figure 8, the study aimed to assess the impacts of the independent variable on the dependent variable, as well as the intervening variables influencing these relationships at specific junctures. Data essential for conducting the situational analysis were gathered through the examination of document sets including international studies and agreements conducted under UN auspices, treaties within the ATS and ATCM Reports, studies undertaken within the AC, international legal precedents, state practices in the global arena, as well as doctrines and judicial rulings from international courts. Subsequently, employing the Collective Case Study method, the study culminated in a comparative analysis across four distinct cases and associated sub-elements or scenarios.



CHAPTER TWO

GOVERNANCE MECHANISMS AND TERRITORIAL CLAIMS IN POLAR REGIONS

In this section, the historical formation process of territorial claims to the Arctic and Antarctic regions will be discussed separately on a regional basis. At the same time, the formation process and functioning mechanism of the governance mechanisms formed in the Arctic and Antarctic regions because of territorial claims will be handled.

2.1. THE SO-CALLED PEACE-KEEPER: THE ARCTIC COUNCIL

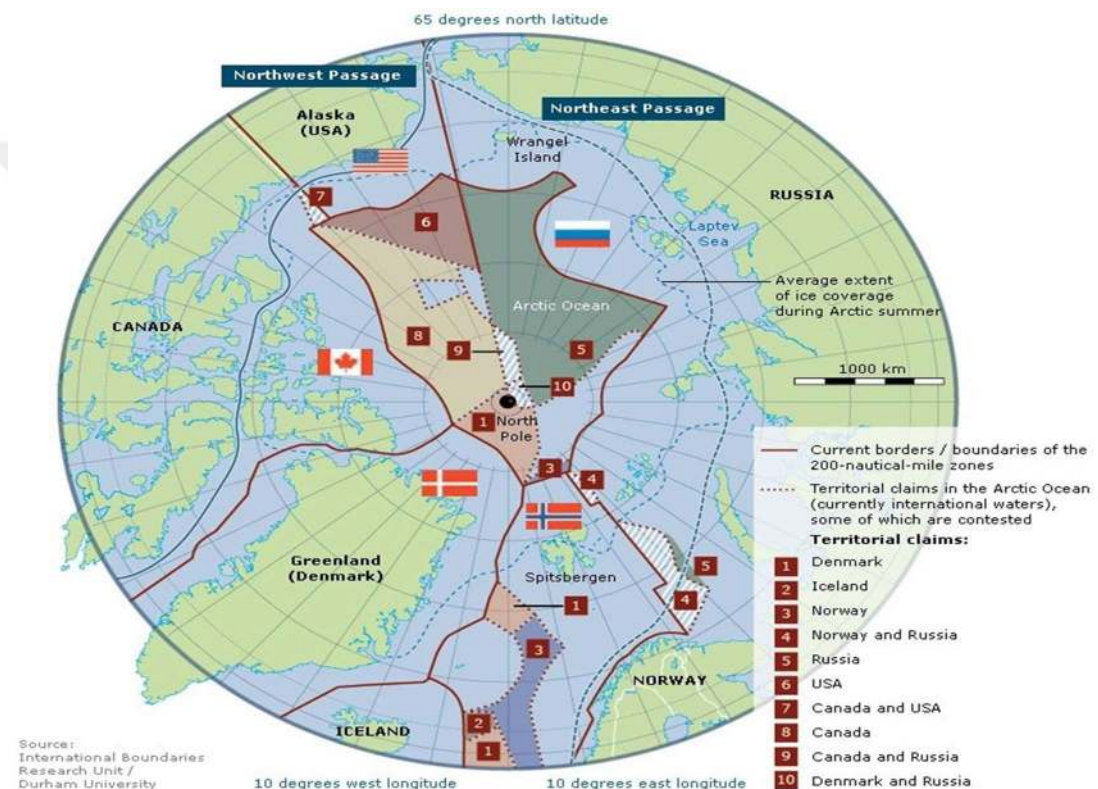
The Arctic region, commonly referred to as the Arctic Circle, designates the northernmost extent of the Earth, situated around the geographic North Pole (Ostenso et al., 2024b: 1-4). Within the Arctic Circle lies the Arctic Ocean, encompassing territories such as Alaska (USA) and Yukon (Canada) in the Western Arctic, Canada in the Central Arctic, and Greenland in the Eastern Arctic. The region is bordered by Siberia and Yakutia (Russia) in Eurasia (Friesen and Mason, 2016: 176-177), and by Finland, Sweden, Norway, and Iceland in Scandinavia (Friesen and Mason, 2016: 223).

The Arctic region, being geographically isolated and largely landlocked, has seen human activities intertwined with the fluctuations of ice ages. Russian archaeologist Vladimir Pitul'ko's research has uncovered human artifacts dating as far back as 30,000-25,000 BC, identified through radiocarbon dating of tools and equipment found within the Arctic Region (McGhee, 2006: 14-15). However, the communities living in the Arctic migrated towards the southern parts due to the gradual warming of the climate in the period approaching the Holocene Interglacial Age (10000 BC) (Friesen and Mason, 2016: 224).

The initial exploration of the Arctic Region can be attributed to Ancient Greek explorers, who were particularly influenced by the mythological concept of the Hyperboreans in Ancient Greek mythology. Pytheas, an astronomer and geographer, led one of the earliest Arctic explorations, mapping the region up to what was known as the Thule Region. This area was identified and named as the Land of the Hyperboreans based on his discoveries (McGhee, 2006: 22-25).

Simultaneously, Pytheas and other Greek philosophers contributed to the development of the concept of the Arctic as we understand it today. The term Arctic originates from the Greek word ‘Arktos’, meaning ‘bear’ and referring to the constellation Ursa Major, also known as the Great Bear. This association with the northern constellation later evolved into the modern concept of the Arctic and became the current name for the region (Tsiouvalas, 2022: 2).

Figure 9: Territorial Claims for the Arctic



Source: Walsh, 2011: 1.

Following the initial exploration and discovery of the Arctic region, countries such as Canada, Russia, the Kingdom of Denmark (through Greenland), the USA, Finland, Iceland, Norway, and Sweden have asserted claims over specific sectors within the region, as depicted in Figure 9, based on principles akin to Senator Dustin Poirier's sector theory. However, given that these states have direct territorial borders in the Arctic, significant disputes have arisen regarding jurisdiction and sovereignty (AC, 2024b: 1; Elferink and Rothwell, 2001: 252).

In order to address territorial disputes among Arctic states, the Rovaniemi Process commenced in the late 1980s and culminated in the signing of the Rovaniemi Declaration in 1991, led by Finland. This declaration led to the establishment of the Arctic Environmental Protection Strategy (AEPS), the International Arctic Science Committee (IASC), and the Arctic Monitoring and Assessment Programme (AMAP), marking a period of consensus building in the Arctic (Nevitt and Percival, 2018: 1663-1664).

Subsequently, the AC was established on September 19, 1996, through the OD, with the participation of the 8 Arctic states. The primary objective of the AC is to mitigate tensions between states and maintain open lines of dialogue. Additionally, it aims to oversee cooperative actions in the Arctic region. However, it's important to note that the AC lacks binding and punitive authority over its member states (AC, 1996: 1-3).

The AC has 6 different Working Groups apart from 8 different member states. These are “Arctic Contaminants Action Program (ACAP), AMAP, Conservation of Arctic Flora and Fauna (CAFF), Emergency Prevention, Preparedness and Response (EPPR), Protection of the Arctic Marine Environment (PAME), Sustainable Development Working Group (SDWG)” (AC, 2024c: 1)

In addition, 6 permanent participants and 38 observer members constitute the AC.

In operational terms, the AC operates under a rotational Chairmanship system, with each of the 8 Arctic states assuming the role for a two-year term. Each state appoints a Senior Arctic Official (SAO) who collaborates under the AC Secretariat, the Council's governing body. SAOs, along with Permanent Participants and Working Groups, convene biannually to conduct essential political activities from a regional perspective. Despite its significant role in Arctic governance, as outlined in the OD, the AC functions primarily as a forum reliant on financial contributions from its member states. Notably, the Council lacks authority to impose restrictions on military or security-related activities in the region (AC, 2024d: 4).

2.2. TERRITORIAL CLAIMS TO THE ARCTIC

2.2.1. The First Claimer: Canada

Canada's territorial claim over the Arctic region traces its origins back to a concession granted by Charles II in 1670 to the Hudson's Bay Company (HBC). Initially, Charles II's decision added an expansive area, roughly half of present-day Canadian territory, to the HBC Charter. Subsequently, in 1821, another decision extended the HBC Charter to include what is now the Northwest Territories and Nunavut south of the Arctic Coast. These historical decisions laid the foundation for Canada's longstanding territorial claims in the Arctic region (Morrison, 2022: 2).

The Government of Canada's first formal assertion of sovereignty as a state was made at the Court at Osborne House, Isle of Wight, on the 31st day of July 1880, with the following resolution presented to the Crown:

“From and after the first day of September, 1880, all British Territories and Possessions in North America, not already included within the Dominion of Canada, and all Islands adjacent to any of such Territories or Possessions, shall (with the exception of the Colony of Newfoundland and its dependencies) become and be annexed to and form part of the said Dominion of Canada ; and become and be subject to the laws for the time being in force in the said Dominion, in so far as such laws may be applicable thereto” (The Government of Canada, 2022: 2).

With the decision, Canada has claimed as its own everything from west of Davis Strait and longitude 60°, east of the meridian of 141° and north of the Canadian mainland up to the Pole (Miller, 1925: 50).

The most important argument used by Canada to legitimize its land claim is The Sector Principle (as mentioned before), which supports the court's approach in the text of the decision. The Sector Principle, initially proposed by George Dawson, incorporates the concept that meridian lines can define territorial claims in the imperfectly explored ocean. This principle was influenced by the Alaska Purchase and border determination between the USA and Russia and became a cornerstone of Canada's Arctic policy. Dawson argued that Canada holds sovereignty over both discovered and undiscovered areas between Alaska and Yukon, asserting that the 141st West meridian delineates Canada's western boundary as proposed by the Admiralty in 1879 (Sharp, 2016: 1; Cavell, 2019: 4).

Later, with the breakthrough of Canadian Senator Pascal Poirier in 1907, the sector theory was transformed into the argument that “in polar regions a State may claim land (and maritime) territory lying between two specified lines of longitude up to the pole concerned, without the necessity of fulfilling the formal requirements of international law relating to the acquisition of territory” (Elferink and Rothwell, 2001: 121). In this way, a physical argument was provided for the legitimization of Canada's action.

Following the inception of the sector theory, Canadian Captain J.E. Bernier, backed by government support, organized expeditions to the Arctic region starting in 1904. Through these expeditions, Bernier controversially asserted sovereignty over several islands, notably Sverdrup Island and Ellesmere Island (Cavell, 2014: 297-299).

After that one significant event was the placement of a plaque by Bernier on Melville Island in 1909. This plaque declared Canada's sovereignty over the Arctic Archipelago extending from the mainland to the North Pole. This act holds distinct significance in terms of the initial application of the sector theory principles. It symbolized Canada's assertion of territorial claims based on longitudinal sectors in the Arctic, marking a pivotal moment in Canadian Arctic policy and sovereignty (Morrison, 2022: 4).

Following Bernier, Vilhjalmur Stefansson assumed leadership of the Canadian Arctic Expedition (CAE) Program from 1913 to 1918, during which he charted all major islands in the region. However, he diverged from Bernier's sector theory, advocating instead for Canadian establishment of a base on Wrangel Island irrespective of meridian-based boundaries. Despite Stefansson's proposal, this initiative was ultimately not realized (Cavell, 2019: 10-11).

Another significant measure undertaken by Canada to assert its sovereignty in the Arctic involved the establishment of police forces on various islands. The North-West Mounted Police (NWMP) initially established a presence on Herschel Island in 1903, where they monitored the activities of American whalers operating in the Western Arctic (Morrison, 2022: 5).

Canada's primary law enforcement body in the region is the Royal Canadian Mounted Police (RCMP), which was integrated into the Northwest Territories Council through the Northwest Territories Amendment Act of 1905. This unit held sole administrative authority over the Northwest Territories until the 1920s. Subsequently, additional RCMP outposts were established at Pond Inlet and Craig Harbour (1922),

Pangnirtung (1923), Dundas Harbour (1924), the Bache Peninsula (1926), and Lake Harbour (1927), thereby reinforcing Canada's policing capabilities throughout the region (Shackleton, 2012: 6).

Canada's advances in the Arctic region were affected and slowed down by the conflicts during WWII. In this process, especially the USA and Canada often clashed over Arctic sovereignty (Cavell, 2019: 15-16). However, Canada has successfully defended its sovereignty in the region by deploying approximately 5000 rangers in the region and settling Inuit on Ellesmere and Cornwallis Islands in order not to lose the territories it gained by using the sector theory in the past (Morrison, 2022: 6).

Canada faces significant challenges in asserting its authority in the Arctic region, notably concerning the Hans Island dispute with Denmark and the Northwest Passage issue with the USA. Canada has asserted sovereignty over Hans Island, citing historical connections such as Inuit presence and regular expeditions to the island. However, substantiating these claims has proven challenging, particularly in light of competing assertions that the island was discovered by the USA earlier in history, which has gained prominence in the ongoing debate (Watson, 2008: 320-321).

Secondly, Canada asserts sovereignty over the Northwest Passage, which connects the Atlantic and Pacific Oceans through Canadian territory. However, the USA argues that Canada lacks the legal right to claim jurisdiction over this waterway under international law (Watson, 2008: 321-322).

The territorial dispute between the two states was resolved with the Agreement on Arctic Cooperation signed on 11 January 1988. The decisions taken in the context of this agreement can be summarized as follows:

- “The Parties will undertake that navigation and resource development activities in the Arctic will not harm the region and its people.
- The Parties will co-operate in the advancement of icebreakers in their Arctic borders.
- The last and most important article is that the USA will be subject to the approval of the Canadian Government while conducting activities in the areas claimed by Canada” (Elferink and Rothwell, 2001: 76-81).

As a result of this agreement, Canada has significantly strengthened its territorial authority in the Arctic.

Finally, through this authority in the Arctic, Canada became a state party to the OD, signed in 1996, which allocated the security of the Arctic. Today, Canada's Arctic

territory spans approximately 40% of the country's land area, with approximately 150,000 Canadian citizens residing within this region (AC, 2024d: 1-3).

2.2.2. The Path-Follower: Russia

The sector theory proposed by Canada regarding the Arctic has been a significant point of contention, particularly with the USSR. On April 15, 1926, the Central Executive Committee of the USSR issued a decree asserting its claim over previously discovered and potentially discoverable territories within a sector defined by the northern coastlines of European and Asian Russia and bounded by longitudes 35 East and 170 West. This decree effectively delineated the USSR's territorial claims in the Arctic region (Lakhtine, 1930: 709; McKitterick, 1939: 89; Timtchenko, 1997: 30).

With this move, the USSR argued that it had sovereignty over all the islands and areas in this sector and that no physical or scientific work could be carried out here by other states. In addition, in order to avoid conflict with the USA, it was also promised that the borders of Alaska given to the USA by the 1867 Boundary Treaty would be respected. (Timtchenko, 1997: 31).

The foremost advocate for legitimizing the Soviet stance on the Arctic region was V.L. Lakhtine. In his seminal work "Rights Over the Arctic Region," published in 1928, Lakhtine critiqued imperialism through a Marxist-Leninist lens. He articulated a theoretical framework, rooted in sector theory, to delineate territorial boundaries for both Soviet and other states. Key ideas from his analysis include (Timtchenko, 1997: 30):

- Firstly, Lakhtine stipulates that all territories and islands within a designated sector, regardless of their prior discovery or occupation by another state, are to be relinquished to the state holding sovereignty over that sector.
- Secondly, he proposes an equitable division of undrafted ice, whereby it is apportioned equally between land territories, thereby becoming integral to the sovereign territory of the respective state.
- Lastly, Lakhtine reinforces this egalitarian perspective, rooted in Marxist principles, by advocating that the airspace above a sector should also be deemed the rightful domain of the state that holds jurisdiction over that sector (Lakhtine, 1930: 704-717).

Among the ideas listed here, Lakhtine's ideas, especially those on discovered and undiscovered lands, were accepted as reasonable and applicable by other statesmen.

