Environmental Protection System between the Antarctic Treaty System and the Arctic Regime: An Insight

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Abstract:- **Antarctica and the Arctic often regarded as polar regions located at the south and north poles respectively plays an important role of sunlight reflection in the climatic system. Such geo-metrological function of the polar regions ensures the maintenance of balance on planet earth hence the need for protection of the regions as global commons. Thus, the focus of this paper is to x-ray the rationale behind the differential approach in environmental protection of both regions by adopting an interdisciplinary approach which will give insight in the politico-legal regimes governing the regions. It will equally highlight why the Antarctic mechanism seems more systematic in relation to the Arctic regimes on environmental protection. It will conclude by advancing a proposition that will favour the desirability for more sustainable commitments on the part of state parties especially the Arctic States and the need for more state participation in governance of the regions.**

Key words: **Antarctic, Arctic, polar region, environmental protection, global common, environmental impact assessment, Arctic Council, IGY, Antarctic Treaty System, Antarctica.**

I. INTRODUCTION

There is a relative consensus among scientist and other scholars on the geo-metrological function of the polar regions on the earth planet. Thus, the polar regions provides a unique setting for the development of international law especially the law of the sea and international environmental law.[1] The Antarctic and the Arctic polar regions are governed by special rules of environmental protection which reflects the special nature of these areas and the prominent role they play in stabilizing regional and global environmental condition.[2] The Arctic encompasses a total area of approximately 14,056 million square kilometres and is located between the North Pole and latitude 60 degrees north and it include the Arctic Ocean, northern Alaska, Greenland, the Barents Sea, the Beaufort Sea, Hudson Bay and the tributaries of some rivers and water bodies originating in adjacent areas which falls within the territorial jurisdictions of Canada, Norway, Sweden, Finland, Denmark, Russia, Iceland, and the United States.[3] On the other hand, the Antarctic is located around the globe's South Pole, south of latitude 60 degrees south and it comprises an ice-covered landmass (permafrost) surrounded by a body of water called the Southern Ocean and it covers an area approximately 14 million square kilometres.[4] The vast nature and rich mineral resources as well as abundant bio-diversities of the polar regions calls for the need for their protection and in this regard, efforts has been made in both regions towards ensuring environmental protection. Again, the Arctic region contains a wide range of landscapes; plains, mountains, some very large significant rivers and lakes, rolling hills, huge stretches of tundra and the edge of the largest biome in the world, the taiga. The ice in the Arctic Ocean is largely formed from the frozen sea and contained by the surrounding land masses. It contains a large proportion of multi-year sea-ice that is 3-4 m (10-13 feet) thick with some much thicker ridges. Greenland has the largest ice cap in the Arctic (and second largest in the world after the Antarctic ice cap) other than this permanent ice is quite rare and relatively small in extent. Ice bergs form when the edges of the Greenland ice sheet reach the sea, most of the ice in the Arctic even in the summer is frozen sea ice.[5] Whereas the Antarctica is 98% covered in ice which means that away from coastal regions (and even including many coastal regions) the landscape is icy mountains, glaciers or smooth ice-sheet. There are no significant rivers and none that flow year-round, lakes are small, rare and often permanently frozen over, there is very little land vegetation, and no grassland, shrubs or trees. There are small areas of tundra on the Antarctic Peninsula and larger expanses on several Antarctic and sub Antarctic islands (though nothing like the huge areas found in the Arctic). The total surface area of Antarctica approximately doubles each winter as sea-ice forms around the coasts, in the summer this ice breaks up and drifts north mainly melting as it does so, Antarctic sea-ice is therefore mainly first year ice. The great ice sheets of Antarctica calve enormous ice bergs into the sea that are measured in square miles (sometimes hundreds or thousands of

[1] Joan E. Moore, *The Polar Regions and the Law of the Sea,* 8 Case W. Res. J. Int'l L. 204 (1976), 204.

[2] Philippe Sands *et al*, *Principles of International Environmental Law* (3rd ed., Cambridge University Press, 2014) 577.

[3] Lal Kurukulasuriya & Nicholas A. Robinson, *Training Manual on International Environmental Law*, United Nations Environment Programme Publication (2006) 281.

[4] Ibid. See also Article VI of the Antarctic Treaty, 1959.

[5] *Arctic and Antarctic - Comparisons & Similarities North Pole v South Pole,* THE COOL ANTARCTICA (May 28, 2017, 20.30 PM) http://www.coolantarctica.com/Antarctica%20fact%20file/antarctica%20environment/antarctic_arctic_comparison.php.

them), much of the ice in Antarctic waters especially in the summer is freshwater ice from glaciers and ice sheets.[6]

Background and Overview

Prior to the development of the Antarctic Treaty System on one hand, there has been several claims based on territorial control over the region. This is based on the fact that territorial control is one of the mean of establishing sovereignty in international law.[7] Hayton noted that notwithstanding the scanty and controversial records, the first landing on the mainland was probably by the United States in 1821 whereas Belgian interest dates from 1897-1899 being the scientific expedition to 'winter over' and the Swedish attempted the first deliberate wintering over around 1901-1904; the English came on board between 1907 and 1909 through penetration into the vast interior of the Antarctic.[8] Japan, Argentina, Chile, Australia, Russia and others equally laid claims to several parts of the Antarctic predicated on expedition or scientific research before the International Geophysical Year (IGY).[9] However, the United States refused to recognize any claim to the Antarctic at all hence the convening of the Washington Conference on Antarctica of 1958 wherein the US noted that her national plan of action is "dedicated to the principle that the uninhabited wastes of Antarctica shall be used only for peaceful purposes and not for political conflict; and that Antarctica shall be open to all nations to conduct scientific or other peaceful activities there."[10] Other claiming nations equally adopted similar perspective and this led to adopting of the Antarctic Treaty in 1959 marking the starting point of the Antarctic Treaty System. This is believed to have resolved the sovereignty question in the Antarctic region through "agreement to disagree"[11] thereby channeling the focus on demilitarizing the region and enhancing scientific research in the region.[12]

On the other hand, the Arctic region though constituting vast expanse of inhospitable territory between North America and Russia is occupied and surrounded by territorial states[13] (hereinafter referred to as Arctic States) and indigenous peoples. Denmark controls Greenland and its associated islands which dates to 1920 based on occupation and long exploration of mineral resources. Both US and Canada claims aspects of Beaufort Sea. Russia and other Arctic States equally based their claims on principles ranging from contiguity to sector principle.[14]

It is based on the fact that parts of the Arctic region fall within terrestrial states that there is no established or binding legal regime for environmental protection like the systematic Antarctic Treaty System thus necessitating the region being governed by law of sea, bilateral and multilateral agreements (soft law declarations) as well as domestic legislations of the Arctic States.[15] Again, the existence of permanent indigenous population in the Arctic equally makes it not feasible to freeze impactful human activities like in the Antarctic.[16]

II. ANTARCTIC TREATY SYSTEM (ATS)

2.1.1 Insight and Institution (ATCP and ATCM)

As an outcome of the 1958 Washington Conference on Antarctica, the Antarctic Treaty in 1959 was signed and ratified initially by states laying claims on the Antarctica.[17] The Treaty came into force in 1961 and twenty-seven states have become parties to it although with twenty-five states holding the Antarctic Treaty Consultative Party (ATCP) status which normally holds the Antarctic Treaty Consultative Meetings (ATCMs) annually now.[18] Thus, the omission of a permanent Secretariat to the Antarctic Treaty was a deliberate one because of the unwillingness of Australia, Argentina and Chile to accept any form of permanent administrative machinery during the original negotiations.[19]

[6] ibid.
[7] Malcolm N. Shaw, *International Law* (7th ed., Cambridge University Press, 2014) 352.
[8] Robert D. Hayton, *The Antarctic Settlement of 1959*, The American Journal of International Law, Vol. 54, No. 2 (Apr., 1960) 349-350.
[9] Ibid.
[10] 38 Dept. of State Bulletin 910 (1958) in Robert D. Hayton, *The Antarctic Settlement of 1959*, The American Journal of International Law, Vol. 54, No. 2 (Apr., 1960) 354.
[11] See generally *Article IV* of the Antarctic Treaty (1959) which provides thus: Nothing contained in the present Treaty shall be interpreted as: (a) a renunciation by any Contracting Party of previously asserted rights of or claims to territorial sovereignty in Antarctica; (b) a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica which it may have whether as a result of its activities or those of its nationals in Antarctica, or otherwise; (c) prejudicing the position of any Contracting Party as regards its recognition or non-recognition of any other State's rights of or claim or basis of claim to territorial sovereignty in Antarctica. No acts or activities taking place while the present Treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present Treaty is in force.
[12] Koivurova, Timo, *Environmental Protection in the Arctic and Antarctic: Can the Polar Regimes learn from each Other?* International Journal of Legal Information: Vol. 33: Iss. 2, Article 5 (2005), 206.
[13] The Arctic States include: Canada, Denmark (Greenland), Finland, Iceland, Norway, Russia, Sweden. and United States.
[14] Malcolm N. Shaw, *International Law* (7th ed., Cambridge University Press, 2014) 386.
[15] James Crawford, *Brownlie's Principles of Public International Law* (8th ed., Oxford University Press, 2012) 346.
[16] Ibid. 347.
[17] See *Paragraph 1 of the Preamble* to the Antarctic Treaty, 1959 which include the Governments of Australia, Argentina, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the United Kingdom, The United States and the USSR (now Russia).
[18] Donald R. Rothwell, *The Antarctic Treaty System: Resource Development, Environmental Protection or Disintegration?* Arctic, Vol. 43, No. 3 (Sep., 1990) 285.
[19] Karen Scott, Institutional Developments within the Antarctic Treaty System, The International and Comparative Law Quarterly, Vol. 52, No. 2 (Apr., 2003) 476.

Hence, an acceding state can participate in the ATCMs if it conducts substantial research activity pursuant to Article IX (2) of the Treaty. A state can also participate as non-consultative party. Timo noted that the ATCP conducted Antarctic policy through recommendations pursuant to the Treaty and such recommendations has force of bindingness internationally.[20] However, the Antarctic Treaty in Sands' view was not primarily intended to establish rules on environmental protection except for a number of its provision which contribute incidentally to environmental protection in the region.[21] It provides that the Antarctic is to be used for peaceful purposes only including scientific investigation but excluding military activities.[22] It also forbids nuclear explosions and disposal of radioactive waste materials in the Antarctic.[23] It is on the basis of Article IX (1)(f) of the Treaty which enjoins Consultative Parties to take extra measures relating to the preservation and conservation of living resources in the Antarctic that the entire ATS was further developed and strengthened.