In addition to Lakhtine's propositions, Professor V. N. Durdenevskiy asserted in 1950 that a state holds sovereignty over its territorial waters and coastal areas along its borders (Olenicoff, 1972: 37). He justified this stance by applying sector theory to the Arctic states, arguing that each state surrounding the Arctic possesses its distinct sector. Durdenevskiy further emphasized that all Arctic nations acknowledge the validity and application of sector theory, highlighting its enduring relevance in subsequent periods (Timtchenko, 1997: 31-32).

Canada and Denmark have asserted their rights over the Lomonosov Ridge and Gakkel Ridge regions, areas also claimed by Russia through submissions to the Commission on the Limits of the Continental Shelf (CLCS) under the sector theory framework. Additionally, Canada has contested Russia's sovereignty over the Alpha Rise (Dal, 2023: 89). However, due to the absence of a fully effective and universally binding international legal framework regarding the legal status of CLCS determinations under the United Nations Convention on the Law of the Sea (UNCLOS), the status of these counterclaims remains unresolved (The Polar Connection, 2021: 2-3).

Another significant challenge confronting Russia in the region involves disputes with the USA over the sovereignty of the Northern Sea Route (NSR), also known as the Northeast Passage (NP), which connects Europe and Asia through Russian territorial waters. This route is crucial as it falls entirely under Russian control and serves as a strategically important passage during various international crises (Elferink and Rothwell, 2001: 274-275). However, a cooperative approach initiated in Soviet foreign policy, beginning with Gorbachev's Murmansk Speech in 1987, led to the establishment of the 1991 Regulations for Navigation on the Seaways of the NSR. Consequently, based on Russia's federal laws, access to the NSR has been opened to all international states, except for potential new routes resulting from glacial melting. This cooperative framework effectively suspended and defused the crisis between Russia and the USA (Elferink and Rothwell, 2001: 286-289).

Today, the Barents, Kara, Laptev, East Siberian and Chukchi regions, known as The Arctic Zone of the Russian Federation (AZRF), which are the northern tip of the European and Asian regions of the Russian Federation and located on the shores of the seas in the Arctic Ocean, are regions shaped within the framework of sector

theory (Arctic Russia, 2024: 2). At the same time, approximately 53% of the coastline of the Arctic Ocean belongs to Russia and about 2.5 million Russian citizens live in the areas within the specified sector. Russia carries out both feasibility studies and resource exploration, dredging and extraction activities in the region. It is also the most active and sovereign state in the region (AC, 2024f: 3).

2.2.3. The Non-Actor Actor: Denmark

Denmark's Arctic presence differs from other Arctic states primarily due to its sovereignty over Greenland. Additionally, the Faroe Islands, another territory under Danish ownership, contribute to its Arctic interests. However, Greenland stands out as the pivotal region shaping Denmark's Arctic policies (Jacobsen, 2016a: 2).

Greenland was a Danish colony until 1953, subsequently becoming an integrated part of Denmark (Kingdom of Denmark, 2024: 1). With an approximate area of 800,000 square kilometers and a population of around 50,000 inhabitants, it lies south of the Arctic Circle, extending up to 60 degrees North latitude (Miller, 1925: 48). Economically, Greenland contributes minimally to Denmark. However, due to its strategic location, particularly underscored during WWII when Germany occupied Denmark, the Danish government authorized the USA to utilize Greenland's strategic positioning (Rahbek, 2011: 9).

Despite Denmark's avoidance of sector theory and other strategic approaches in the Arctic, it has encountered disputes with several states. These disagreements can be categorized as follows:

- Lincoln Sea: Between Canada and Denmark
- Hans Island: Between Canada and Denmark
- Jan Mayen: Involving Denmark, Iceland, and Norway
- Lomonosov and Gakkel Ridges: Involving Canada, Denmark, and Russia (Dal, 2023: 90).

Among these disputes, those concerning the Lincoln Sea and the Lomonosov and Gakkel Ridges remain unresolved to this day.

In addition, the settlement of the dispute between Norway and Denmark over the sovereignty of East Greenland in favor of Denmark by the International Court of Justice (ICJ) in 1933 was a turning point in terms of consolidating Denmark's

legitimate sovereignty in Greenland (McKitterick, 1939: 94; Sørensen, 2007: 53-54). Denmark has made many strategic moves to resolve this dispute and maintain its presence in the Arctic. These moves include keeping regional relations with the USA active and vibrant, preventing foreign states from interfering in Greenland's internal affairs, supporting Greenland economically despite its lack of benefits, and acting in parallel with organizations such as the International Maritime Organization (IMO) and the AC (Rahbek, 2011: 10-11).

Denmark has further solidified its Arctic strategy by endorsing the Ilulissat Declaration, which it hosted in Greenland on 28 May 2008. This declaration involves Denmark, Canada, Norway, Russia, and the US—nations with Arctic Ocean coastlines—submitting claims to the CLCS under Article 76 of the UNCLOS. If ratified within a decade, this declaration would potentially enable these states to expand their continental shelves by up to 200 nautical miles (Kingdom of Denmark, 2011: 14).

In this context, the Kingdom of Denmark achieved a significant milestone by submitting an application to the CLCS on 15 December 2014. This application seeks to extend its continental shelf and facilitate exploration and exploitation activities across an area spanning approximately 895,000 square kilometers, extending from the northern coast of Greenland to Russia's Exclusive Economic Zone (EEZ). This application process remains ongoing (Arctic Portal, 2014: 1).

In 2019, USA President Donald Trump's proposal to purchase Greenland became a pivotal issue, impacting both Denmark's Arctic strategy and the strategic significance of Greenland itself. This proposal elicited strong reactions from Danish and Greenlandic authorities, who maintain ally status with the USA in Arctic affairs. In response, Greenland's premier, Kim Kielsen, unequivocally stated, “Greenland is not for sale” (Leuprecht and Causey, 2022: 109).

Against this backdrop, the Kingdom of Denmark continues to uphold its Arctic presence through its ownership of Greenland and the Faroe Islands.

2.2.4. The Investor Actor: The United States of America

The USA's Arctic presence differs from that of all other actors primarily through land purchases or investments from Russia. In this context, Alaska was sold to the USA by Russia within the boundaries defined by the USA-Russia Convention

Line of 1867, originally signed on June 30, 1867, and revised on October 1, 1965 (US Department of State, 1965: 2). The purchase process was shaped by negotiations between US Secretary of State William Seward and Russian Minister Edouard de Stoeckl, and \$7.2 million was paid for Alaska (US Department of State, 1867: 1-2).

Under the agreement, a boundary line was established running north from the Bering Strait, compliant with international law and respecting a 200-mile continental shelf. Additionally, four specific areas within this continental shelf were designated to delineate boundaries: one in the Arctic Ocean and three in the Bering Strait. Despite Russia's acknowledgment of these designated regions as boundary lines, formal agreement signing did not occur. Nevertheless, both nations exercise caution to avoid crossing each other's delineated borders (Østhagen and Schofield, 2021a: 5).

The acquisition of Alaska initially sparked domestic political reactions in the USA. However, the discovery of gold during the Klondike Gold Rush starting in the 1880s, followed by the Nome Gold Rush in Fairbanks in 1898, significantly elevated Alaska's importance. Within this context, the region's population surged from approximately 30,000 to over 60,000 by the early 1900s (Nilsson, 2018: 97).

During the period from 1895 to 1905, it is estimated that the total value of gold produced in Alaska amounted to around \$100 million. This economic boom made the region highly attractive, leading to a gradual increase in political, economic, cultural, and social activities, as well as a continuous influx of settlers (Clark, 1930: 105). In addition to gold mining, Alaska's economy thrives on seafood harvesting, oil production, and tourism, which are pivotal economic resources and activities in the region (Knapp, 2012: 13).

Apart from economic considerations, the primary factor shaping the USA's policies in the Arctic region and Alaska has been international political dynamics. Particularly during WWII and the CW, the USA focused on Arctic territories such as Alaska and Canada to exert control over the Arctic Ocean. Key strategic installations like the Thule Station in Greenland and Camp Century were established to counter Soviet submarine activities in the region (Clark, 1930: 105-106). Additionally, the Panama-Hawaii-Alaska Defense Triangle was authorized by the USA Congress in 1939, leading to the construction of naval bases in Sitka, Dutch Harbor, and Kodiak (United States National Park Service, 2020: 1).

These strategic initiatives and bases played a crucial role, notably during WWII when Japan occupied Attu and Kiska, two of the Aleutian Islands in Alaska. This occupation prompted Japan to engage in conflict with the USA and Allied Powers, ultimately resulting in their withdrawal from the islands in 1943. Subsequently, the USA withdrew its military forces from the region by 1945 (United States National Park Service, 2020: 2). In this respect, Alaska was of vital importance for the USA to effectively implement its military policies in the Arctic during WWII.

One of the pivotal post-WWII events concerning the Alaska region was its official recognition as a state. This milestone was marked by the passage of various statehood bills, culminating in House of Representatives (H.R.) 7999, which was approved by the Senate on June 30, 1958. Subsequently, President Dwight D. Eisenhower endorsed the resolution on July 7, 1958. Consequently, on January 3, 1959, Alaska achieved the status of the 49th state of the USA. President Eisenhower underscored the significance of Alaska's abundant resources and its strategic geopolitical location. However, he also highlighted the potential risks associated with these factors for the region (Naske, 1987: 171; United States National Archives, 1959: 1).

The pivotal event that significantly elevated the political and economic significance of the Alaska region following its statehood was the discovery of oil fields in Prudhoe Bay in 1968 (Nilsson, 2018: 98). This discovery marked a transformative moment, as evidenced by the substantial daily oil production that soared to as much as 2 million barrels during the 1970s (United States Energy Information Administration, 2024: 1-2).

Furthermore, in 1971, the Alaska Native Claims Settlement Act (ANCSA) was enacted, and shortly thereafter, the Trans-Alaska Pipeline System (TAPS) was established to facilitate the logistical operations necessary for transporting oil extracted from Alaska. This infrastructure played a crucial role in meeting the USA's oil supply needs, particularly highlighted during periods of crisis such as the 1973 Organization of Petroleum Exporting Countries (OPEC) Oil Embargo and the oil shortages following the 1979 Iranian Revolution (Alaska Oil and Gas Association, 2024: 4). However, despite the strategic importance of Alaska and the Arctic region in both political and economic contexts, the USA has often been perceived as a comparatively passive and hesitant participant among the eight Arctic states (Coates and Holroyd, 2019: 233).

Illustrating this situation, four out of the five nations bordering the Arctic Ocean—Canada, Denmark (via Greenland), Norway, Russia, and the USA—are signatories to the UNCLOS. Notably, the USA has not ratified the UNCLOS but acknowledges that its foundational principles constitute customary international law and are therefore binding on all nations (Østhagen and Schofield, 2021a: 2).

Moreover, the USA has exhibited reluctance in engaging with Arctic-specific agreements such as the IASC established in 1990 and the AEPS initiated in 1991, including challenges in implementing their principles. While the USA participates in security-related strategies in the Arctic, constraints have been observed in translating these commitments into actionable policies and practices (Nilsson, 2018: 99).

In this context, USA policies have been structured to advance both its own interests and broader regional concerns across the polar regions. These policies are outlined as follows:

- Ensuring a secure environment in the aftermath of the CW.
- Conservation of Arctic biodiversity, flora, fauna, and natural resources.
- Promoting regional governance and fostering economic development.
- Enhancing institutional relations among Arctic states.
- Engaging indigenous Arctic communities in national and international decision-making processes that impact their livelihoods.
- Conducting regionally focused scientific research and monitoring both local and global environmental issues (The White House, 1994: 2-3).

While these policy objectives ostensibly reflect a pluralistic approach, the implementation often prioritizes national interests.

Despite its sometimes-hesitant role in Arctic affairs, the USA has also shouldered significant responsibilities, particularly within the AC established in 1996. Notably, the USA assumed the chairmanship twice: first from 1998 to 2000, during which it spearheaded the initiation of the Arctic Climate Impact Assessment (ACIA). This assessment played a pivotal role in understanding the environmental challenges facing the Arctic region. During its second chairmanship from 2015 to 2017, the USA co-chaired, alongside Russia, the Agreement on Enhancing International Arctic Scientific Cooperation in 2017. This agreement aimed to mitigate tensions in the region and promote sustainability efforts, marking a cooperative effort despite geopolitical challenges. However, developments such as the Ukrainian-Russian

conflict have since influenced regional dynamics (AC, 2024g, 1-4).

Finally, the USA is still one of the most influential actors in the region. As of 2022, the population of Alaska is approximately 730,000 and the region's annual economic contribution to the USA is around 49.6 billion. A large part of the economic return comes from mining, transportation and warehousing, real estate and rental and leasing, and healthcare and social assistance. In this context, it is of great importance for the USA to remain an active actor in the region in terms of both economic and political interests (IBISWorld, 2024: 1-2)

2.2.5. The Pragmatic Actor: Norway

Norway's Arctic territories are Nordland, Svalbard and Jan Mayen, and Troms and Finnmark. These areas have a total area of 1,500,000 square kilometers and are inhabited by the indigenous Sami people with a population of 490,000 (AC, 2024h: 1-2). In contrast to conventional terminology, Norway does not typically designate its northern regions as the Norwegian Arctic. Instead, it commonly employs the terms The High North or "Nordområdene," the latter being the local language synonym. These terms encompass the northern parts of Norway and Svalbard Island. These regions hold particular significance due to their proximity to Europe, logistical accessibility, and comparatively higher population density, distinguishing them as more prominent within the Arctic context (Coates and Holroyd, 2019: 151; Østhagen, 2021b: 75- 80).

Among these regions, the Spitsbergen Archipelago, particularly situated on Svalbard Island (including a part on Jan Mayen), holds paramount importance in shaping Norway's Arctic policies due to its rich coal mines and other underground metal resources. However, initially recognized as "terra nullius" in the international arena in 1905, when Norway gained independence from Sweden, Svalbard Island faced differing international opinions. Norway's efforts to establish legitimate authority over Svalbard between 1910 and 1914 were endorsed by Sweden and Russia but contested by the USA and Germany. Nonetheless, leveraging the altered global power dynamics following WWI, Norway successfully negotiated and signed the Svalbard Treaty in Paris on February 9, 1920 (Coates and Holroyd: 2019 268-270).

According to the agreement, "the High Contracting Parties undertake to recognize, subject to the stipulations of the present Treaty, the full and absolute sovereignty of Norway over the Archipelago of Spitsbergen, comprising, with Bear

Island or Beeren-Eiland, all the islands situated between 10 ° and 35 ° longitude East of Greenwich and between 74 ° and 81 ° latitude North” (Arctic Portal, 1920: 2). With this agreement, Norway has become one of the most active actors in the Arctic.

Norway's strategic acquisitions in the Arctic region, coupled with its longest maritime border with the Soviet Union, posed significant challenges within the bipolar international system that emerged after WWII. In response to these geopolitical dynamics, Norway joined North Atlantic Treaty Organization (NATO) on April 4, 1949, securing its borders against Soviet influence (NATO, 2008: 1-2).

Also on February 15, 1957, the Continental Shelf Boundary Agreement was signed between Norway and the USSR. This agreement led to the establishment of the Joint Soviet-Norwegian Boundary Commission and delineated maritime boundaries between the two nations, referencing Varangerfjord. Specifically, the border was set at the midpoint between Cape Nemetsky and Cape Kibergnes, with mutual agreement not to encroach beyond this demarcation line (Coates and Holroyd, 2019: 381; US Department of State, 1970: 2).

In continuation, in 2007, the boundary line in the Varangerfjord region was extended to 73 kilometers through an agreement between the governments of Russia and Norway (Norwegian Ministry of Foreign Affairs, 2010: 3). Furthermore, the Treaty on Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean, signed in 2010 and enforced in 2011, marked the resolution of the maritime border dispute between Russia and Norway. This treaty involved the mutual acceptance of territorial claims and facilitated bilateral cooperation in various areas, including fishing operations and the extraction of hydrocarbon resources within the region (Barents Sea Treaty, 2010: 2-3).

An important development that significantly enhanced Norway's influence in the Arctic was its declaration of a 200 nautical mile EEZ on December 17, 1976. This expansion of sovereignty led to the establishment of Fisheries Protection Zones in Svalbard in 1977 and in Jan Mayen in 1980. Subsequently, disputes arose with Denmark concerning maritime delimitation. Negotiations spanning from 1980 to 1988 over the delineation of zones between Jan Mayen and Greenland were eventually brought before the ICJ in The Hague. The court ruled in favor of Norway, awarding it sovereignty over 100/57 of the specified region. In 1997, agreements were reached to extend all fisheries zones around Jan Mayen (Norwegian Ministries, 2017: 12).

The final resolution of the dispute between Norway and Denmark, alongside the Home Rule Government of Greenland, came in an agreement on the delineation of the continental shelf and fishing zones in the region between Greenland and Svalbard. This agreement solidified Norway's territorial claims and laid the groundwork for cooperative management of resources in the Arctic region (Norwegian Ministries, 2017: 13).

Subsequently, Norway continued its efforts to legitimize its claims by joining the 1982 UNCLOS, the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic, the 1995 UN Fish Stocks Agreement, the IMO, the North East Atlantic Fisheries Commission (NEAFC), the North Atlantic Marine Mammal Commission (NAMMCO) and the AC of 1996 (The Norwegian Government, 2021: 5-6).

Norway's last breakthrough in the Arctic was its inclusion in the Ilulissat Declaration in 2008. With this declaration, Norway, one of the Arctic 5, approved the decision to carry out research, development, navigation and other economic resources beyond the continental shelf covering 200 nautical miles, together with 4 other states, within the criteria determined by UNCLOS. Thus, an element that constitutes a border for states has been overcome and their areas of sovereignty have expanded. The decisions taken within the scope of this agreement are still in effect (Arctic Portal, 2008: 1-2).

2.2.6. The Arctic Trio with No Coast in the Arctic Ocean

The states actively involved in Arctic policies are generally categorized into the Arctic Five, which includes nations with Arctic Ocean coastlines, and the Arctic Trio, comprising Sweden, Finland, and Iceland. The Arctic Five—Russia, Canada, Norway, Denmark (via Greenland), and the USA—typically wield greater influence within the AC, often shaping its decisions. In 2008, the Arctic Five issued the Ilulissat Declaration, asserting their claims to extended continental shelves and intensifying their activities in the Arctic region. This declaration served to consolidate their hegemony while somewhat limiting the influence of the Arctic Trio. Nonetheless, Sweden, Finland, and Iceland continue to assert their interests and actively participate in Arctic policies, contributing significantly to various initiatives over the years. Despite the dynamics within the AC and the geopolitical maneuvers of the Arctic Five,

all Arctic states maintain ongoing territorial claims and remain key players in shaping the region's policies and future directions (Coates and Holroyd, 2019: 139).

Firstly, Finland assumes a prominent role as the instigator in the establishment of the AC. The framework of Arctic Environmental Cooperation (AEC) among Arctic nations began to take shape through the Rovaniemi Process, initiated by Finland in 1989 (Arctic Finland, 2019: 2-3). Subsequently, the Rovaniemi Process gained formal recognition during the Ministerial Conference convened in Rovaniemi in 1991, marking a pivotal step towards the eventual adoption of the OD in 1996. Finland's leadership in emphasizing climate change and environmental standards has underscored its endeavor to play a substantive role in the Arctic region. Moreover, Finland's Arctic strategy, articulated in its 2013 report, encompasses Lapland, home to a population of 180,000 residing within the Arctic Circle, as well as all Finnish territories beyond it, encompassing a total population of approximately 5.5 million (AC, 2024i: 1-3).

Another significant participant in Arctic affairs is Iceland, which maintains its entire territory within the Arctic Circle and supports a population of approximately 365,000 (AC, 2024j: 1-2). Like Finland, Iceland's engagement in Arctic issues gained momentum in the 1990s, primarily driven by initiatives to address climate change and pursue political and economic interests, including natural resource extraction, fisheries development, and commercial opportunities in trans-Arctic shipping routes (Coates and Holroyd, 2019: 251-252).

Iceland's proactive involvement in Arctic governance included resolving longstanding disputes, such as the fishing rights in the Barents Sea vis-à-vis Norway under the Svalbard Treaty of 1920. This was achieved through Iceland's accession to the Svalbard Treaty in 1994. Despite its membership in the AC, Iceland's influence in shaping Arctic policies is somewhat constrained, owing to its relatively recent integration into Arctic governance processes and its lack of a direct Arctic Ocean coastline (Coates and Holroyd, 2019: 251-252).

Sweden's engagement with the Arctic region predates that of Finland and Iceland, evidenced by its status as one of the initial signatories of the Svalbard Treaty (Arctic Portal 1920: 1). However, as a non-Arctic Five member, Sweden lags in terms of its involvement and influence in Arctic policy processes compared to Finland and Iceland (Arctic Yearbook, 2020: 3-4). Sweden re-entered Arctic politics in earnest after 1990, participating actively in initiatives such as the Barents Euro-Arctic Council. This

collaboration involved Arctic states—Norway, Sweden, Finland, Iceland, Denmark—as well as the EU, focusing particularly on sustainability issues in the region (The Barents Euro-Arctic Council, 2023: 1-2).

Sweden has made significant strides in Arctic affairs through its participation in key agreements within the AC. These include “the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (2011), the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (2013), and the Agreement on Enhancing International Arctic Scientific Cooperation (2017)” (Government Offices of Sweden, 2020: 16).

Furthermore, Sweden reaffirmed its commitment to Arctic policies by assuming the presidency of the AC from 2011 to 2013. This leadership role underscored Sweden's proactive stance in shaping Arctic governance and promoting regional cooperation. Geographically, Sweden's Arctic footprint extends through Västerbotten County and Norrbotten County, collectively representing one-third of the country's territory. These regions are considered part of the Arctic, hosting approximately 520,000 residents who contribute to Sweden's Arctic identity and engagement (AC, 2024k: 1-2).

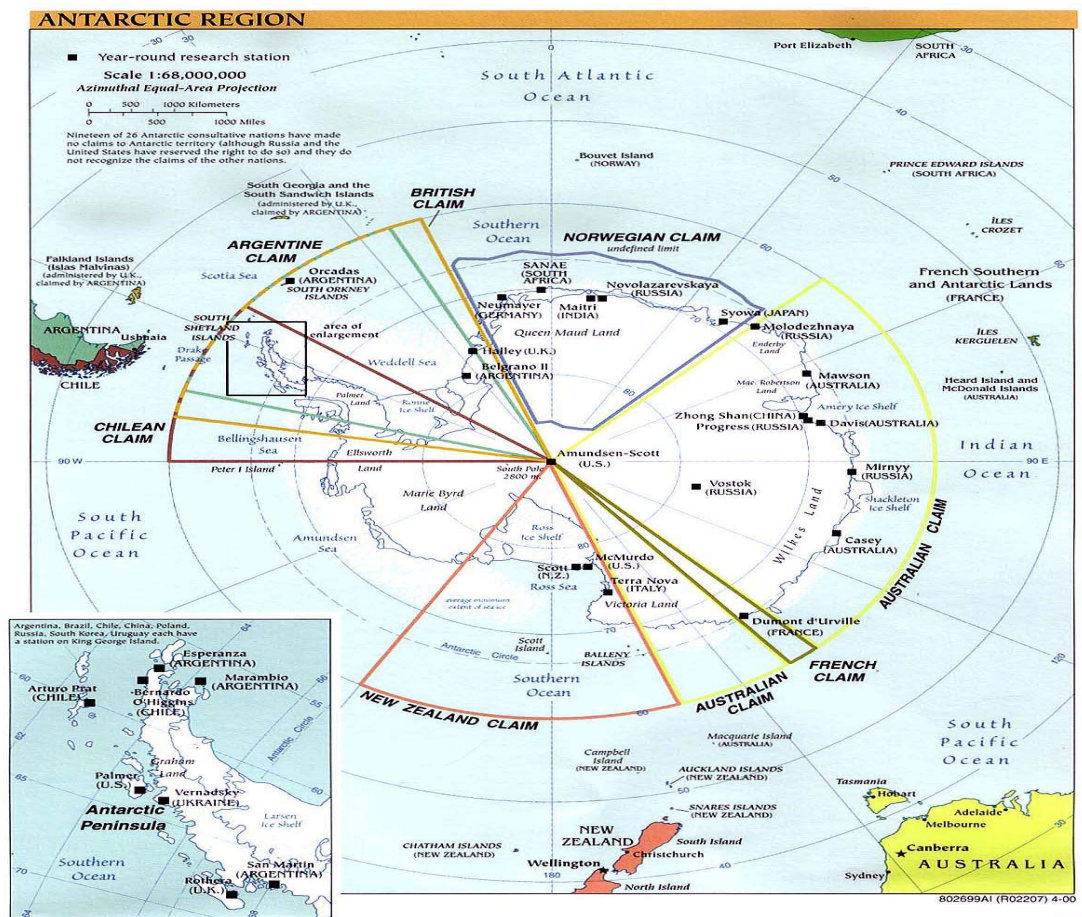
2.3. ANTARTIC TREATY SYSTEM: AN AGREEMENT ON DISAGREEMENTS

Antarctica diverges from the Arctic in several aspects, particularly in terms of its discovery and subsequent political evolution. Unlike the Arctic, the existence of Antarctica was hypothesized based on theoretical reasoning rather than empirical evidence. Ancient Greek philosophers postulated the existence of a southern landmass akin to the North Pole, where the Arctic is situated, and termed it 'Terra Australis Incognita' (Watt, 2024: 1-3).

Explorations towards Antarctica began relatively late compared to other regions due to several unique characteristics. Unlike the Arctic, Antarctica is not surrounded by any coastal state, nor is it under the direct control of any nation. Moreover, its extreme remoteness and harsh environmental conditions pose significant logistical challenges (Coates and Holroyd, 2019: 441-442). In 1773, the American explorer James Cook voyaged near Antarctica for the first time and encountered several islands in its vicinity, among them Cook Island. However, Cook's expedition

only skirted the periphery of the Antarctic mainland and did not venture deep enough to explore it directly (Kirwan, 1962: 65). In continuation the Antarctic continent was officially discovered in 1819 when British captain William Smith first sighted and explored its mainland. Following this milestone, numerous nations, with Britain at the forefront, began to undertake expeditions and establish a presence in the region (Kirwan, 1962: 99-100).

Figure 10: Territorial Claims for the Antarctic



Source: Library of Congress Central Intelligence Agency, 2005: 1.

During the period following the discovery of the continent and leading up to the signing of the AT in 1959, seven states asserted direct territorial claims over Antarctica. These states included the UK, New Zealand, Australia, France, Norway, Chile, and Argentina. Concurrently, the USA and the Soviet Union maintained reserved claims and withheld recognition of the territorial claims made by other states

(US. Department of State, 2002: 1).

As illustrated in Figure 10, the territorial claims by these states delineated sectors across Antarctica, akin to practices observed in the Arctic region. These boundaries encompass nearly the entire continent, except for the sector situated between the territories claimed by Chile and New Zealand.

The period of competing territorial claims persisted until the signing of the AT on December 1, 1959. This landmark agreement established several crucial provisions that bound all signatory parties:

- Peaceful Purposes and Scientific Studies: Articles 1 and 2 stipulate that Antarctica shall be used exclusively for peaceful purposes and scientific research. Military activities, testing of weapons, and deployment of military personnel are prohibited (AT, 1959: 3).
- Sharing of Scientific Work: Article 3 mandates the sharing of scientific work, personnel, and scientific programs among all Antarctic research bases (AT, 1959: 3-4).
- Renunciation of Sovereignty Claims: According to Article 4, all states parties to the AT renounce their existing territorial claims and agree not to assert any future claims to sovereignty over Antarctica (AT, 1959: 4).
- Prohibition of Nuclear Activities: Article 5 prohibits the use of nuclear energy derivatives, storage of radioactive waste, and conducting nuclear tests on the continent (AT, 1959: 5).
- Territorial Claims Limitation: Article 6 specifies that no new claims of sovereignty shall be made south of 60 degrees South Latitude (AT, 1959: 5).
- Openness and Inspection: Article 7 allows each state party to appoint observers to verify compliance with the treaty. It also ensures that all areas, bases, installations, vehicles, and equipment in Antarctica are open to visits by observers from other states, promoting a policy of transparency (AT, 1959: 5-6).
- Open Membership and Peaceful Intentions: Article 9 states that the AT is open to all states that demonstrate a commitment to using Antarctica solely for peaceful and scientific purposes, thereby promoting an inclusive and transparent approach to governance (AT, 1959: 7-8).

These articles collectively form the backbone of the AT, establishing a

framework for international cooperation, scientific research, and environmental protection in Antarctica.

This system, which adopts a peaceful approach, developed over time with the agreements listed below and turned into the Antarctic Agreements System.

1. “The Protocol on Environmental Protection to the AT (Madrid, 1991,) (With this protocol, it is prohibited to use resources in Antarctica for colonial activities until 2048).
2. CCAS (London, 1972).
3. CCAMLR (Canberra 1980) (Leuprecht and Causey, 2022: 73-74).”

The ATS operates under the oversight of the annual ATCM and the meetings of the CEP (Secretariat of the AT, 2024a: 1). Underpinning the treaty's principles of transparency and cooperation, the number of states party to the treaty has expanded to 57, comprising 29 consultative states and 28 observer states. Initially composed of 12 consultative states, an additional 17 states have since joined these ranks. The treaty remains open to all nations that espouse peaceful policies, welcoming their participation in shaping Antarctic governance and environmental stewardship (Secretariat of the AT, 2024b: 2-3).

At the same time, some sub-units and Non-Governmental Organizations (NGOs) working under ATS also strive to protect the fauna and flora of Antarctica. These units can be listed as follows: SCAR, the Council of Managers of National Antarctic Programs (COMNAP), the International Association of Antarctica Tour Operators, (IAATO), the Antarctic and Southern Ocean Coalition (ASOC) (Secretariat of the AT, 2024c: 1-2).”

In conclusion, ATS derives its binding authority from its robust operational mechanisms, distinguishing it as the singularly successful treaty of the CW era and beyond. The treaty's comprehensive prohibition of military activities, including nuclear weapons testing, as well as the exploration of underground resources, feasibility studies, and research and development initiatives in Antarctica, anchored in the 1959 AT, holds profound significance for the preservation of the region's biodiversity. Within this framework, the ATS demonstrates markedly superior efficiency and effectiveness in comparison to the AC, particularly in fulfilling its environmental conservation objectives.

2.4. TERRITORIAL CLAIMS TO THE ANTARCTIC

2.4.1. The Colonizer Actor: The United Kingdom

Britain's involvement in Antarctica commenced in October 1819 through a naval expedition led by William Smith. Smith designated the area above latitude 62° 42' and longitude 40° as 'New South Britain' (later referred to as the New South Shetland), thereby asserting British territorial claims on behalf of the crown (Christie, 1951: 74; Kirwan, 1962: 100-101). This initial initiative initiated by Smith persisted into the 1900s, marked notably by subsequent explorers such as Fabian Gottlieb von Bellingshausen, George Powell, Nathaniel Palmer, James Weddell, James Clark Ross, Robert Falcon Scott, and Ernest Shackleton during the Southern Cross Expedition of the Heroic Age. These expeditions solidified Britain's enduring presence and influence in Antarctica, establishing significant dominance in the region (Government of the British Antarctic Territory (BAT), 2024a: 1-2).

The first official attempt of the UK, as the first state to claim rights in Antarctica, was the text of the decision in Letters Patent dated July 21, 1908, which was based on the principle of Canada's sector theory. This claim is:

“Now we do hereby declare that from and after the publication of these Our Letters Patent in the Government Gazette of Our Colony of the Falkland Islands the said groups of islands known as South Georgia, the South Orkneys, the South Shetlands, and the Sandwich Islands, and the said territory of Graham’s Land shall become Dependencies of Our said Colony of the Falkland Islands.” (UK Parliament, 1908: 1).

Then the Letters Patent issued on March 28, 1917, delineated a terrestrial region situated in the South Atlantic Ocean, south of the 50th parallel of south latitude and between the 20th and 80th degrees of west longitude, as part of the Dominions. This declaration finalized the unresolved 'borders' issue pending since the 1908 decision, thereby resolving the clarity concerning territorial jurisdiction (UK Parliament, 1917: 241-243).