2.2 ATS Environmental Legal Regime

2.2.1 Brussels Agreed Measures 1964

Having frozen the sovereignty issue over the Antarctica via the Antarctic Treaty, the next concerns faced by the ATCP were on how to protect the Antarctic environment. Sands stated that the ATCMs of the ATCP led to the foremost dedicated environmental measures with the adoption of the 1964 Brussels Agreed Measures for the Conservation of the Antarctic Fauna and Flora and it equally designated the Antarctic region as a Special Conservation Area wherein it also created Specially Protected Areas.[24]

The Measures prohibited the use of Antarctic animals except by permit[25] and each party shall take appropriate measures to minimize harmful interference within the Treaty area with the normal living conditions of the animals in Antarctic regions.[26] This is a famous starting point for protection of biological diversities under international law.

2.2.2 Seal Convention 1972

Still under the ATS, the Antarctic Seal Convention[27] was adopted in 1972 and it requires parties to limit harvesting of seals and grants total protection to certain species.[28] The Convention stipulated more obligations on exchange of information wherein parties are required pursuant to Article 5 to share information on any such measures with other parties through the Scientific Committee on Antarctic Research (SCAR).[29] The Convention protects marine biodiversity in the Antarctic and the obligation of parties are binding on them. It is a step further in the protection of marine living resources in the Antarctic.

2.2.3 CCAMLR 1980 and Marine Biodiversity

As a follow-up under the ATS, the CCAMLR[30] of 1980 was adopted, which underscores the commitment of the ATCP to ensure that the Antarctica is used only for peaceful purposes, principally scientific research, and for the conservation of its living resources.

The primary objective of the CCAMLR is the conservation (ensuring rational use) of marine living resources of the Antarctica and surrounding areas that forms part of the Antarctic marine ecosystem. Article II (3) of the CCAMLR provides detailed principles of conservation and these go a long way towards establishing criteria for rational use and provide a legal basis for the concept of sustainable development. While monitoring of the state of conservation, and scientific advice on conservation being provided by SCAR of the International Council of Scientific Unions,[31] the CCAMLR is administered by a Commission for the Conservation of Antarctic Marine Living Resources. The Commission have equally adopted several conservation measures dealing with the enforcement of fisheries regulations in the CCAMLR area.[32] Article XV (2)(d) of CCAMLR also provides for requirement of environmental impact assessment (EIA) albeit in embryonic form per Sands.[33]

Nevertheless, in relation to conservation of species in the Antarctic, Young argued that the above Conventions under the ATS have not achieved protection in the sense of preserving but simply set rules for exploitation thus demonstrating the

[20] Koivurova, Timo, *Environmental Protection in the Arctic and Antarctic: Can the Polar Regimes learn from each Other?* International Journal of Legal Information: Vol. 33: Iss. 2, Article 5 (2005) 206.
[21] Philippe Sands *et al, Principles of International Environmental Law* (3rd ed., Cambridge University Press, 2014) 579.
[22] See Article I and II of the Antarctic Treaty, 1959.
[23] Article V of the Antarctic Treaty, 1959.
[24] Philippe Sands *et al, op cit., 579.*
[25] Article VI of the Agreed Measures for Conservation Antarctic Fauna and Flora, Brussels, 13 June, 1964.
[26] Article VII of the Agreed Measures for Conservation Antarctic Fauna and Flora, 1964. See also the London Arrangement for Regulation of Antarctic Pelagic Whaling, 1962, 486 UNTS 263.
[27] Convention for the Conservation of Antarctic Seals, 1972.
[28] Lakshman D. Guruswamy, *International Environmental Law in a Nutshell* (4th ed., West Nutshell Series, 2012) 110.
[29] Lal Kurukulasuriya & Nicholas A. Robinson, *Trainin*g Manual on International Environmental Law, United Nations Environment Programme Publication (2006) 285.
[30] Convention on the Conservation of Antarctic Marine Living Resources, 1980.
[31] Lucas P. H. C., *International Agreement on Conserving the Antarctic Environment*, Ambio, Vol. 11, No. 5, The World's Protected Areas (1982) 285.
[32] See Conservation Measure 147/XIX, Provisions to Ensure Compliance with CCAMLR Conservation Measure by Vessels, Including Co-operation Between Contracting Parties; Conservation Measure 118/XX, Scheme to Promote Compliance by Non-Contracting Party Vessels with CCAMLR Conservation Measures; Conservation Measure 10-06 (2008), Scheme to Promote Compliance by Contracting Party Vessels with CCAMLR Conservation Measures; Conservation Measure 10-07 (2007), Conservation Measure 10-08 (2009), Scheme to Promote Compliance by Non-Contracting Party Vessels with CCAMLR Conservation Measures; and Conservation Measure 10-08 (2009), Scheme to Promote Compliance by Contracting Party Nationals with CCAMLR Conservation Measures.
[33] Philippe Sands *et al, op cit.,* 582.

world's ambivalence towards the Antarctica;[34] although he appraised the EIA reports mechanism required for any development and for scientific work.[35] In view of the need to maintain pristine nature and to ensure that the splendor, horror and mystery, and wilderness quality of the Antarctica are undiminished, the ATS further developed legal regimes governing mineral resources exploitation activities.