The establishment of a permanent structure in Antarctica was enabled by Operation Tabarin, initiated in 1943 under the auspices of the British Admiralty by Lieutenant James Marr and Major Andrew Taylor. This operation led to the construction of a permanent weather station, Base Y, in the Falkland Island Dependencies (FID). By 1945, oversight of the project was transferred to the Colonial

Office, which renamed it the Falkland Island Dependencies Survey (FIDS). Its primary objective was to assert the UK's territorial presence in accordance with international legal frameworks, notably under International Court of Law (ICL) statutes (Kirwan, 1962: 346; Mason, 1950: 145).

However, this initiative provoked reactions from Argentina and Chile, both geographically proximate to the region, who viewed Britain's actions as intrusive. This tension culminated in the emergence of the "Antarctic Question" crisis in 1947, sparking a contentious diplomatic process between Britain and these nations over the sovereignty of the Falkland Islands and Graham Land (Christie, 1951: 258-259).

As documented in Volume 429 of the Official Report of the UK Parliament dated 27 April 1982, all British applications to the ICJ seeking sovereignty over the Falkland Islands and Graham Land in 1947, 1951, 1953, and 1955 were consistently rejected by Argentina and Chile (UK Parliament: 1982: 1-5). Nevertheless, despite these international disputes, Britain formally designated the FID as the British Antarctic Survey (BAS) in 1962 (Government of the BAT, 2024b: 1).

On the Argentine side, justification for their claims included the establishment of the National Commission on the Antarctic (Comisión Nacional del Antártico) in the 1940s and their ongoing exploration activities in the region (Joyner, 1984: 471-472). Simultaneously, Argentina lodged a claim with the UN in 1964, alleging British colonial activities in the area. However, the UN's decision on this matter failed to resolve the ongoing disputes between the parties involved (Dodds, 1996: 413-41).

The AT of 1959 did not resolve the longstanding crisis between Britain and Argentina. This unresolved tension escalated into open conflict when Argentina launched an invasion of the Falkland/Malvinas Islands and Georgia Islands in April 1982. During the subsequent war, the international community, including the UN and the EU, largely supported Britain's stance, leading to economic sanctions against Argentina. These measures played a pivotal role in tipping the scales in favor of the British forces (Freedman, 1982: 199-201)). The war concluded with the surrender of General Mario Menendez, Argentina's commander in the region. Following the cessation of hostilities, Britain maintained control over both Georgia and the Falkland/Malvinas Islands. Despite the end of hostilities, the dispute between the two nations remains the most serious issue in the region (Freedman, 1982: 207).

Subsequently, all territories acquired by Britain in the region were consolidated under the designation BAT. Administration and oversight of these lands fall under the

auspices of the Polar Regions Department, which operates under the Foreign, Commonwealth, and Development Office (BAS, 2024a: 1-2). The boundaries of the BAT were officially delineated by The BAT Order in Council 1962/400, which took effect on 3 March 1962. According to this order, the BAT encompasses “all islands and territories whatsoever situated between the 20th and 80th degrees of west longitude south of the 60th parallel of southern latitude” (Government of the BAT, 2024b: 2). This decision, made under Article 6 of the AT, adjusted the territorial boundary from the 50th to the 60th parallel of south latitude (AT, 1959: 5).

The British Antarctic Survey (BAS) manages several research stations within the BAT, including the Rothera Research Station, Halley VI Research Station, Bird Island Research Station, King Edward Point Research Station, and Signy Research Station. These stations continue to conduct scientific research and operate on behalf of Britain in the specified region (BAS, 2024b: 2).

2.4.2. Actors Under-Commonwealth Tutelage: New Zealand and Australia

New Zealand and Australia's engagement in Antarctica traces back to their incorporation into Britain's regional policies, which included the transfer of territorial management to them in specific sectors (Christie, 1951: 289).

First of all, New Zealand's Antarctic presence commenced with the UK granting it administration over the Ross Sea coasts, adjacent islands, and territories situated south of 60 degrees south latitude, spanning between 160 degrees east longitude and 150 degrees west longitude. This allocation marked New Zealand's initial involvement and claim in the Antarctic region (Kirwan, 1962: 336).

In this context, according to article 2 of the decision taken on the 30th day of July 1923 within the scope of the British Settlements Act 1887 and the Ross Dependency: Provision for Government Thereof text: “From and after such publication as aforesaid the Governor-General and Commander-in-Chief of the Dominion of New Zealand for the time being (hereinafter called the Governor) shall be the Governor of the Ross Dependency” (New Zealand Legislation, 1923: 2). Thus, New Zealand became an actor representing British policies in the region.

However, following the enactment of the Statute of Westminster in 1931, which granted full legal autonomy to the 12 countries of the British Commonwealth of

Nations, including New Zealand, the influence of Britain on New Zealand began to wane. Consequently, New Zealand embarked on a path of independent policy formulation (UK Parliament, 1931: 1-3).

Subsequently, amidst the escalating global impacts of WWII, in 1954, the Prime Minister of New Zealand announced initiatives aimed at denuclearizing Antarctica and advocating its internationalization under UN auspices (Falconer, 2000: 9). Within this context, Scott Base was established on January 20, 1957, following New Zealand's participation in the Commonwealth Trans-Antarctic Expedition (TAE). The establishment of Scott Base marked a pivotal step in New Zealand's engagement with Antarctica. Furthermore, New Zealand's involvement in the 1st IGY from July 1, 1957, to December 31, 1958, played a crucial role in advancing scientific research and promoting peace in the Antarctic region, culminating in the eventual negotiation of the AT (Antarctica New Zealand, 2024: 2).

On the other hand, Australia's involvement in Antarctica traces its origins to the British, Australian, and New Zealand Antarctic Research Expedition (BANZARE) conducted from 1929 to 1931. Led by the Australian explorer Sir Douglas Mawson, this expedition laid claim, on behalf of Britain, to the territory that would later be designated as the Australian Antarctic Territory (AAT) (Kirwan, 1962: 335).

The sovereignty of this specific region was formally transferred to the Commonwealth of Australia by Britain on June 13, 1933, through the AAT Acceptance Act 1933. According to this legislative act, the AAT encompasses the area extending from 60° South latitude to the South Pole, and between 160° East and 45° East longitudes. Notably, the region of Terre Adélie, which is under the sovereignty of France, lies outside the boundaries of the AAT (Australian Attorney-General's Department, 2000: 1).

The establishment of Mawson Research Station in 1954 marked Australia's initial significant presence on the Antarctic continent, facilitating expanded scientific endeavors in the region (Leuprecht and Causey, 2022: 186). Subsequently, during subsequent years, Davis and Casey Research Bases were established on the Antarctic continent, while Macquarie Island Station was established in the sub-Antarctic region. These four stations continue to operate under the auspices of the AAT (Australian Government, 2024: 1-2). However, it is important to note that both New Zealand and Australia's activities in Antarctica are still influenced by their historical affiliations within the framework of the guardianship status under the British Commonwealth

(Dodds, 1996: 404-406).

2.4.3. The Moderate Actor: France

France's claim to Antarctica dates back to the discovery of Terre Adélie (Adélie Land) during the Antarctic expedition led by French explorer Jules Dumont d'Urville in 1840, which established it as French territory (Kirwan, 1962: 303). Formally, France's initial official action was the annexation of Terre Adélie in 1924. Concurrently, on the same date, other French territories such as the Crozet Islands, Kerguelen Islands in the southern Indian Ocean, and the regions of Saint-Paul and Nouvelle Amsterdam came under the administration of the French Colony of Madagascar and Dependencies (1924-1955) (The Editors of Encyclopaedia Britannica, 2024b: 1).

These territories, along with the Scattered Islands (Europa, Juan de Nova, Bassas da India, Glorioso, and Tromelin), were consolidated under the name French Southern and Antarctic Lands (TAAF) following the dissolution of the administration of the French Colony of Madagascar and Dependencies. They were integrated into France and collectively referred to as the southern lands (Overseas Countries and Territories Association (OCTA), 2024: 1).

However, since France's claim to sovereignty over Terre Adélie was located in the center of the sector designated as the AAT, this claim was initially met with reaction by Britain and Australia. As a result of negotiations, the boundaries of the AAT were clearly defined on 1 April 1938 (45°E to 136°E and 142°E to 160°E, south of 60°S) (Headland, 2022: 1) and Terre Adélie is recognized as belonging to France (Scott and VanderZwaag, 2020: 150).

In 1945, France took a significant step towards establishing a robust presence in Antarctica by appointing Paul E. Victor to lead the French Antarctic Research Programme, known as 'Expéditions Polaires Françaises'. Victor's role focused on conducting logistical studies aimed at facilitating the establishment of French research bases on the continent (Brady, 2013: 259). As a result of Victor's efforts, the Dumont d'Urville Research Station was constructed in Adélie Land in 1956, in preparation for the IGY of 1957-1958 (French Polar Institute, 2024a: 1-2).

Subsequently, France collaborated with Italy to establish Concordia Station, known as La Stazione italo-francese Concordia, in 2005 (Programma Nazionale di

Ricerche in Antartide (PNRA), 2019: 1). Both Dumont d'Urville and Concordia Stations operate under the auspices of the French Polar Institute Paul-Émile Victor (IPEV), which was established in 1992 in memory of Paul-Émile Victor. These stations serve as pivotal hubs for scientific research and exploration in Antarctica, exemplifying France's enduring commitment to Antarctic studies and international collaboration in polar research (Encyclopedia of the Environment, 2024: 1-3; French Polar Institute, 2024b: 1-3).

2.4.4. The Expansionist Actor: Norway

Norway's engagement with the Antarctic continent commenced in the 1890s through activities primarily centered around whaling. The first expedition to Antarctica took place in 1892 with the Jason expedition led by Captain C. A. Larsen. Additionally, Carsten Borchgrevink, as part of the British Southern Cross Expedition, contributed to Norway's Antarctic presence by spending a winter at Cape Adare (Kirwan, 1962: 220-222).

Initially, Norway's involvement in Antarctica was driven by commercial interests. However, as numerous states began asserting territorial claims on the continent, Norway adjusted its approach. On December 1, 1927, Norway launched the *Norvegia I* Expedition, leading to the annexation of Bouvet Island (54° 25' S, 3° 21' E). This was followed by the *Norvegia II* Expedition in 1928, which resulted in the annexation of Peter I Island (68° 50' S, 90° 35' W) (Norwegian Ministry of Foreign Affairs, 2015: 5).

In contrast to other nations that employed the sector theory to stake claims in Antarctica, Norway adopted a direct annexation strategy, distinguishing itself with an expansionist agenda. This approach was further solidified with the Royal Proclamation issued on May 1, 1931, which reaffirmed Norway's sovereignty over Peter I Island and reinforced its Antarctic policy (US Naval War College, 1949: 239).

Despite earlier actions, Norway's most significant move in Antarctica was the annexation of Dronning Maud Land. Foreign Affairs Minister Halvdan Koht referenced Royal Proclamation No. 19 on January 14, 1939, declaring Norway's sovereignty over the mainland coastline of Antarctica, the inland territories adjacent to this coast, and the surrounding ocean (Norwegian Ministry of Foreign Affairs, 2015: 17). This annexed territory, held by Norway prior to the signing of the AT, was

governed under Norway's Dependencies Act. While agreements were reached with the UK regarding the management and boundaries of the region, differing political perspectives emerged, particularly with South American countries pursuing assertive policies in Antarctica. These geopolitical dynamics underscored Norway's strategic interests and engagements in the Antarctic region during this period (Norwegian Ministry of Foreign Affairs, 2015: 18-19).

In addition, Norway dominated the entire coastline from approximately 16° 30' West longitude to 45° East longitude, including much of the interior of Dronning Maud Land (Norwegian Ministry of Foreign Affairs, 2015: 15-16). Finally, Norway, like other actors, built the Troll Antarctic Research Station in Dronning Maud Land in 1990 in order to carry out scientific studies on the island after the Antarctica treaty, and it is still actively working (SCAR, 2017: 1).

2.4.5. The Aggressive Actors: Chile and Argentina

Chile and Argentina, situated in close proximity to Antarctica, assert inherent rights to the continent based on their independence from Spain and Portugal, the colonial powers that once claimed dominion over it during periods of exploration (prior to its formal discovery). They justify their claims within the framework of international law, particularly referencing the 1493 Papal Bull and the 1494 Treaty of Tordesillas. These historical documents, invoking the “*Uti Possidetis Juris*”⁴ (UPJ) principle, form the basis of their territorial assertions over specific regions of Antarctica (Tanaka et al., 2023: 36).

However, since the regions claimed by Chile and Argentina were previously annexed by the UK, an ongoing conflict situation has arisen between the parties (Kirwan, 1962: 345). The region in question is the region extending outside the Antarctic Circle, called Graham Land for the British, Tierra San Martin for the Argentinians, and Tierra O'Higgins for the Chileans, and they still accept the UK as an occupier in these regions (Wilson, 1964: 16).

⁴ The concept of UPJ pertains to the principle of territorial integrity. In this context, it is an international law doctrine stipulating that territory and other properties remain with their existing sovereign holders at the conclusion of a conflict, unless explicitly altered by an agreement. This principle ensures that the status quo of territorial possession is maintained unless officially modified through negotiated arrangements (Nesi, 2008: 1-3).

During the subsequent period, Chile's official claim in Antarctica, establishing it as the first of the two states to do so, was formalized as follows, in accordance with Article 2 of Supreme Decree No. 1747, proclaimed by the Ministry of Foreign Affairs on November 6, 1940: “The Chilean Antarctica (Territorio Chileno Antártico) is delimited by longitude 53° West of Greenwich and longitude 90° West of Greenwich, encompassing the corresponding maritime areas, all known and to-be-discovered lands, islands, islets, reefs, glaciers, and other geographical features, as well as the pertinent territorial waters therein” (Chile Chamber of Deputies, 2014: 17). Chile has pursued an aggressive policy in these areas, building 2 research stations by 1948 (Britain had 5 active research stations at the same time) (Christie, 1951: 261). In addition, Chile currently has 12 research stations, and the city of Punta Arenas is of particular importance for logistics in Antarctica (Marca Chile, 2020: 1-2).

Argentina's engagement in Antarctica commenced in 1904 with the establishment of the Orcadas Research Station on Laurie Island in the South Orkney Islands. This initial foray marked Argentina's inaugural scientific presence in the region (Argentine Ministry of Foreign Affairs, International Trade and Worship, 2017: 1-3). The escalation of Argentina's Antarctic activities was significantly influenced by its assertion of direct claims over the South Orkney Islands and South Georgia in 1937, alongside claims over the British FID during the same period. These territorial assertions precipitated conflicts of interest with Britain, prompting Argentina to adopt a more assertive role in Antarctic policies (Kirwan, 1962: 331).

Subsequently, on 15 February 1943, the Argentine Ministry of Foreign Relations and Worship issued a memorandum to the British Embassy formally declaring all lands and dependencies located south of latitude 60° South and between 25° West and 68°34' West coordinates as the Argentine Antarctic Sector (Antártida Argentina or El Sector Antártico Argentino). This declaration encompasses territory disputed by Chile (7%) and Britain (14%). This historical progression underscores Argentina's evolving geopolitical and territorial engagements in Antarctica, shaping its ongoing presence and strategic interests in the region (Headland, 2022: 2). But this demand triggered the start of Operation Tabarin. In response to this expansionist move by Britain, on 12 March 1947 Argentina extended its claim to the western border to the 74° West longitudinal line, beginning the process that led directly to war with Britain (Wilson, 1964: 23-25).

The anti-British Antarctic policies of Chile and Argentina triggered the political rapprochement of the two states. In this context, Chile first proposed to Argentina in 1907 to establish a pact to act against Britain (Wilson, 1964: 18).

However, the formalization of Argentina's Antarctic claims took place through two significant agreements: the First Joint Declaration on the Antarctic on 12 July 1947, and the Second Joint Declaration on the Antarctic on 4 March 1948, both held in Argentina. These agreements were pivotal as they established a framework for mutual recognition and cooperation between Argentina and other nations involved in Antarctic affairs. Within these declarations, three key articles were agreed upon:

1. Recognition of each other's claims within the area bounded by the 25th and 90th meridians west of Greenwich in the South American Antarctic.
2. Agreement on mutual cooperation as the guiding principle for resolving issues where the Antarctic boundaries of the two states intersect or are not clearly defined.
3. Thirdly, the Chile-Antarctic Pact was officially established upon the continuation of negotiations to clarify the unclear borders.

With this pact, the two states began to act together against Britain (US Naval War College, 1949: 226-227).

Following the escalating tensions among Chile, Argentina, and Britain over Antarctic territories, the Hague Peace Court was petitioned in 1955 amidst growing concerns of potential conflict dating back to 1949, with a shared goal of averting military confrontation. However, both Chile and Argentina disputed the court's decision, alleging bias in favor of Britain (Wilson, 1964: 25).

Efforts to resolve disputes under Article 4 of the AT, signed in 1959, proved inadequate in achieving reconciliation. Argentina and Britain, exhibiting more assertive postures compared to Chile, eventually resorted to armed conflict, as previously discussed. Consequently, territorial disputes among these three nations, particularly concerning regions such as the Falklands or Malvinas Islands, persist unresolved. The persistent political tension, notably between Argentina and Britain, continues to pose a significant risk to the ATS. This ongoing friction undermines efforts aimed at maintaining international cooperation and stability within the Antarctic region (AT, 1959: 4-5).

CHAPTER THREE

ANALYSIS OF THE EFFECTS OF POLAR POLICIES OF RUSSIA AND THE UNITED STATES OF AMERICA ON THE SUSTAINABILITY OF POLAR GOVERNANCE WITHIN THE FRAMEWORK OF CLIMATE CHANGE

In numerous international contexts, the influence exerted by Russia and the USA on polar governance remains profound. Throughout the CW and into the post-CW era, these two nations have consistently contested polar policies, despite occasional points of agreement. Specifically, Russia's assertive military strategies, which have gained prominence globally, and the collaborative stance of China alongside Russia, often aligning against the USA, have contributed to heightened tensions between the Western and Eastern geopolitical blocs.

In this framework, firstly, the effects of Russia and the USA on the AC and the ATS will be analyzed by taking the Chinese factor into consideration. Secondly, a critical analysis will be made on international law, territorial claims and the decisive impact of international conflicts on this point. Finally, there will be a discussion section on the sustainability of polar governance and the effects of territorial claims on this issue on the basis of Realism Theory.

3.1. EFFECTS OF RUSSIA'S AND THE UNITED STATES OF AMERICA'S POLAR POLICIES ON THE ARCTIC COUNCIL

3.1.1. The Policymaker of Arctic Council: Russia

The Arctic region witnessed significant military competition between the USSR and the USA, particularly during the CW. This rivalry shaped policies in the region under the framework of military security protocols, driven by ideological differences and the looming threat of nuclear conflict. Geopolitically, the Arctic served as a boundary between the Western Liberal Bloc and the Communist Eastern Bloc. However, overall, Soviet influence in the Arctic during the CW era was notably more pronounced, largely due to the relatively passive Arctic policies pursued by the USA (Leuprecht and Causey, 2022: 70-71).

The dynamics in the Arctic shifted notably with the advent of Mikhail Gorbachev's "Perestroika and Glasnost"⁵ initiatives upon assuming leadership of the Communist Party in 1985. These initiatives ushered in a transformative process that significantly altered the prevailing political landscape in the Arctic (Hosking et al., 2024: 2-5). Of particular significance was Gorbachev's declaration of the Murmansk Initiative in 1987, which marked the beginning of constructive engagements in the Arctic region, envisioning it as an International North and promoting it as a zone of peace bridging the East-West divide (Leuprecht and Causey, 2022, 75).

Gorbachev's moderate policies paved the way for the establishment of the AEPS in 1991 and later the AC in 1996 (Tanaka et al., 2023: 129). In this context, during the initial establishment of the AC, there appeared to be a climate of consensus among the participating states.

The predominant factor contributing to the consensus that has developed in the region is Russia's curtailed investment in the Arctic following the collapse of the Soviet Union, leading to a period of growing regional isolation. However, this trend began to reverse in the early 2000s due to several key developments: the accelerated melting of glaciers attributable to climate change, the opening of new Arctic Sea routes, facilitating easier access to hydrocarbon reserves, prompting a renewed strategic emphasis by Russia on the Arctic region (Coates and Holroyd, 2019: 204).

Following this policy shift, a pivotal move by Russia was its application to extend its continental shelf, akin to other Arctic nations, under the auspices of the UNCLOS of 1982 (UN, 2024b: 1-2). On 20 December 2001, Russia formally submitted a request to the CLCS to expand its continental shelf beyond the 200 nautical mile limit in its Arctic sector, citing Article 76 and paragraph 8 of UNCLOS. Subsequently, in 2002, the UN requested further scientific substantiation from Russia to support this claim (UN, 1982: 1-5).

However, the initial decision did not meet the expectations of Russian President Vladimir Putin. By 2007, Russia symbolically asserted its stance by placing a titanium flag at a depth of 4,261 meters in the Arctic Ocean, underscoring its commitment to the issue. This action heightened tensions in the Arctic region, amplifying geopolitical

⁵ Perestroika and Glasnost were policies introduced in the final years of the Soviet Union aimed at moving away from the traditional communist framework and incorporating democratic and liberal elements into both social and economic spheres. Despite these reforms, the implementation of Perestroika and Glasnost was insufficient to prevent the eventual collapse of the Soviet Union (Gidadhubli: 1987: 784-786).

dynamics surrounding territorial claims and resource exploitation

Furthermore, the proposition made in 2007 to establish a comprehensive regulatory framework through consensus in the region has been rendered impracticable due to Russian Long Range Aviation flights spanning significant portions of the Arctic and disregarding established borders. This development has emerged as a significant concern for the USA, particularly as China and Russia frequently collaborate in the power dynamics of the Russia-China-USA triad within the region. Consequently, tensions in the Arctic have escalated anew in the post-CW era (Leuprecht and Causey, 2022: 47).

Russia's foremost strategic move in terms of state policy is encapsulated in the declaration titled "The Foundations of Russian Federation Policy in the Arctic until 2020 and Beyond," unveiled on September 18, 2008, which represents Russia's updated Arctic Strategy. This declaration underscores several national interests:

1. "Management of glacial dynamics and the Arctic ecosystem, influenced by climate change.
2. Preservation of the unique economic and industrial framework of the region, alongside monitoring its relatively sparse population.
3. Oversight of all logistical operations conducted within or for the Arctic region.
4. Assessment of the risks posed by anthropogenic impacts on the fragile ecological balance of the region" (Russian Federation, 2008: 98).

Through this articulated strategy, Russia has reasserted its regional policies, attributing climate change as a primary catalyst, while augmenting its regulatory authority over logistical activities in the Arctic.

The goal that Russia seeks to achieve through these actions is access to resources within the AZRF, which represents the largest economic region in the world. These regions within the AZRF can be listed as follows:

- "Murmansk Region
- Republic of Karelia
- Arkhangelsk Region
- Nenets Autonomous District
- Komi Republic
- Khanty-Mansiysk Autonomous Region – YUGRA
- Yamalo-Nenets Autonomous District

- Krasnoyarsk Territory
- Republic of Sakha (Yakutia)
- Chukotka Autonomous District” (Russian Far East and Arctic Development Corporation, 2024: 2).

Russia's objectives for the regions listed above are as follows: The use of hydrocarbon resources, biological resources and raw materials of strategic importance in the region for the benefit of the country in the context of socio-economic needs; ensuring control over the transitions on the NSR; carrying out all kinds of logistical and military activities to ensure the national security of both the AZRF and Russia when necessary; maintaining ecological standards in the region; providing and securing the communication infrastructure for the AZRF; and finally, adopting and implementing policies in accordance with the principles of bilateral or multilateral agreements between Russia and other Arctic states (Russian Federation, 2008: 98-99).

Russia revised its 2008 declaration on February 20, 2013, renaming it as the 'Strategy for the Development of the Arctic Zone of the Russian Federation and Ensuring National Security for the Period up to 2020'. This updated policy document notably incorporated the concept of sustainable development, particularly highlighting the preservation of Arctic fauna and flora. Concurrently, the declaration underscored heightened international threats faced by Russia, reflecting a stance leaning towards political protectionism. Nevertheless, the primary focus of Russia in both iterations of the declaration has been the preservation of Arctic ecosystems amidst resource utilization and the implementation of new projects in the region (Coates and Holroyd, 2019: 205)

However, following Russia's annexation of Crimea in 2014, its assertive actions near Ukraine's borders, involvement in Syria, and subsequent economic sanctions imposed by Western nations, the Arctic operations have increasingly been subject to political scrutiny and contention (Coates and Holroyd, 2019: 196).

This geopolitical landscape has constrained Russia's access to Western technological tools necessary for hydrocarbon extraction, leading to global increases in hydrocarbon prices due to reduced Russian exports. Concurrently, Russia escalated its military presence in the Arctic from 2015 onwards. This escalation aimed not only to strengthen control over the NSR but also to safeguard its borders amid intensifying competition for natural resources in the region (Coates and Holroyd, 2019: 206).

The biggest supporter of Russia's activities in the region is China, which joined the AC as an observer in 2013. Upon joining, China swiftly began exerting influence in Arctic policies, leveraging its economic might through initiatives such as the Belt and Road Initiative and the Polar Silk Road project. This strategic approach enabled China to collaborate closely with Russia in pursuing regional resources, notably in liquefied natural gas (LNG) extraction projects (The State Council Information Office of the People's Republic of China (PRC), 2018: 3-4). The escalating engagements of China in the region are widely regarded as a significant concern by Western nations, particularly the USA. Concurrently, Russia's pursuit of closer ties with China, driven by China's economic prowess, has contributed to a steady rise in China's Arctic initiatives (Leuprecht and Causey, 2022: 23-24). This situation facilitates Russia's ability to more readily take actions against Western interests.

In the ongoing process, Russia's latest significant declaration regarding its Arctic policies is encapsulated in the document titled "Foundations of the Russian Federation State Policy in the Arctic for the Period up to 2035," released on March 5, 2020. This document underscores national security and the safeguarding of interests with heightened emphasis. The declared interests in this framework can be delineated as follows (Davis and Vest, 2020: 2):

- “Protecting Russia's territorial integrity and sovereignty in the region at the military level.
- Establishment of a Federal Security Service (FSB) Coast Guard network in the Arctic region.
- Management of the Arctic region within the framework of a climate of peace and consideration of mutual benefit.
- Improving the living standards and ensuring the security of all Russian citizens living on the AZRF.
- To transform AZRF into a strategic base and move it to a position that will provide added value to Russia in a sustainable manner.
- To develop Russia's national transportation route, the NSR, which has an important place in the world economy.
- Finally, to protect and ensure the safety of fauna, flora and human life in the Arctic” (Davis and Vest, 2020: 3-6).

Ultimately, Russia's aggression against Ukraine in February 2022 has eclipsed

all prior approaches. Simultaneously, relations between the Communist Bloc and the Western Bloc have reached their most strained point since the conclusion of the CW. This state of affairs has markedly politicized the Arctic climate, with Russia's revisionist posture in the region now being branded as extremist and oppressive by Western nations (Fakhoury, 2023: 2-4).

3.1.2. The Silent Hegemonic Power of the Arctic Council: The United States of America

When examining the integration of the USA into polar policies, it is evident that policies focused on Antarctica held prominence until the 1970s. However, with the declaration of National Security Decision Memorandum (NSDM) 144 on December 22, 1971, there was a shift towards advocating for active USA involvement in the Arctic, comparable to Russia (Clinton Digital Library, 1994: 2). This process continued under President Reagan, who approved National Security Decision Directive (NSDD) 90 on April 14, 1983, building upon the foundation laid by NSDM 144. The priorities delineated by the USA in the Arctic under NSDD 90 can be outlined as follows:

1. "To ensure the security and protect the interests of the USA in the Arctic.
 2. To ensure environmental security by creating a rational basis in the region.
 3. To develop scientific activities in the region.
 4. To promote mutual international co-operation in the Arctic region"
- (Interagency Arctic Research Policy Committee (IARPC), 1983: 1).

The primary mechanism through which the USA actively engages in Arctic policies and coordinates its actions within the AC is the IARPC. Established under the Arctic Research and Policy Act of 1984, declared on June 21, 1984, this committee comprises key federal agencies including the "USEPA, Department of Energy (DOE), Department of Commerce (DOC), Department of Defense (DOD), Department of State (DOS), Department of Transportation (DOT), Department of Health and Human Services (DHHS), Department of the Interior (DOI), the National Science Foundation (NSF), and the NASA." Together, these agencies implement policy and research initiatives crucial to the USA's activities in the AC (US Senate, 1984: 1-3).

As a result of these initiatives, the USA relinquished its historically passive role in the Arctic during the CW. Furthermore, since the early 1990s, the USA has adjusted

its Arctic policies, aligning with the 1982 UNCLOS. This shift aims to safeguard national borders and enable military operations when necessary. The weakened position of Russia following the CW significantly influenced the formulation of these policies (Coates and Holroyd, 2019: 245). The USA Policy on Arctic and Antarctic regions, encapsulated in Presidential Decision Directive/National Security Council-26 (PDD/NSC-26) signed by President Bill Clinton on June 9, 1994, was pivotal. This directive aimed to bolster support for the AC's formation and delineate USA policy objectives in the region. Key points emphasized in this regard include (Clinton Digital Library, 1994: 1).

1. “Determination of actions for national security in the Arctic in the context of the post-CW period.
2. Protection of Arctic fauna and flora.
3. Monitoring the sustainability of economic initiatives and utilisation of natural resources in the region.
4. Determination of institutional activities to support communities in the Arctic.
5. Involving communities in policy processes relevant to them.
6. Finally, monitoring the impact of the Arctic ecological balance at the global and regional level (Clinton Digital Library, 1994: 1-3).”

The Arctic policy pursued by the USA was underpinned by the National Security Presidential Directive (NSPD) and Homeland Security Presidential Directive (HSPD), known as NSPD-66 / HSPD-25, issued on January 9, 2009. This directive emphasized prioritizing national interests, particularly national security, and adopting a pragmatic approach in USA Arctic policies (The White House, 2009: 2-3).

During its chairmanship of the AC from 2015 to 2017, the USA implemented decisions aligned with NSPD-66 / HSPD-25 without introducing new policies under President Obama's administration. In this period, the AC focused on overarching issues such as mitigating climate change impacts, safeguarding the Arctic Ocean, and enhancing economic and living standards (Coates and Holroyd, 2019: 247). However, despite evolving understandings and initiatives in Arctic policy, the USA has maintained a notably passive stance in the region compared to Russia.

Recently, the National Strategy for the Arctic region, unveiled in October 2022, represents the USA's latest comprehensive policy framework delineating its strategic approach to the Arctic region from 2022 to 2032. This strategy outlines several key pillars essential to USA Arctic policy, including security imperatives, climate change

mitigation and environmental protection efforts, initiatives for sustainable development, and strategies promoting international governance and cooperative relationships (The White House, 2022: 2-3).

Consequently, the contest for hegemonic influence between Russia and the USA remains notably tense in the Arctic region. Historical events such as the USA invasion of Iraq in 2003, Russia's actions in Georgia in 2008, and the annexation of Crimea in 2014 have significantly politicized Arctic climate agreements and navigational treaties governing Arctic shipping routes. The 2014 crisis prompted discussions about Russia's removal from the AC, yet diplomatic relations persisted (Byers, 2017: 384-386). Since 2020, Russia has bolstered its military presence in the Arctic by deploying military personnel, along with advanced S-400 Air Defense Systems and Bastion Missile Systems. In parallel, the USA has responded by deploying F22 and F35 fighter aircraft, alongside intercontinental anti-missile systems, to the region (Leuprecht and Causey, 2022: 34).