2.2.4 CRAMRA 1988

Unfortunately, the Convention on the Regulation of Antarctic Mineral Resources Activities (CRAMRA) 1988, did not enter into force owing to both Australia and France refusal to ratify it because of their opposition to commercial mining in the Antarctica. CRAMRA was initially targeted at regulating mineral prospect, exploration and development in the Antarctica and its provision concerning liability for environmental damage, EIA and dispute resolution per Lakshman will continue to serve as models for future international environmental law treaties.[36]

2.2.5 Madrid Protocol 1991

In 1991 the Protocol to the Antarctic Treaty on Environmental Protection (often regarded as 1991 Madrid Protocol) was adopted to adapt basically CRAMRA and to supplement the ATS in relation to environmental protection. Thus, the Protocol is a comprehensive regime for the protection of the Antarctic environment and dependent and associated ecosystems; and the intrinsic value of the Antarctica, including its wilderness and aesthetic value and its value as an area for the conduct of scientific research especially research essential to understanding the global environment.[37] Schatz noted that the Protocol represents a significant shift within the ATS and by putting minerals development off limits, it will ensure that the Antarctica is preserved in a virtually pristine state if properly implemented.[38]

The Madrid Protocol designated the Antarctica as a nature reserve and parties are enjoined to conduct activities in a way that avoids adverse effects on the Antarctic climate, weather patterns, or air and water quality; and to avoid significant changes in the atmospheric, terrestrial, aquatic, glacial, or marine environment as well as avoid causing detrimental changes in the distribution, abundant or productivity of species or populations of species of fauna and flora including endangered or threatened species or population of such species. Article 8 of the Protocol also incorporated precautionary approach in the ATS which strengthen the requirement of EIA for activities that has significance of potential impact.[39]

Article 11 of the Protocol establishes a Committee for Environmental Protection which provide advice and formulate recommendations to the parties about the implementation of the Protocol. The Protocol has six annexes dealing in fuller details several issues thus:

- Annex I (Environmental Impact Assessment)
- Annex II (Conservation of Antarctic Fauna and Flora)
- Annex III (Waste Disposal and Management)
- Annex IV (Prevention of Marine Pollution)
- Annex V (Area Protection and Management)
- Annex VI (Liabilities Arising from Environmental Emergencies)

However, the Protocol is not a perfect instrument argued Schatz, as it "permits activities that could negatively affect the environment, and it has a gap- the missing annex on liability for environmental damage plus some of its language being imprecise."[40] Blay contended on the other hand that the adoption of Madrid Protocol mark a significant turning point in international environmental law and in protection of the Antarctica in particular. The comprehensive approach adopted in the Protocol ensures a more systematic and effective strategy of protection especially a legally enforceable regime of protection for the Antarctic.[41]

There is no doubt that the ATS has developed an efficient and systematic mechanism in the protection of the Antarctic environment. Owing to the role of the Antarctica in atmospheric and ocean circulation of large horizontal temperature gradients by transporting heat poleward,[42] there is need for greater participation by the international community in strengthening the ATS which helps in minimizing climate change impacts and effects.

III. ARCTIC REGIME

The Arctic legal regime is not systematically developed as the ATS. This is practically because it is inhabited and falls within conflicting territorial waters of the Arctic states. Thus, the discovery of the North Pole in several quarters, amongst others the British and the Canadian raises the question whether the act of discovery gave the United States any right of possession over the North Pole.[43] The Arctic area is part of the sovereign land or marine territory of eight states- Canada, Denmark, Finland, Iceland, Norway, Sweden, Russia and the

[34] Young, Euan C., *Ecology and Conservation of the Polar Regions,* Ambio, vol. 18, no. 1, (1989) 33.
[35] Ibid.
[36] Lakshman D. Guruswamy, *opcit*., 111.
[37] See Article 3 of the 1991 Madrid Protocol to the Antarctic Treaty. See also the Preamble to the Protocol.
[38] Gerald S. Schatz, International *Environmental Law: Lessons from the Antarctic Protection Protocol*, Proceedings of the Annual Meeting (American Society of International Law), Vol.92, The Challenge of Non-State Actors (APRIL 1-4, 1998) 227. See also Article 7 of the Madrid Protocol, 1991.
[39] Lal Kurukulasuriya & Nicholas A. Robinson, *op cit*., 287.
[40] Gerald S. Schatz, *loc cit.*, 227.
[41] S. K. N. Blay, *New Trends in the Protection of the Antarctic Environment: The 1991 Madrid Protocol*, The American Journal of International Law, Vol. 86, No. 2 (Apr., 1992) 399.
[42] John Turner *et al*, *Antarctic Climate Change and the Environment*, A Contribution to the International Polar Year (2007-2008) 10.
[43] Balch, Thomas Willing, *The Arctic and Antarctic Regions and the Law of Nations*, The American Journal of International Law, vol. 4, no. 2, (1910) 265.