The conflict between Russia and Ukraine in 2022 has notably exacerbated tensions in Arctic relations between these dominant geopolitical actors. This crisis has significantly politicized regional stability, prompting widespread international scrutiny and ongoing diplomatic challenges (The White House, 2022: 4). Following the outbreak of hostilities, on 3 March 2022, the remaining seven member states of the AC collectively agreed to suspend all collaborative engagements with Russia based on UN criteria and international legal norms. This suspension affects the ongoing AC Chairmanship held by Russia for the period of 2021-2023. Additionally, discussions arose regarding the potential exclusion of Russia from the AC; however, Russia's pivotal role as a preeminent Arctic power has primarily impeded such measures. As a result, numerous states have adopted a prudent approach, characterized by vigilant observation and a deliberate reduction in direct engagements with Russia (European Parliament, 2024: 6-7).

3.2. THE IMPACT OF RUSSIA'S AND UNITED STATES OF AMERICA'S POLAR POLICIES ON THE EVOLUTION OF THE ANTARCTIC TREATY SYSTEM

The ATCMs serve as a pivotal instrument ensuring the multipolar structure of the ATS, while also functioning as the primary forum for safeguarding the region's

fauna, flora, and security (Secretariat of the AT, 2024d: 1-2).

Following the signing of the AT in 1959, ATCMs were initially held biennially (biennially until 1994, and annually thereafter) with the participation of the treaty states. Subsequently, ATCMs assumed the role of an executive committee responsible for making various political and economic decisions concerning the region. The agenda of these meetings typically encompassed foundational aspects such as scientific research priorities in the region, the design of communication networks, the progression of diplomatic relations, regional security considerations, environmental standards and biodiversity preservation efforts, and strategies for sustainable management. Early ATCMs annual reports indicated minimal influence from global political crises on international politics (ATCM, 2017: 121-122).

3.2.1. Stage 1: The Genesis and Evolution of Antarctic Treaty System and Antarctic Treaty Consultative Meetings

ATCM 1: The inaugural meeting convened subsequent to the entry into force of the AT in 1961, following its signing in 1959. This assembly established a foundational set of norms essential for the protection of the region's fauna and flora (ATCM, 1961: 9).

ATCM 2: Detailed roadmaps were developed for the implementation of the regulations established during the ATCM 1 meeting. Concurrently, there was a renewed emphasis on the obligation of treaty parties to utilize the continent solely for scientific research and the promotion of peace (ATCM, 1962: 8-9).

ATCM 3: Agreed Measures for the Conservation of Antarctic Fauna and Flora were adopted to safeguard Antarctica's biodiversity and to facilitate compliance with environmental commitments (ATCM, 1964: 7-8).

ATCM 4: The establishment of 17 Specially Protected Areas (SPAs) commenced, aimed at enhancing conservation efforts and protecting critical Antarctic ecosystems (ATCM, 1966: 3-50).

ATCM 5: SCAR's involvement facilitated the determination of fishing zones and quotas in the Southern Ocean. Within this framework, a total of six Sealing Zones were designated across three distinct seas (ATCM, 1968: 15).

ATCM 6: Improvements were made to the communication systems among Antarctic research stations, recognizing the vital logistical and support needs of the

isolated region (ATCM, 1970: 15). Concurrently, national representatives began articulating their countries' political stances during meetings.

- Notably, both the USSR and the USA advocated for measures against pelagic sealing and tourism activities in Antarctica, emphasizing the region's role as a peaceful center for scientific endeavor (ATCM, 1970: 36-40).

ATCM 7: Enhancing transparency and information exchange among bases, ATCM mandated the sharing of data such as personnel numbers, vehicle and military equipment counts, scientist demographics, equipment ranges, transport methods, and statistics on species studied, killed, or captured (whether plant or animal) (ATCM, 1972: 12-14).

- The Soviet Union delegation referenced the 1964 document "Agreed Measures for the Conservation of Antarctic Fauna and Flora" concerning the protection of soil and air quality in the region (ATCM, 1972: 42).
- The USA delegation expressed that the AT had demonstrated significant success over an 11-year span and emphasized the importance of its continued support in safeguarding the Antarctic region (ATCM, 1972: 45).

ATCM 8: Seven Sites of Special Scientific Interest were identified, prompting inspections aimed at preventing detrimental impacts on scientific studies conducted within these locations. These sites include Cape Royds, Arrival Heights, Barwick Valley, Cape Crozier, Fildes Peninsula, Byers Peninsula, and Haswell Island (ATCM, 1975: 18).

- The Soviet Union delegation acknowledged that while all states expressed reservations about the exploration of mineral resources in Antarctica, a final decision should await comprehensive geological analysis of the region. This approach was perceived as a self-interested stance regarding Antarctic resources (ATCM, 1975: 60).
- In contrast, the USA delegation emphasized Antarctica's critical role in global climate stability and advocated for maintaining the AT to prevent conflicts of interest concerning existing or potential resources in the region. However, they also suggested keeping options open for future resource extraction, potentially benefiting all states (ATCM, 1975: 56).

ATCM 9: Following discussions in ATCM 8, a cautionary statement was issued to states regarding discourse on the use of mineral resources in Antarctica,

emphasizing the protection of the continent's environmental integrity and adherence to scientific research only, as stipulated in Article 4 of the AT (ATCM, 1977: 11-12).

- The Soviet Union delegation asserted that a thorough evaluation of the benefits and drawbacks should precede any studies on the exploitation of mineral resources in Antarctica (ATCM, 1977: 45).
- The USA proposed that future utilization of living marine resources in Antarctica by states should be regulated under ATCM auspices. They advocated for comprehensive studies within ATCM to gather species information, assess sustainable utilization quotas, and determine equitable resource allocation among nations. Additionally, they suggested conducting scientific studies led by experts to provide detailed assessments of Antarctic mineral resources and proposed establishing administrative frameworks to guide future resource management decisions (ATCM, 1977: 42-43).

ATCM 10: SPAs and Sites of Special Interest were increased (ATCM, 1979: 19-60).

- The Soviet Union delegation expressed openness to engaging in transparent dialogues with all other states within a structured framework for managing resources in the region (ATCM, 1979: 83).
- In contrast, the USA delegation reiterated the necessity of taking tangible steps to organize and sustainably exploit living resources in Antarctica. They emphasized the potential future use of other mineral resources, both on and beneath the surface, and advocated for the establishment of concrete institutions or structures to govern these activities (ATCM, 1979: 84-85).

As can be seen from the data, in the first ATCMs generally tried to be allocated the security policies necessary for the implementation of the AT and the agreements that would ensure this. However, it is seen that a mutual understanding was established between the states and the effects of the CW had not yet politicized the ATCM. Moreover, although there are differences of opinion between the USSR and the USA on how to manage and maintain the resources in Antarctica, there is no serious conflict. Nevertheless, states have expressed some self-interested views on the utilization of the continent's resources in some meetings, but there has been no serious initiative in this regard.

3.2.2. Stage 2: Emerging Legitimacy Concerns Amidst Ongoing Growth

In the second phase of the ATS' development, the CCAMLR was signed on May 7, 1980. This agreement marked the completion of the second tier within the Antarctic Agreements System, aimed at fostering cooperative efforts for the protection and sustainable management of Antarctic marine ecosystems (ATS, 1980: 13-14).

On the other hand, in the same year, a coalition led by Malaysia challenged the prevailing perception of the ATS as a multipolar agreement. This coalition argued that the ATS predominantly served the interests of its member states. In response to these concerns, a formal request was made to the UN to address the "Question of Antarctica" and to resolve the ongoing constitutional issues associated with the governance of the region. Consequently, this situation engendered ongoing skepticism regarding the transparency and inclusivity of the ATS, which has persisted over time (Hemmings et al., 2017: 3-4). Additionally, the ATCMs continued to be held regularly.

ATCM 11: Argentina, the host nation, which has a history of contentious relations with Western countries, particularly the UK, has advocated for the implementation of measures concerning the utilization of mineral resources on the continent. This issue, which has been a recurring topic in the last three ATCMs, is now being urged to proceed with enhanced transparency, under the scrutiny of the international community (ATCM, 1981: 26).

- The Soviet Union delegation contended that, despite ongoing challenges in Antarctica, the framework for addressing these issues should be grounded in practical cooperation rather than idealistic aspirations (ATCM, 1981: 44).
- For the first time, the USA formally proposed the establishment of a regulatory regime to strengthen the AT. Within this proposed framework, the USA delegation adopted a distinctly pragmatic stance, focusing on fostering international cooperation while safeguarding American ecological interests in Antarctica. This includes supporting mineral extraction activities and protecting USA interests within the AT (ATCM, 1981: 34).

ATCM12: The same regulations were continued to maintain the peaceful characteristics of the AT.

- The Soviet Union highlighted a distinct issue concerning the accession of new states to the AT. In this context, it was underscored that while each new member contributes to maintaining the continent's peaceful status, they also pursue

specific interests. It was thus conveyed to the new members that such interests must be acknowledged and factored into the broader discourse (ATCM, 1983: 98).

- Additionally, the concept of a regulatory framework for managing Antarctic resources has been revisited by the USA (ATCM 1983: 94).

ATCM 13: Other states, in addition to the Soviet Union and the USA, have also submitted requests concerning the utilization of Antarctic resources, which have been addressed as procedural question (ATCM, 1985: 28-29).

- The Soviet Union emphasized the importance of maintaining Antarctica as a demilitarized zone and asserted that the AT should remain unchanged, notwithstanding the influences of the CW (ATCM, 1985: 158-159).
- Conversely, the USA argued that the governance structure in Antarctica is evolving progressively and that the components under the ATS should be adapted accordingly. Additionally, it was noted that the process initiated with the CCAMLR will play a critical role in shaping the future management of Antarctic resources (ATCM, 1985: 135-136).

ATCM 14: The number of Consultative Parties to the ATCM has increased, leading to an expansion in the scope and breadth of the meetings (ATCM, 1987: 273-287).

- The Soviet Union delegation asserted that new members joining the ATS, like previous members, must adhere to international legal principles concerning demilitarization, territorial claims, international cooperation, and scientific inquiry in the region (ATCM, 1987: 194).
- The USA issued a congratulatory statement specifically to the newly admitted members, underscoring the importance of international cooperation (ATCM, 1987: 197).

ATCM 15: Several international organizations, including the WMO, the International IMO, and the IPCC, have begun to participate in ATCM and submit reports (ATCM, 1989: 3). Furthermore, discussions included the proposal to create a "White Book" to document the accomplishments achieved in Antarctica (ATCM, 1989: 9).

- The Soviet Union extended congratulations exclusively to the new acceding states to the AT and expressed a commitment to uphold the AT (ATCM, 1989:

170).

- The USA delegation did not express an opinion within ATCM 15 (ATCM, 1989: 123).

ATCM 16: Within Special ATCM 11-4 under ATCM 16, The Protocol on Environmental Protection to the AT or Madrid Protocol was added to the ATS and the basic skeleton agreements of the ATS were completed. With this protocol, Antarctica was recognized as a natural reserve and the extraction of mineral resources was prohibited (until 1948) in order to maintain environmental standards (ATCM, 1991a: 113-115).

- The Soviet Union delegation expressed support for the adoption of the Madrid Protocol (ATCM, 1991b: 195).
- The USA, in contrast, presented only recommendation tables outlining the objectives and principles for the development of the region, without providing further elaboration (ATCM, 1991b: 248-250).

ATCM 17: Following the decision to convene ATCMs annually, NGOs were granted observer status, enabling them to attend meetings and present their observations (ATCM, 1992: 8-9). Also, various organizations within the ATCM submitted their reports and endeavored to establish a framework for managing the increasingly complex structure of the system (ATCM, 1992: 51-100).

- USSR did not attend the meeting (ATCM, 1992: 111).
- The USA emphasized the importance of adhering to the Madrid Protocol, which governs Antarctica, a region containing a significant portion of the world's resource reserves. In this context, the USA Senate approved the Madrid Protocol, which had not previously been accepted. However, the call for the establishment of a dedicated secretariat of the AT with a formal institutional infrastructure for managing the Protocol was reiterated (ATCM, 1992: 171-172).

ATCM 18: The proposal to establish technical workshops was advanced by the SCAR and the COMNAP with the aim of enhancing regional activities, monitoring scientific research and environmental impacts, and disseminating these findings to the public (ATCM, 1994: 21-22). Stringent regulations have been implemented in response to the growing tourist activities in the region (ATCM, 1994: 41).

- Efforts to prioritize the ratification of the Madrid Protocol by Russia have been

incorporated into the national political agenda. Concurrently, Russia has emphasized the urgent need for the establishment of the Secretariat (ATCM, 1994: 91).

- Also, the USA has asserted that the ratification of the Madrid Protocol by all 26 Consultative Parties is essential and has indicated that it will sign the protocol in the future. Additionally, the USA has postponed the proposal to host the Secretariat within its jurisdiction, agreeing instead to the proposal for its establishment in Buenos Aires at the earliest opportunity (ATCM, 1994: 101).

ATCM 19: A systematic framework for addressing issues in Antarctica has been developed. In the initial phase, 'Measures', which are obligatory for all parties in accordance with Article 4 of the AT, will be established. Subsequently, initiatives to address these issues presented at the ATCM will be designated as 'Decisions.' Finally, the recommendations issued in the ATCM's final report will be categorized as 'Resolutions,' thereby establishing a systematic approach to problem-solving (ATCM, 1995: 89).

- The Russian Federation has announced that the process of ratifying the Madrid Protocol is complete and is poised for signature. Concurrently, there has been renewed emphasis on the establishment of the Secretariat and criticism of increasing tourist activities (ATCM, 1995: 176).
- Conversely, the USA has reiterated the necessity of implementing concrete measures within the timeline designated for the Madrid Protocol's entry into force (ATCM, 1995: 187).

ATCM 20: SPAs have been increased especially against increasing tourism activities (ATCM, 1996: 44-45).

- The Russian delegation announced that, owing to the country's adverse economic conditions, it has not been feasible to undertake the necessary measures in accordance with the National Antarctic Program. Consequently, the Madrid Protocol has yet to receive approval (ATCM, 1996: 132).
- In contrast, the USA commended the ratification of the Madrid Protocol by 22 of the 26 Consultative Parties. Although additional members have been encouraged to endorse the protocol, the USA has not yet completed its own ratification process (ATCM, 1996: 138).

ATCM 21: A 'Management Plan' has been established to audit all operations conducted within SPAs, in accordance with the Measures-Decisions-Resolutions framework introduced by ATCM 19. Within this framework, any state entering these regions is permitted to engage solely in scientific research for a specified duration, provided that environmental standards are not compromised. However, feasibility studies and research and development activities are explicitly prohibited (ATCM, 1997: 43).

- The Russian delegation has announced that the Russian parliament has ratified the Madrid Protocol. Furthermore, it has advocated for the implementation of the Antarctic Environmental Protection Program and underscored the necessity for the establishment of a dedicated AT Secretariat (ATCM, 1997: 165).
- Subsequently, the USA also ratified the Madrid Protocol shortly after Russia and reiterated the proposal for the creation of a Secretariat (ATCM, 1997: 171).

ATCM 22: Under the framework of the AT initiative, the Madrid Protocol of 1991 was enacted in 1998, instituting a ban on resource extraction in Antarctica until 2048. Additionally, the Protocol established the CEP, tasked with advising the ATCM on the Protocol's implementation (ATCM, 1998: 62-67).

- Russia has underscored the significance of adopting the Madrid Protocol and has introduced several mandatory procedures governing tourist activities in the region (ATCM, 1998: 192).
- The USA has also expressed support for the Protocol's implementation and reiterated its proposal for establishing a Secretariat in Buenos Aires. Concurrently, it has been announced that an expert group has been constituted to identify and address the associated responsibilities, thereby supporting the proposed Secretariat (ATCM, 1998: 198-199).

ATCM 23: In commemoration of the 40th anniversary of the AT and the full implementation of the Madrid Protocol on January 14, 1998, the Lima Declaration was promulgated, encompassing all states party to the AT framework. This declaration affirmed that the AT would remain in effect into the new millennium (ATCM, 1999: 39-40).

- To support the Madrid Protocol and to establish regulatory standards in areas under its jurisdiction, Russia introduced the "Procedures for Consideration and Issuance of Permits to Legal Entities and Individuals for Activities in the AT

Area" decision. Concurrently, Russia reiterated its call for the establishment of a Secretariat (ATCM, 1999: 133-134).

- In contrast, the USA emphasized the need for the creation of a Secretariat to effectively manage the obligations of the member countries and advance the decisions made by the ATCM and the CEP to a more developed stage (ATCM, 1999: 141-142).

ATCM 24: During the 2001 St. Petersburg meeting, convened at the request of the USA, initial efforts were undertaken to establish a Secretariat (ATCM, 2001: 31-32).

- Hosted by Russia, the meeting underscored the urgency of advancing preliminary steps towards the establishment of the Secretariat and called for its official formation at the earliest opportunity (ATCM, 2001: 61).
- Although the USA delegation participated in the meeting, it refrained from providing a formal stance or opinion on the matter (ATCM, 2001: 216).

ATCM 25: The St. Petersburg decision encompasses the establishment of the AT Secretariat, necessitating the consideration of a variety of factors including budgetary allocations, political privileges and immunities, joint cost-sharing mechanisms, team composition, workforce requirements, and action plans. Comprehensive studies have been conducted to assess these requirements, and the process of formulating a concrete structure for the Secretariat has commenced (ATCM, 2002: 13-14). Despite this positive development, it was determined that the issue of the Question of Antarctica, specifically concerning the legitimacy of the administrative structure in Antarctica, should be addressed before the UN General Assembly (ATCM, 2002: 9).

- Note: After the ATCM 25, the Opening Address was delivered exclusively by the host states of the meeting. In contrast, other participating states focused on implementing policies related to issues requiring resolution within the framework of the CEP, rather than presenting individual national policies.

ATCM 26: Efforts have been undertaken to elect the executive board of the Secretariat for a term of four years (ATCM, 2003: 43). However, selected candidates were required to demonstrate proficiency in one of the official languages of the ATCM—namely English, French, Russian, or Spanish. This requirement reflects the political influence exerted by certain countries within the ATCM framework, which

consists of 27 Consultative Parties (ATCM, 2003: 40-42).

ATCM 27: Based on the resolutions adopted during this meeting, the secretariat has been re-designated as the Executive Secretariat. Furthermore, the entities previously categorized as non-member parties have been officially termed "Non-Consultative Parties." Additionally, it was resolved that each country would appoint a single delegate to represent its interests (ATCM, 2004: 170).

ATCM 28: In response to the worsening environmental conditions in the region, regulations concerning liability have been significantly tightened. Consequently, if a state representative observes an environmental issue and fails to act, they will face penalties. Similarly, non-state actors are also subject to these punitive measures. In this framework, the Executive Secretariat has initiated the development of normative standards (ATCM, 2005: 66-68).

ATCM 29: The Executive Secretariat has commenced oversight of the financial resources and budget allocated for regional studies. In this context, budgetary assessments were conducted for the fiscal years 2004/05 and 2005/06, and a budget balance was established. Concurrently, a financial roadmap was developed for the budget allocation for the 2006/07 period (ATCM, 2006: 207-208). In this context, the budget allocated for the fiscal year 2004/05 was approximately \$700,000 (ATCM, 2006: 209). However, by the end of the fiscal year 2005/06, the funding allocated to the region had exceeded \$1 million (ATCM, 2006: 220).

ATCM 30: The International Polar Year (IPY) 2007-2008 was organized during the meeting, and the IPY Report for ATCM 30 was presented. This event marked the third occurrence of the IPY, following the inaugural International Polar Year of 1882-1883 and the second IGY of 1957-1958, during which the decision to establish the AT was made. The primary objective of this framework was to enhance and solidify inter-state cooperation in polar regions (ATCM, 2007: 32-34).

ATCM 31: Modifications have been implemented in the Rules of Procedure for ATCM. Consequently, States Parties to the Treaty are now designated as Consultative Parties, while those that are parties to the Treaty but not Consultative Parties are classified as Non-Consultative Parties. All other participants are categorized as 'Observers'; however, Observers do not possess direct administrative authority (ATCM, 2008: 323). Additionally, the jurisdiction of the Secretariat has been broadened, and it has been granted the authority to issue binding directives to the parties in specific circumstances (ATCM, 2008: 328).

ATCM 32: During the meeting, the Fiftieth Anniversary of the AT Declaration was commemorated, and the parties were congratulated on the progress achieved since the Treaty's adoption on December 1, 1959. Additionally, the number of states that were original signatories to the AT has grown from 12 to 49 by 2009. Furthermore, under the framework of the AT-AC Joint Meeting, the Washington Ministerial Declaration on the IPY and Polar Science was adopted. This declaration marked a collaborative effort between the AC and the states within the ATS to promote peace in the polar regions (ATCM, 2009: 161-163).

ATCM 33: During the meeting, the Headquarters Agreement for the Secretariat of the AT was formalized between the ATCMs and the Argentine Government. The key provisions of the agreement include:

1. **Impartiality of the Secretariat:** Given that the Secretariat is based in Argentina, it has been agreed that the Argentine government will refrain from exerting any pressure on the Secretariat.
2. **Administrative Hierarchy:** The Secretariat's headquarters, while situated in Argentina, are administratively independent and operate above all party states, including Argentina.
3. **Legal Framework and Immunity:** The Secretariat will function under Argentine domestic law, provided it is consistent with international law, and will be granted immunity.
4. **Tax Exemptions:** The Secretariat is exempt from all forms of taxation under Argentine domestic law.
5. **Support from Argentina:** The Argentine government has committed to providing comprehensive support for all the needs of the Secretariat (ATCM, 2010: 228-233).

These provisions signify a substantial enhancement in the authority and operational autonomy of the Secretariat.

ATCM 34: The "Declaration on Antarctic Cooperation on the Occasion of the 50th Anniversary of the Entry into Force of the AT was announced during the meeting. This declaration recognized and celebrated the tangible successes attained under the framework of the AT, which has been in effect since June 23, 1961 (ATCM, 2011: 177).

ATCM 35: With the participation of Malaysia and Pakistan, the number of states parties to the AT has become 50 (ATCM, 2012: 167). The ATCM Multi-Year Strategic Work Plan was formally adopted. In alignment with this plan, key issues and

priority areas will be identified, and an effective mechanism will be established to address these challenges over multiple years (ATCM, 2012: 237).

ATCM 36: As of 2012, the annual budget of the Secretariat exceeded \$1.3 million. Additionally, the frequency of meetings held by NGOs with observer status under the ASOC has increased (ATCM, 2013: 90-91).

ATCM 37: In correspondence from the ATCM Executive Secretariat to the IMO, strong support was expressed for the Polar Code. This code aims to enhance both the safety of maritime navigation in polar regions and environmental protection during such voyages (ATCM, 2014: 185).

ATCM 38: In the context of the Outcomes of the Intersessional Contact Group on Information Exchange Requirements, the sharing of specific information to mitigate environmental damage has been classified as a permanent requirement. The categories for information exchange now include compliance with the Madrid Protocol, oil and other pollutant spills, actions related to Environmental Impact Assessments (EIAs), waste management plans, marine pollution prevention, and other environmental actions as outlined in Annex 5 of the Protocol. Furthermore, the number of ATS member states has increased to 52 with the inclusion of Mongolia and Kazakhstan, and the number of ratifications of the Madrid Protocol has risen to 37 with the accession of Portugal and Venezuela (ATCM, 2015: 197).

As indicated by the data presented in there, the issue commonly referred to as ‘Antarctic Question,’ which emerged in 1980 and challenged the legitimacy of the administration of the continent, was addressed during the ATCM meetings in both 1980 and 2007. This issue involved criticism of certain aspects of the system's structure. However, the establishment of the Secretariat has mitigated these concerns to some extent. Despite these challenges, the foundational agreements of the ATS were successfully finalized, and the system has progressively expanded with the inclusion of additional states.

3.2.3. Stage 3: The Politicization of Antarctic Treaty System and Antarctic Treaty Consultative Meetings in Response to International Crises

ATCM 39: The Santiago Declaration was issued to commemorate the 25th anniversary of the Madrid Protocol, which was ratified in 1991. In this context, the Declaration called for enhanced cooperation among states that are parties to the

Protocol and urged the inclusion of those states that have yet to accede to it (ATCM, 2016: 183). Additionally, the Declaration emphasized the necessity for the IAATO and ATS entities to intensify their efforts in regulating the growing activities of tourists and non-state actors, particularly within the Antarctic Peninsula region (ATCM, 2016: 72-74).

ATCM 40: As of 2017, the number of ATS party states has reached 53 and the number of Madrid Protocol member states has reached 39 (ATCM, 2017: 19). It has been decided to incorporate the procedures outlined in the Guidelines for EIA in Antarctica (EIA Guidelines), as established by the CEP, into the CEP's framework. This integration aims to enhance the monitoring and management of environmental impacts, thereby strengthening measures for environmental protection in Antarctica (ATCM, 2017: 28).

ATCM 41: As of the 2017/2018 period, the budget for the Executive Secretariat was approximately \$1,500,000 (ATCM, 2018: 149). Furthermore, analyses were conducted to project potential budgetary expenditures within the framework of the Five-Year Forward Budget Profile for the period 2018–2024 (ATCM, 2018: 154).

ATCM 42: The Prague Declaration was issued to mark the 60th anniversary of the ATCMs. In this context, the Declaration drew upon the regulations established by the ATCMs as the foundation for implementing the procedures and principles of the ATS (ATCM, 2019: 210-211). Following the inclusion of Slovenia, the total number of member states rose to 54 (ATCM, 2019: 215).

ATCM 43: The Paris Declaration was issued to commemorate the 60th anniversary of the entry into force of the AT. In conjunction with this celebration, the Declaration committed to efforts aimed at limiting GW to below 2°C and striving to keep it from exceeding 1.5°C, in alignment with the objectives set forth in the 2015 Paris Agreement (ATCM, 2021: 153-154).

ATCM 44: With this meeting, the negotiations held solely on science and peace within the framework of ATCMs ended and the content of the meeting began to become politicized. First of all, during the session hosted by Germany, the German representative condemned Russia's invasion of Ukraine, characterizing it as inconsistent with both UN principles and the criteria of the ATS. The representative called for an end to the conflict and highlighted that the ATS had effectively maintained its non-political stance even during the CW (ATCM, 2022: 18). The Ukrainian delegation presented the report titled Implementation of the National Antarctic

Program of Ukraine in the Conditions of Hybrid Warfare and Open Military Aggression of the Russian Federation: Challenges and Lessons Learned. In this report, the Ukrainian delegation requested the following from the Executive Secretary:

1. “The termination of Russia’s voting rights in ATCM.
2. The cessation of all initiatives initiated or to be initiated by Russia.
3. The dismissal of Russia from projects it is involved in.
4. Finally, it was requested that no services be received from Russia or actors acting with Russia and that no services be provided in the same way” (ATCM, 2022: 23).

Many other actors have also openly supported Ukraine on this issue.

Conversely, the Russian delegation dismissed and refuted all accusations and threats presented. They contended that the conflict was a response to aggressive policies initiated by Ukraine against Russia and was therefore justified under Article 51 of the UN Charter. Additionally, China aligned itself with a pro-Russian stance, asserting that the ATCM should remain free from geopolitical considerations and expressed confidence that the conflict would eventually resolve under appropriate conditions (ATCM, 2022: 24).

ATCM 45: At the opening of this meeting, Russia's invasion of Ukraine was again protested (ATCM, 2023: 16). The Russian delegation accused the host country of violating the 2016 Revised Rules of Procedure for the ATCM, asserting that the meeting was being politicized. They contended that such actions should not systematically influence the conduct of other states. In response, Ukraine provided evidence of budget allocations for Antarctic programs that were redirected due to the conflict and highlighted that many Ukrainian scientists remained in the country to resist Russian aggression. Ukraine called for the ATCM to uphold its rights in this matter. China continued to support Russia on this issue (ATCM, 2023: 17). Despite the opposing arguments, Ukraine and its allies persisted in advocating for sanctions against Russia. However, due to the nature of the ATCM as a diplomatic forum, such measures could not be enacted (ATCM, 2023: 52-53).

Although the ATCM 46 meeting has not yet been held, Ukraine and 17 states have decided to block and veto Belarus from becoming a Collegial Party because of its pro-Russian moves (Ministry of Education and Science of Ukraine, 2024: 1-2). Considering these data, it is clear that ATCM is becoming increasingly politicized and that serious risks are emerging in the management of Antarctica.

3.3. THE INFLUENCE OF INTERNATIONAL ORGANIZATIONS, TREATIES, AND CRISES ON TERRITORIAL CLAIMS WITHIN THE FRAMEWORK OF INTERNATIONAL LAW

International law constitutes a framework designed to regulate the interactions among sovereign states through a system of laws and norms, aiming to adjudicate various factions within a framework of justice (Shaw, 2024: 1) The concept of sovereignty, as defined by the political philosopher Jean Bodin, refers to the absolute, permanent, and indivisible authority vested in a state within the confines of its territorial boundaries (Beaulac, 2003: 1-3).

Furthermore, according to Article 1 of the Montevideo Convention, one of the four essential criteria for statehood is the possession of a defined territory. This article stipulates that a state must have a specific geographic area to be recognized as a state (Montevideo Convention, 1933: 3). In this context, it can be posited that international law, in its most fundamental form, was established to safeguard the territorial integrity of states by affirming their sovereignty.

The operational framework of international law primarily hinges on the establishment of norms that states are expected to adhere to within the context of international organizations and agreements. These norms, grounded in a normative basis, often serve as advisory rather than mandatory for states. Furthermore, the absence of a centralized, authoritative enforcement mechanism, analogous to domestic legal systems, presents significant challenges in the implementation of these norms, agreements, and organizational standards as prescribed by international law (Krasner, 2002: 206).

Machiavelli's analysis of the international legal system posits that the accession of each state to the international system increases the proliferation of norms, thereby complicating the international framework. Consequently, the introduction of new states tends to alter the dynamics of the system in a manner that often undermines the equilibrium, as states act to safeguard their own interests (D'Amato, 2010: 84-85).

Similarly, Hans Morgenthau contended that the ultimate objective of international law is the creation of a World State or a World Authority mechanism. However, Morgenthau argued that such a goal is fundamentally unattainable due to the inherent conflicts of interest among hegemonic states. Within this context, international law is predominantly shaped by the distribution of power among states

(Elman and Jensen, 2014: 364-365).

Many situations throughout history can be presented as examples to show that international law or the organizations or agreements based on international law are generally shaped according to the interests of states and their quest for power. In this context, examples of situations where international law is ineffective are given in the below:

The Concert of Europe: This system was a system established after the devastating wars that Napoleon started in Europe (France) and ended in Russia, and envisioned cooperation and peace among the states in Europe. However, this system, which was effective between 1815-1914, began to lose its influence, especially with the establishment of the German Empire in 1871. The ongoing process ended in 1914 because of the actions led by Germany and Italy, which were late to the colonial race, and international law was rendered ineffective against state interests (Digital Encyclopedia of European History, 2019: 1-4).

The League of Nations: It was established in 1920 through the initiatives of the states that won WWI and the Paris Peace Conference of 1919. The aim of this structure was to end conflicts between states and to make the language of diplomacy effective and to build a multilateral democratic structure within the framework of Liberalism. However, the League of Nations did not have a punishment mechanism and could not prevent the arms race of the states, the rise of Fascism in both Germany and Italy due to the Great Depression in Europe and finally the territorial occupations initiated by the states to gain their interests, and the League of Nations was dissolved. In this context, international law remained ineffective within the framework of a second multi-international unit (The Editors of Encyclopaedia Britannica, 2024c: 1-7).

The UN and the UN Charter: The UN was founded in San Francisco in 1945 based on the UN Charter. The purpose of this organization is to bring together states from all over the world to ensure peaceful resolution of conflicts and to ensure peace by preventing territorial occupations (UN, 1945: 3). The UN's difference from previously established international structures was the establishment of the Security Council as a means of punishment and security. This council is equipped with the authority to make decisions to punish states and impose embargoes when deemed necessary (UN, 1945: 6-7).

In addition, the UN Charter includes 51 Articles that are based on the application of the 'Just War' principle in the event of inevitable wars in international relations. Accordingly, it is stated that a state must first have a just cause and purpose for going to war. At the same time, it was decided that civilians, wounded and prisoners should not be harmed in war (UN, 1945: 10-11).