United States and its respective parts which are under the jurisdiction of these states and subject to their international legal obligation, including those relating to environmental protection.[44]

Nonetheless, the fact that native people and the fragile ecology call for responsible and humane treatment on the part of the littoral states, you see concentrated in the Arctic a focus of virtually all kinds of problems that are presented by legal regimes of ocean anywhere in the world.[45]

3.1.1 Key Issues

Flowing from the above, the most serious global environmental issue in the Arctic per Nowlan is the deposition of contaminants to the Arctic Eco-zones through long-range transport in the atmosphere, while the most important regional issues are mining, tourism, and military activities.[46] Also, another key environmental problem is warming ocean temperature, sea ice melting, evidence of climate change dramatically impacting wildlife and Arctic people.[47] Put in Oran's perspective, the burgeoning threats to the ecosystems of the Arctic have combined with growing realization that international security requires protection from environmental as much as military threats to engender a newfound interest in international cooperation intended to safeguard the Arctic environment.[48] It is also agreed that increased snowfall and ultimately the melting of Arctic ice caused by greenhouse effects are key concerns and as such, environmental disruption in the Arctic cannot be dismissed.[49] Thus, '*the magnitude of temperature increase in the Arctic is as twice as the global increase*.'[50]

Hence, in response to the erstwhile environmental threats to the Arctic, and on the initiative of Finland in 1989, the Arctic states began cooperation on measures to combating threats to the Arctic ecosystem.[51] This resulted in among other things the adoption of the Arctic Environmental Protection Strategy (AEPS) to ensure the protection of the Arctic environment and its sustainable and equitable development and subsequent establishment of the Arctic Council in 1996.

3.1.2 Arctic Governance and Arctic Council

The Arctic Council was established in 1996 as a multilateral forum to promote cooperation and political action and address most effectively the wide range of Arctic issues common to its members.[52] It functions as a permanent high level intergovernmental framework in which the eight Arctic nations can oversee existing Arctic multilateral activities.[53] By Article 1 of the Ottawa Declaration, the Arctic Council was set up as a leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic states, Arctic indigenous communities and other Arctic inhabitants on common Arctic issues (except military security) in particular on issues of sustainable development and environmental protection of the Arctic.[54]

Further, the Declaration recognized the Arctic states as the only members of the Council. In addition, six non-governmental organizations representing Arctic indigenous peoples have status as Permanent Participants and it was created to provide for active participation and full consultation with the Arctic indigenous peoples within the Council.[55] Observer status in the Arctic Council is open to non- Arctic states, along with inter-governmental, inter-parliamentary, global, regional and non-governmental organization that the Council determines can contribute to its work. The Arctic Council Secretariat was established to provide administrative capacity, institutional memory, enhanced communication and outreach, and general support to the activities of the Council.[56]The work of the Council is now primarily carried out in six Working Groups.[57]

- The Arctic Contaminants Action Program (ACAP) acts as a strengthening and supporting mechanism to encourage national actions to reduce emissions and other releases of pollutants.
- The Arctic Monitoring and Assessment Programme (AMAP) monitors the Arctic environment, ecosystems and human populations, and provides scientific advice to support governments as they tackle pollution and adverse effects of climate change.
- The Conservation of Arctic Flora and Fauna Working Group (CAFF) addresses the conservation of Arctic biodiversity, working to ensure the sustainability of the Arctic's living resources.
- The Emergency Prevention, Preparedness and Response Working Group (EPPR) works to protect the Arctic environment from the threat or impact of an accidental release of pollutants or radionuclides.

[44] Philippe Sands *et al*, *op cit.*, 591.
[45] Elliot L. Richardson *et al*, *Legal Regimes of the Arctic*, Proceedings of the Annual Meeting (American Society of International Law), Vol. 82 (APRIL 20-23, 1988) 315.
[46] Linda Nowlan, *Arctic Legal Regime for Environmental Protection*, IUCN Environmental Policy and Law Paper No. 44 (2001) 3.
[47] Ibid. 4.
[48] Oran R. Young, *Arctic Environmental Issues: Prospects for International Cooperation*, Current Research on Peace and Violence, Vol. 12, No. 3, Arctic Environmental Cooperation (1989) 105.
[49] Ibid. 106.
[50] *Environment and Climate, Arctic Council*, (June 15, 2017, 06.55 PM), www.arctic-council.org/index.php/en/our-work/environment-and-climate.
[51] Philippe Sands *et al*, *op cit.*, 592.
[52] Andrew Jenks, *Canada-Denmark-Finland-Iceland-Norway-Russian Federation-Sweden-United States: Joint Communique and Declaration on the Establishment of the Arctic Council*, International Legal Materials, Vol. 35, No. 6 (NOVEMBER 1996) 1382.
[53] Ibid.
[54] Ottawa Declaration on the Establishment of Arctic Council, Ottawa, Canada, Sept. 19, 1996.
[55] The Arctic Council: A Backgrounder, (June 15, 2017, 07.44 PM), www.arctic-council.org/index.php/en/about-us.
[56] Ibid.
[57] Arctic Council, (June 15, 2017, 03. 50 AM) http://www.arctic-council.org/index.php/en/about-us.

- The Protection of the Arctic Marine Environment (PAME) Working Group is the focal point of the Arctic Council's activities related to the protection and sustainable use of the Arctic marine environment.
- The Sustainable Development Working Group (SDWG) works to advance sustainable development in the Arctic and to improve the conditions of Arctic communities.[58]

3.2 Legal Bases for Arctic Environmental Protection

Arctic environmental cooperation was proposed around the time of ATS but were short-lived because of the Cold War. It was not until 1991 that Declaration on Protection of the Arctic Environment was signed by the Arctic states which adopted the Arctic Environmental Protection Strategy (AEPS). Although, there existed the 1973 Polar Bears Agreement prior to the AEPS.