However, despite all these practices and binding rules, many international wars and crises occurred after WWII and the criteria determined by the UN were mostly ineffective. The following can be given as examples of these wars:

- “Israeli-Palestinian Conflict, 1948 onwards,
- Korean War, 1950–1953,
- Vietnam War, 1955–1975,
- Falklands Conflict, 1982,
- Gulf War, 1990–1991,
- War in Afghanistan, 2001–2014,
- Iraq War, 2003–2011,
- Libya Conflict, 2011–present
- Syria Conflict, 2011–present
- Yemen Conflict, 2014–present (Imperial War Museums, 2024: 1-2”

The conflict that began with the Russian invasion of Ukraine in 2014, culminating in the direct annexation of Ukraine by Russia in 2022, illustrates a notable failure of the UN to prevent or resolve the hostilities. Both nations incurred significant losses because of the war, which has been characterized as the most intense confrontation between the Communist Bloc and the Western Bloc since the CW (Ray, 2024: 1-3).

Similarly, the Israeli-Palestinian conflict, which escalated on October 7, 2023, continues to be marked by severe violence and substantial civilian casualties. Despite the presence of UN mechanisms and regulations, their effectiveness in mitigating the conflict has been limited (Global Conflict Tracker, 2024: 1-2).

These instances underscore a broader trend wherein the international system is predominantly shaped by power struggles and national interests. The inability of international law and organizations to adequately address and balance these power dynamics highlights a critical limitation in their effectiveness. Consequently, territorial conflicts persist and escalate despite the framework of international law, reflecting a

highly politicized international system.

It is a serious risk that the climate of polarization between states that has emerged in the context of these conditions will also affect the political environment in the polar regions. The re-politicization of polar policies, which have been shaped by many conflicts of interest and territorial claims in the past, especially in a period when climate change is so evident, can turn into a serious risk that suppresses collective and cooperative understanding at the international system level.

3.4. ANALYSIS OF CLIMATE CHANGE'S IMPACTS ON POLAR GOVERNANCE SUSTAINABILITY THROUGH THE LENS OF REALISM

The concept of territory is a fundamental criterion for statehood, defining the spatial domain within which a state exercises its authority and governance. Within the framework of realist theory in international relations, territorial acquisition is identified as a principal driver of conflict and warfare throughout history (Choi and Eun: 2018: 143). According to realist theory, states are perceived as rational actors that seek to maximize their own interests within the international system. This pursuit of interests can lead states to undertake both legitimate and illegitimate actions. Consequently, the drive to secure and expand territorial holdings is a primary manifestation of this behavior, often resulting in territorial disputes and conflicts (Trifunović and Ćurčić, 2021: 76-77).

From the perspective of realism, the self-interested behavior of states can be effectively applied to analyze the risks associated with polar regions. Historically, states have pursued colonial ambitions in these polar areas, making territorial claims and seeking to advance their interests within the framework of power politics and the inherently chaotic international system. Realist principles become particularly relevant when examining the sustainable management of polar regions. The impacts of climate change have made the polar regions increasingly accessible, thus intensifying the competition among states for influence and resources in these areas. This heightened accessibility further complicates governance efforts. Additionally, the critical role of the polar regions in global climate regulation underscores the necessity for their protection through cooperative international efforts. Nonetheless, the pursuit of national interests by states often remains a dominant factor, potentially overshadowing collective efforts aimed at environmental preservation (Leuprecht and Causey, 2022:

64).

Firstly, the AC, established with the primary objective of coordinating policies in the Arctic region, lacks the authority to implement binding legal measures to ensure state compliance with agreements. Instead, the Council functions more as a forum for states to convene, address non-security-related issues, and articulate their positions. It does not possess the mandate or mechanisms to restrict states from exploiting resources within the Arctic region (Leuprecht and Causey, 2022: 44-46).

The structural dynamics of state interests in the Arctic have experienced significant disruption, particularly since 2014, following Russia's annexation of Crimea and subsequent aggression in Ukraine. The onset of the Russo-Ukrainian War in 2022 further intensified Russia's military activities in the polar regions. The accession of Finland and Sweden to NATO has exacerbated Russia's security concerns, leading to heightened securitization policies. This geopolitical context has prompted Russia to adopt more assertive strategies in both the Arctic and Antarctic regions. Also, Russia has engaged in collaborative efforts with China, despite the absence of a direct border between the two nations in the Arctic. Russia has extended various concessions to China in the Arctic while simultaneously pursuing bilateral policies with China in Antarctica (Boulègue, 2022: 2-3).

In Antarctica, a more cooperative approach has emerged, primarily guided by the principles of the ATS, which aims to protect the region's unique environment. Historical efforts have sought to designate Antarctica as a common heritage, mitigating the impact of national interests. Notably, in 1967, Malta's Ambassador Arvid Pardo advocated before the UN General Assembly that the seabed, ocean floors, and their resources should not be subject to national sovereignty but rather be considered a common heritage” of all humanity (UN, 2018: 4). In alignment with this principle, the 1982 UNCLOS established those areas extending 200 nautical miles beyond national jurisdictions, including the EEZ, are to be regarded as the common heritage of all humankind (Metych, 2024: 1-2).

Efforts to apply a similar framework to Antarctica and designate it as a common heritage have faced significant challenges. The rich mineral and energy resources present in Antarctica have engendered strong national interests that have impeded the realization of such a status. Conversely, the Arctic region, being partially within national borders, has not seen similar proposals for a common heritage designation (Herber, 1991: 395-396).

Nevertheless, the governance framework in Antarctica exhibits a more robust and structured system compared to that of the Arctic, featuring mechanisms designed to balance the interests of various states. Despite the presence of restrictive agreements concerning resource extraction in Antarctica, there remains a significant threat of a resource competition akin to that observed in the Arctic. Moreover, while the political dynamics in Antarctica are comparatively more constructive than those in the Arctic, there exists a potential risk that the ongoing global geopolitical crises could extend to the Antarctic region (Leuprecht and Causey, 2022: 61). Furthermore, despite the prohibition on the extraction of mineral resources, living marine resources in both the Arctic Ocean and the Southern Ocean are subject to intensive exploitation for commercial purposes (Leuprecht and Causey, 2022: 7).

In assessing the risks associated with polar governance, it is crucial to understand how effective mechanisms operate in both regions. In the Arctic, Russia functions as a predominant and singular hegemonic power. It exerts control over a wide array of subterranean and surface resources, effectively influencing which states have access to these resources. Additionally, Russia holds substantial authority over maritime navigation routes within the Arctic, enabling it to undertake various activities that may have adverse effects on the Arctic Ocean (Liu, 2023: 13).

In Antarctica, although no single hegemonic power oversees the governance of the region, dominant states still exert significant influence over the system. Recently, China's involvement in both the Arctic and Antarctic—through partnerships with Russian companies such as Gazprom, Lukoil, and Rosneft, as well as initiatives like the Polar Silk Road Project—along with its support for Russian policies, introduces substantial risks to regional governance (Liu, 2023: 14).

Finally, the ongoing tensions between the USA and Russia in the Arctic, coupled with their undisclosed territorial claims in Antarctica, present serious challenges to the governance of these regions. From a realist perspective, both states are likely to be influenced by each other's actions and will endeavor to maximize their own interests in any emerging crisis. Consequently, territorial disputes and conflicting interests are poised to shape the future governance of the polar regions (Tanaka et al., 2023: 390-396).

CONCLUSION

Since 1990, climate change has emerged as a significant factor within the realm of international security, increasingly recognized as a pressing threat. This phenomenon, shaped by cumulative anthropogenic activities dating back to the 1750s and significantly influenced by the Industrial Revolution, has been exacerbated by rising global temperatures. In this context, the polar regions play a critical role in mitigating the effects of climate change, primarily driven by GW. These regions are essential for maintaining climate stability; they help moderate global temperatures by cooling ocean currents through their glaciers. Additionally, glaciers in these polar regions, particularly in Antarctica, reflect solar radiation, thereby contributing to the regulation of the Earth's average surface temperature. Consequently, the polar regions are crucial to sustaining planetary life and preserving environmental equilibrium.

Nevertheless, territorial claims and interest-driven activities pose significant risks to these areas. In the Arctic, for instance, the territorial claims advanced by surrounding states, particularly Russia, and their pursuit of both subterranean and surface resources have led to considerable damage to local fauna and flora. The consequences of these activities have been compounded by GW, which has increased Arctic temperatures by over 2 degrees Celsius more than the global average. This has heightened the risk of the region's glaciers vanishing entirely by 2050.

Conversely, the Antarctic region benefits from the provisions of the ATS, which has generally safeguarded the continent through its moratorium on resource exploitation and its establishment of regulatory norms for various activities. While this has contributed to the protection of the continent, the presence of numerous state-operated research bases, though open to international scrutiny, often reflects national interests in their operational dynamics and activities. This raises concerns that, in the event of geopolitical tensions, these bases might be perceived as extensions of national territories, potentially leading to conflicts and the annexation of parts of Antarctica.

In the governance of the polar regions, it is evident that the AC lacks binding authority over member states. The Council functions primarily as a forum for discussing and determining regional policies but has been unable to prevent or mitigate some of the irreversible damage to Arctic fauna and flora. Additionally, the AC's operations are significantly influenced by international crises, with notable examples including the 2003 Iraq War, the 2008 Russia-Georgia War, the 2014 annexation of

Crimea by Russia, and the 2022 Russia-Ukraine War. Particularly, the 2014 annexation of Crimea sparked discussions about the possibility of expelling Russia from the AC, and the 2022 Russia-Ukraine conflict led to the suspension of negotiations, rendering the Council largely ineffective.

Contrarily, the ATS represents a more robust governance framework, bolstered by various international agreements and supporting organizations. Nevertheless, it has faced challenges in preventing geopolitical disputes, such as the conflict between Argentina, Chile, and the UK over the Falklands. Additionally, the ongoing issue known as “Question of Antarctica,” which has persisted since 1980 among the parties to the agreement, remains unresolved. Some states have criticized the ATS, alleging that its policies are dominated by hegemonic powers and that certain groupings have emerged within the agreement. This has led to questions regarding the legitimacy and fairness of the system.

However, the effectiveness of these two polar governance mechanisms in safeguarding the polar regions remains subject to debate. Historically, numerous international institutions and organizations, including the UN, have struggled to prevent wars and crises when state interests are at stake. Given this context, the potential success of polar governance mechanisms in the current climate is also questionable.

This study employs Realism theory to analyze the sustainability of these governance frameworks in the polar regions, considering both regional territorial claims and the impacts of climate change. The analysis yields several significant findings regarding the viability of these governance structures under prevailing geopolitical and environmental pressures.

First and foremost, many initiatives undertaken by states to address climate change are often hindered by conflicting national interests. According to Realism theory, state interests frequently override global concerns, even those that are crucial for the collective well-being of humanity. This prioritization poses a significant risk, as failure to mitigate climate change effectively could lead to severe consequences, including the potential for complete extinction of life in the future. In this scenario, the sustainable protection of the polar regions becomes crucial.

Nevertheless, the AC, established under the 1996 OD, has evolved into an institution predominantly shaped by national interests and heavily influenced by various international crises. This politicization impedes comprehensive studies on the

impacts of climate change exacerbated by state conflicts within the Arctic. Consequently, the risk that the Arctic region will experience the most severe effects of climate change in the future remains a likely and concerning prospect.

The ATS, established by the 1959 AT, initially demonstrated greater success in managing the continent's governance. However, the ATS began to experience increased politicization following the Russia-Ukraine War in 2022. For the first time, significant polarization among member states emerged. During recent ATCMs, numerous states condemned Russia's actions, with some even advocating for the suspension of activities within the ATCM. China, on the other hand, maintained a pro-Russian stance, arguing that the ATCM should remain a forum focused solely on Antarctic issues without delving into broader international conflicts. Meanwhile, Ukraine's veto of Belarus, which supported pro-Russian policies, intensified the East-West divide within the ATCM. This polarization raises the risk of further fragmentation and the formation of larger blocs if the crisis remains unresolved.

Given these developments, it is evident that both governance mechanisms for the polar regions are facing significant challenges. The ongoing environmental degradation in the Arctic, the contentious resource extraction activities, and the severe impacts of GW on the polar oceans underscore the limitations and inefficiencies of these mechanisms in effectively addressing the pressing issues confronting the polar regions.

On the other hand, the fact that the extraction and use of resources in Antarctica is still very costly is a determining factor in terms of protecting the fauna and flora of the continent. However, if initiatives such as the 'Polar Silk Road' initiated by China are successful and the extraction and use of resources in the region are profitable, there is a risk that the scenario experienced in the Arctic will also occur in Antarctica. At this point, it is also possible that hegemonic states, especially those with serious bases on the continent, will clash to obtain these areas.

Based on all these risk scenarios, it is of great importance that new initiatives occur in terms of international agreements, institutions and elements that are ineffective in controlling the elements in the region. In this context, the solution suggestions focused on by the study can be listed as follows. To enhance the governance of polar regions, several key measures should be implemented:

1. Establishing a Unified International Regime: Develop an international regime that centralizes the governance of both polar regions under a single, cohesive

authority. This regime should integrate the management and oversight functions for the Arctic and Antarctic regions to ensure consistent and coordinated policies.

2. **Inclusive Decision-Making:** Within the framework of the established regime, all states—regardless of their geographical proximity to the poles or their operational activities in the regions—should be granted voting rights and the opportunity to voice their opinions. This inclusive approach ensures that all stakeholders have a say in the governance processes affecting the polar regions.
3. **Implementing a Comprehensive Punishment Mechanism:** Create a robust enforcement mechanism akin to the UN Security Council, designed to address violations by all states, not just hegemonic powers. This mechanism should be empowered to impose sanctions or other measures to ensure compliance with the regime's regulations.
4. **Establishing Law Enforcement and Collective Security Units:** Allocate specific law enforcement resources, including military elements, from each member state to a collective security unit within the regime. This unit should conduct regular inspections and enforce compliance with established regulations to maintain order and safeguard the polar regions.
5. **Banning Resource Exploration and Extraction:** Implement a complete prohibition on all forms of resource exploration and extraction in both polar regions. Additionally, efforts should be made to minimize anthropogenic impacts to preserve the fragile fauna and flora of these regions.

These measures aim to create a comprehensive and effective governance framework that addresses both environmental and geopolitical challenges in the polar regions.

The recommendations presented herein, when assessed through the lens of Realism Theory, appear to be utopian in several respects. Within this theoretical framework, the pursuit of state interests often undermines the establishment of collective interests and cooperation. Nevertheless, if the environmental degradation resulting from climate change in polar regions, particularly Antarctica, remains unmitigated, all forms of life are imperiled. In this regard, states that prioritize the preservation of human life over national interests might eventually render the establishment of a cooperative regime feasible.

In the absence of a governing regime for these regions, it is highly probable that Russia will persist in its activities as an isolated and hegemonic actor, particularly in the Arctic, and may occasionally engage in conflicts with the UN. In Antarctica, the reservation and secrecy surrounding the territorial claims by both Russia and the USA pose a significant risk of these two dominant powers attempting to assert control over elements of the region in the event of a future crisis. Concurrently, the increasing influence of China is likely to alter the dynamics of this situation.

In summary, the available data indicates that conflicts in the region are highly politicized, particularly due to the accessibility of subterranean resources in the Arctic. While the extraction of resources in Antarctica remains prohibitively expensive for states, there is a prevailing suspicion that the ATS not only serves to protect the region but may also be delaying resource exploitation until more favorable conditions are met. This perspective is supported by the fact that both Russia and the USA refrain from asserting territorial claims over the continent and do not politicize its climate, which may be strategically motivated. However, as the impacts of climate change render the continent's resources increasingly accessible and logistics activities in the region intensify, the tranquility of the continent has also become subject to political considerations.

Historical experiences have consistently demonstrated that international law and agreements have often proven dysfunctional during their respective periods. During the crises of the WWI and WWII, as well as throughout the CW, states frequently violated established agreements. In the contemporary geopolitical context, the international system has become markedly politicized. For the first time since the conclusion of the CW, there has been a direct confrontation between Eastern and Western powers. The resurgence of such crises has the potential to exacerbate tensions at the poles, potentially triggering regional conflicts and escalating into wars driven by strategic interests.

Consequently, a dichotomy emerges for states: Either the worsening of climate change will be exacerbated by the continuation of territorial claims in the polar regions, Or a more sustainable future will be built by building a regime that enables the polar regions to be governed more effectively.

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