3.2.1 Arctic Environmental Protection Strategy (AEPS)

The main purpose of the AEPS is to ensure the protection of the Arctic environment and its sustainable and equitable development while protecting the cultures of indigenous peoples. The key objectives of the AEPS are; protection of the Arctic ecosystem, protection, enhancement and restoration of the environmental quality and suitable utilization of natural resources, recognition and accommodation of the needs, values and practices of indigenous peoples, reviewing the state of the Arctic environment, and identifying, reducing and eliminating pollution.[59]

In addition, priority was given to identification of the various aspects of pollution by persistent organic pollutants, oil, heavy metals and radioactive materials for possible action to reduce their adverse impacts on the environment as well as conducting assessments of potential environmental impacts of development activities on the Arctic environment.[60] The AEPS fall short of stipulating concrete commitments and timelines for action by the Arctic states towards protection of the Arctic environment.[61]

Other legal bases for environmental protection of the Arctic are as follows.[62]

3.2.2 Arctic Monitoring and Assessment Programme (AMAP)

Arctic Monitoring and Assessment Programme, which was intended to assess the levels and impacts of key Arctic pollutants.

3.2.3 Emergency Preparedness, Prevention and Response Programme (EPPRP)

Emergency Preparedness, Prevention and Response Programme, which was to provide a framework to address the threat of environmental emergencies.

3.2.4 Conservation of Arctic Flora and Fauna (CAFF)

Conservation of Arctic Flora and Fauna, which was to facilitate the exchange of information and coordination of research into species and habitats.

3.2.5 Protection of Arctic Marine Environment (PAME)

Protection of Arctic Marine Environment, which was to take measures to prevent marine pollution. The above programmes are now coordinated by the Arctic Council.[63]

IV. DISCUSSIONS ON COMPARISM BETWEEN THE ANTARCTIC AND THE ARCTIC REGIMES

Flowing from the above and having stated the obvious afore, it is crystal clear that there are discrepancies between the two polar regions. Although both the Antarctic and the Arctic plays vital metrological function in the climatic system, their differences are x-rayed as below even though similarities in the two regions abound. Hence, the fragile environment of both regions is susceptible to damage from anthropogenic activities and both regions are not easily accessible and harsh with extreme climate conditions.[64] Special and unique biological diversities exist in both regions hence the necessity for environmental protection. Climate change also affects both polar regions a great deal though more prominent in the Arctic.

4.1.1 Geopolitical Dynamics

The geopolitical importance of the polar regions has gone from virtually nothing in the early 20th Century to region of significant importance in accordance with obvious facts. According to Rothwell, politically, polar sovereignty was relatively dormant issue in the second half of the 20th Century and disputes emerged in the Antarctica over territorial claims which were effectively resolved by the International Court of Justice and the adoption of the Antarctic Treaty.[65] Territorial claims equally exist in the Arctic.

While the Arctic is strategically located at the North Pole, the Antarctic is in the South Pole. The Antarctic is a single continent with no permanent human habitation, and no commercial or industrial activities; and resolution of political sovereignty over the Antarctic landmass and its offshore areas

[58] Ibid.
[59] Arctic Environmental Protection Strategy (Rovaniemi, Finland), June 14, 1991, para. 2.1.
[60] Lal Kurukulasuriya & Nicholas A. Robinson, *Trainin*g Manual on International Environmental Law, United Nations Environment Programme Publication (2006) 288.
[61] Ibid.
[62] Ibid.
[63] Article 1 (b) of Ottawa Declaration, 1996.
[64] Linda Nowlan, *Arctic Legal Regime for Environmental Protection*, IUCN Environmental Policy and Law Paper No. 44 (2001) 48.
[65] Donald R. Rothwell, *Polar Territorial and Maritime Sovereignty in the Twenty-First Century*, inChristine Chinkin, Freya Baetens (eds.), *Sovereignty, Statehood and State Responsibility*, (Cambridge University Press, 2015) 110. See also Antarctica Cases (UK v. Argentina, UK v. Chile), ICJ Pleadings (1956).

dominated legal discussion in the region.[66] The Arctic is dominated by the Arctic states legal systems and international law (especially law of the sea) including the protection of indigenous inhabitants. In the Antarctic, land rather than the ocean unlike the Arctic is the focus of the legal regime.[67]

Again, scholars believed that global climate change catapulted the Arctic into the centre of geopolitics as melting Arctic ice transforms the polar region from one of scientific interest into maelstrom of competing commercial, national security and environmental concerns.[68] Whereas the geopolitical claims over the Antarctic was contracted out and frozen under the ATS thereby focusing state parties' attention and resources towards development of the ATS which through moratorium equally froze significant anthropogenic activities except for peaceful scientific research purposes under strict environmental protection.

More so, climate change is having a significant impact on the geopolitics of the Arctic region as retreating sea ice is opening new shipping routes and access to vast natural resources (oil, natural gas, minerals) that lie underneath the seabed and this has brought issues of territorial claims and sovereignty to the fore for the Arctic circumpolar nations; hence these issues will likely dominate the geopolitics of the region for decades to come per a perspective.[69]

4.1.2 Nature of Legal Development

The Antarctic is governed by a treaty wherein claims and national territorial rights have been temporarily suspended.[70] Thus, the ATS create a context within which scientific and peaceful aims can coexist and take primacy over political and economic interests; but it is however of a limited timeline (50 years). It is based on this that the protection of the Antarctic environment has been a central theme in cooperation among the Antarctic Treaty Parties. Most other legal development under the ATS has been explicated afore.

Contrastingly, the Arctic being a semi-enclosed sea encircled by littoral states with overlapping sovereignty claims over continental shelves and delimitations of maritime boundaries; makes it quite difficult for Arctic states to adopt regional internal law framework like the ATS. This made Rothwell to assert that the difficulty in applying some important concept of international law is predicated on the fact that territorial sovereignty is difficult where it is impossible to demonstrate effective administrative control; hence the need for Law of Sea to fill in.[71] The UNCLOS[72] by article 76 streamlined the procedures for extending one's continental shelf from its shoreline. This tend to solve the territorial issues in the Arctic thereby shifting the attention to cooperation among the Arctic states for protection of the Arctic environment. Some of the legal measures adopted so far has been highlighted above even though they are mostly soft law approach unlike the ATS.

However, notwithstanding that there is no all-encompassing environmental protection regime in the Arctic, the region has become subject to ever increasing arrays of international legal instruments in Rothwell's perspective.[73] Now, the Arctic is governed by international customary maritime law in the form of UNCLOS and cooperation is fostered by the Arctic Council and bilateral agreement.[74] This implies that there might not be necessity for further holistic legal framework as some scholars suggested; hence the adoption of Illulissat Declaration by the Arctic coastal states in 2008 which maintained that there is no need to develop a new comprehensive international legal regime to govern the Arctic Ocean.[75]

4.1.3 Key Issues for Environmental Concern

There is no doubt that the key environmental protection issue in the Arctic currently is the impact of climate change on the Arctic ice resulting in ice melts of Arctic Ocean hence creating more propensity for human activities like creating more navigation access in the Arctic Ocean. This is without supervening negative impacts on the Arctic Ocean. Marine pollution from vessels is a likely offshoot of such climate change-induced human activities. Also, Olav noted that global warming undoubtedly affects the Arctic with particular force, with rebound effects further South; and also, threatened particularly by these developments are ice-dependent biological diversities- like ice algae, marine mammals and certain sea birds.[76] Mineral resources (oil and gas) exploitation (and its attendant pollution source) is yet another key issue in the Arctic. In this regard, the UNCLOS is applicable as provided under Article 207 which enjoins states

[66] Linda Nowlan, *op cit.*

[67] Ibid.

[68] Charles K. Ebinger and Evie Zambetakis, *The Geopolitics of Arctic Melt*, International Affairs (Royal Institute of International Affairs 1944), Vol. 85, No.6, Tackling Resource Challenges in the 21st Century: Avoiding Worst Case Scenarios (Nov. 2009) 1215.

[69] *The Geopolitical Status of the Arctic and the Antarctic*, (June 22, 2017, 02. 00 PM), http://www.educapoles.org/assets/uploads/teaching_dossiers_files/edd_16_en.pdf.

[70] Ibid.

[71] Donald Rothwell, *The Polar Regions and the Development of International Law*, (Cambridge University Press, 1996) 6.

[72] United Nations Convention on Law of the Sea, 1982. See also Article 234 which among other things empowered coastal states to adopt and enforce non-discriminatory laws and regulations for prevention, reduction and control of marine pollution from vessels in ice-covered areas within the Exclusive Economic Zone.

[73] Donald R. Rothwell, *International Law and the Protection of the Arctic Environment*, The International and Comparative Law Quarterly, Vol. 44, No. 2 (Apr., 1995) 284.

[74] Charles K. Ebinger and Evie Zambetakis, *op cit.*, 1231.

[75] Alexander N. Vylegzhanin, T*he Contemporary Legal Framework of The Arctic Ocean: Are there Impacts of Diminishing Sea Ice?* Rivista di Studi Politici Internazionali, Nuova Serie, Vol. 78, No. 3 (311) (LUGLIO-SETTEMBRE 2011) 380.

[76] Olav Schram Stokke, *Environmental Security in the Arctic: The Case for Multilevel Governanc*e, International Journal, Vol. 66, No. 4, The Arctic is hot, part II (Autumn 2011) 837-838.

to while adopting laws and regulations to prevent, reduce, and control pollution endeavour to harmonize their policies at the appropriate regional level. Olav further asserted that the Arctic Council has not made any attempt to create rules that are more ambitious or exercise greater normative pull other than those already existing in broader international forum coupled with the fact that even the soft law standards in the Arctic Offshore oil and gas Guidelines are merely existing legal instruments.[77] Military activities is another key issue is the Arctic although it does not fall within the mandate of the Arctic Council pursuant to Ottawa Declaration[78] thus leaving it at the corridors of law of nations or *jus gentium*.

In relation to the Antarctica, some of the key issues as above are resolved under the ATS as seen afore though climate change is equally affecting the region. Thus, changes in both temperature and precipitation have already had delectable effects on limnetic ecosystem through the alteration of surrounding landscape and of the time, depth and extent of surface ice cover, water body volume; hence, predicted impacts of such changes will be varied. [79] Rights of indigenous people is yet another key issue in the Arctic.[80]

4.1.4 Politico-Economic Interests

Economic interests and opportunities is believed to be predicated on geopolitical stakes in the polar regions, [81] especially in the Arctic as such interest has been frozen under the ATS and CRAMRA in the Antarctica. As one of the key issues in the Arctic resulting partly from climate change impact and advancement in maritime technology, an opening of certain economic opportunities (including alternative transportation and shipping routes- the Northwest Passage, the Northern Sea Route and the Arctic Bridge) and also large mineral resources exploitation are in prospects; thereby resulting in a new environmental reality unleashed by a commercially -driven run on the Arctic often known as 'land grab in the Arctic' or 'new gold rush in the High North' among the five circumpolar states striving for substantial geo-economic and geopolitical shares in the Arctic with possible territorial disputes. [82] Berkman and Young encapsulated it clearly by noting that the Arctic Ocean is crossing an environmental threshold expected to transform it from a perpetually ice-covered region to a seasonally ice-free sea within the next few decades and this environmental change has awakened global interest in the Arctic energy, fishing, shipping, and tourism.[83]

Again, economic interest in Antarctica is not left out but at least for now. China, South Korea and other nations are rushing to establish a presence in Antarctic before the Antarctic Treaty is reviewed in 2048.[84]

4.1.5 Governance and State Participation

Some of the issues of governance in the polar regions has been highlighted above. In the Arctic, it is not only subject to the governance of the Arctic Council but the UNCLOS system as it relates to the Arctic Ocean in view of Article 76 of the Convention. Also, the Arctic is subject to the governance of national states; Canada for instance is extending the reach of its Arctic Water Pollution Prevention Act [85] pursuant to Article 234 of UNCLOS. The UN Fish Socks Agreement, 1995 equally regulate fishing in the Arctic. As per state participation, only the Arctic states and several indigenous people participate in the Arctic Council affairs with voting rights except some other states including; China, India, Japan, and South Korea who are merely permanent observers[86] with no voting right. China's interest could be deemed economic-based and climate change impact. Whereas the Antarctic Treaty Consultative Parties governs the affairs of the Antarctica under the ATS through the ATCMs as there is no Secretariat under the Treaty. As far as any state can show significant scientific research, participation is allowed in the ATCMs. Hence, the ATCP set policy by adopting recommendations at annual meetings- ATCMs.[87]

V. CONCLUSION

As have shown above, the ATS in ensuring environmental protection *ab initio* designated it as a nature reserve and virtually froze all anthropogenic activities except scientific research. The freezing of territorial claims under the ATS could be said to be the *raison d'être* for its effectiveness in ensuring Eco-protection coupled with lack of human habitation thereby serving as a microcosm for the development of international environmental law; for example, by incorporating the concept of EIA into global IEL. The Arctic regime equally stands out as a good model for balancing sustainable development and economic development. Even though, development of new holistic legal regime is not in view, more Eco-protection can be achieved through more time-bound commitments on the part of Arctic states and incorporating several workable models of the ATS, national laws and international law in tackling climate change

[77] Ibid., 847.
[78] See Article 1 (a) of the Ottawa Declaration which footnoted that the Arctic Council should not deal with matters related to military security.
[79] John Turner *et al*, *Antarctic Climate Change and the Environment*, A Contribution to the International Polar Year (2007-2008) 297.
[80] See the Ottawa Declaration, 1996, Article 2.
[81] *The Arctic, Antarctic and Geopolitical Maneuvering,* (June 22, 2017, 03. 30 PM) http://www.abc.net.au/radionational/programs/futuretense/the-arctic2c-antarctic-and-geopolitical-manoeuvring/5418260#transcript.
[82] Anis H. Bajrektarevic, *Arctic & Antarctic: Geo-Economic Opportunity, Geopolitical Dilemma*, (June 22, 2017, 03. 24 PM) http://moderndiplomacy.eu/index.php?option=com_k2&view=item&id=351:arctic-antarctic-geo-economic-opportunity-geopolitical-dilemma.
[83] Paul Arthur Berkman and Oran R. Young, *Governance and Environmental Change in the Arctic Ocean*, *Science*, New Series, Vol. 324, No. 5925 (Apr. 17, 2009) 339.
[84] *Is Mining in Antarctic Inevitable?* (June 22, 2017, 03. 30 PM) www.abc.net.au/radionationalprograms/futuretense/5433498.
[85] Paul Arthur Berkman and Oran R. Young, *loc cit.*, 339.
[86] Klaus Dodds, *Environment, Resources, and Sovereignty in the Arctic Region: The Arctic Council as Regional Body*, Georgetown Journal of International Affairs, Vol. 14, No. 2 (Summer/Fall 2013) 29.
[87] Linda Nowlan, *op. cit*., 42.

impacts, indigenous peoples' rights, marine pollution, and challenges of possible shipping activities as well as military activities.

Again, the Arctic States should adopt more sustainable developmental measures just like the ATS and if possible step down on adverse resource exploitation in other to restore the ecological balance of the Arctic by setting a target and if possible by incorporating states that will be likely affected by melting of Arctic ice in it decision making process rather than merely as an observer.

CREATIVE CONTRIBUTION

There is no doubt that the international community appreciates the key functions of polar regions in the climatic system. However, climate change is really affecting the polar regions especially the Arctic more than other parts of the globe according to available data. It is desirable for more state participation in the affairs of polar regions to ensure more commitment in climate change mitigation measures. Again, Arctic States should incorporate sustainable development just like the ATS and if possible step down on adverse resource exploitation in order to restore the ecological balance of the Arctic by setting a target and if possible by incorporating states that will be likely affected by melting of Arctic ice in it decision making process rather than merely as an observer.

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