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Balancing Responsibilities: The Integration of CBDR in the Montreal Protocol

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Abstract

The principle of common but differentiated responsibilities (CBDR) has been a central concept in international environmental politics, recognizing the shared yet distinct responsibilities of developed and developing countries in addressing global environmental challenges. This study delves into the practical application of the CBDR principle within the international ozone regime, primarily established by the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol. Employing a content analysis of key international treaties, official reports, and academic literature, this paper reveals how the CBDR principle is operationalized through specific mechanisms like trade bans, phasedown/phaseout schedule postponements for developing countries, and the Multilateral Fund. It argues that the tangible incorporation of CBDR into the regime's framework is a pivotal factor in its success, enhancing global participation and compliance, particularly among developing countries.

Keywords: Montreal Protocol, international environmental politics, international ozone regime, common but differentiated responsibilities, international environmental cooperation

Sorumlulukların Dengelenmesi: CBDR'nin Montreal Protokolü'ne Entegrasyonu

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Öz

Ortak fakat farklılaştırılmış sorumluluklar ilkesi (CBDR), uluslararası çevre politikasının temel bir kavramı olarak gelişmiş ve gelişmekte olan ülkelerin küresel çevre sorunlarına karşı paylaşılan ancak farklı sorumluluklarını tanımlamaktadır. Bu çalışma, Ozon Tabakasının Korunmasına Dair Viyana Sözleşmesi ve Montreal Protokolü tarafından kurulan uluslararası ozon rejimine CBDR ilkesinin nasıl entegre olduğunu incelemektedir. Bu makale uluslararası antlaşmalar, resmi raporlar ve akademik literatür kullanılarak, CBDR ilkesinin, ticaret yasakları, gelişmekte olan ülkeler için aşamalı sona erdirme takvimi ertelemeleri ve Çok Taraflı Fon gibi belirli mekanizmalar aracılığıyla

nasıl işler hâle getirildiğini ortaya koymaktadır. Çalışma, CBDR ilkesinin ozon rejiminin çerçevesine somut bir şekilde dahil edilmesinin, özellikle gelişmekte olan ülkeler arasında küresel katılımı ve uyumu artıran, rejimin başarısında belirleyici bir faktör olduğunu savunmaktadır.

Anahtar Kelimeler: Montreal Protokolü, uluslararası çevre politikası, uluslararası ozon rejimi, ortak fakat farklılaştırılmış sorumluluklar ilkesi, uluslararası çevre işbirliği

1. Introduction

The principle of common but differentiated responsibilities (CBDR) is a fundamental concept within the purview of international environmental law. In essence, this principle posits that every country bears responsibility for the deterioration of the global environment. However, the historical pattern of this phenomenon has not been uniform among countries. CBDR recognizes the historical relationship between higher levels of development and the damage to the global commons and expresses responsibility-sharing accordingly (Epstein C., 2015). Hence, the principle of CBDR expresses the shared yet distinct responsibilities of developed and developing countries in combating environmental change, considering their historically divergent developmental trajectories.

The pace of global environmental degradation gained momentum in the aftermath of the industrial revolution, as the magnitude of adverse externalities engendered by economic pursuits intensified. Negative externalities refer to the transference of costs stemming from economic activities to unrelated parties. Pollution caused by economic activities serves as a case in point (OECD, 2008, p. 177). Throughout 19th and 20th centuries, contemporary developed countries have enjoyed the prerogative of transferring the burden of externalities on the global commons without any restraints or accountability as they pursued industrialization. This practice has exerted undue pressure on the global commons. Conversely, owing to the exponential rise in global environmental degradation following the industrial revolution, policies aimed at preventing environmental damage have emerged at the national level. Concomitantly, international cooperation on environmental issues has advanced since the latter half of the 20th century (Mitchell, 2002).

Regulations implemented at national and international levels seek to halt and forestall further global environmental degradation. These regulatory policies have curtailed developing countries' capacity to transfer the burden of externalities on the global commons unrestrictedly, resulting in additional costs for their economies, which contrasts with the historical advantage enjoyed by developed countries. Thus, the unbridled generation of negative externalities on the global commons by developed countries while reaping economic benefits gives rise to questions of equity and equitable responsibility-sharing between developed and developing countries. The concept of CBDR, while formally articulated in the 1992 Rio Earth Summit, finds its roots in the 1972 United Nations Conference on the Human Environment held in Stockholm (A/CONF.48/14/Rev.1, 1972). This conference marked the first significant international meeting focused on environmental issues and set the stage for future environmental policies and principles, including CBDR. Although not explicitly named, the essence of CBDR was present in the discussions and outcomes of the Stockholm Conference. It laid the groundwork for recognizing that different countries have varying capabilities and responsibilities in addressing environmental degradation, considering their stages of development and contributions to global environmental issues (A/CONF.48/14/Rev.1, 1972, pp. 3–4). This early acknowledgment of differentiated responsibilities paved the way for the formal introduction and acceptance of the CBDR principle in later international environmental treaties and agreements, reflecting a growing understanding of the

complexities and inequalities in global environmental challenges. Subsequently, this principle has evolved into one of the central pillars of international environmental cooperation.

In this context, the study argues that the international ozone regime established by the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol puts the principle of CBDR into operation and that the CBDR principle, which is functional in the Convention and Protocol, is embedded in the architecture of the international ozone regime, predating its formal articulation at the 1992 Rio Summit. Tangible applications of the principle of CBDR in the Montreal Protocol are as follows: (i) trade bans, these bans emphasize shared responsibility; (ii) The existence of Article 5 status for developing countries, (iii) the possibility of postponing the ozone depleting substances (ODS) phaseout schedule for the countries receiving this status, (iv) the financing of the ODS phaseout projects of the countries receiving Article 5 status by the Multilateral Fund consisting of grants from developed countries. (ii), (iii), and (iv) differentiate the developing states' responsibilities with more favorable schedules and financing options. The fact that the CBDR principle is embedded in the regime with mechanisms established with tangible provisions has been one of the reasons for the success of this regime in the later period.

2. Methodology

This study adopts a qualitative research approach, focusing on primary sources. The approach is aimed at understanding and interpreting the operational aspects of the CBDR principle within the international ozone regime. In this context, the study focuses on the period during which the regime was designed to demonstrate how CBDR was incorporated into the regime. The primary sources for this research are a collection of documents including international treaties (specifically the Vienna Convention and the Montreal Protocol), official reports, and resolutions from relevant bodies such as the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO). Secondary sources include academic literature, journal articles, books, and other scholarly writings that discuss international ozone regime.

The content analysis focuses on identifying, examining, and interpreting the provisions and mechanisms within the Vienna Convention and the Montreal Protocol that operationalize the CBDR principle. Special attention is given to understanding how these provisions incorporate trade bans, phasedown/phaseout schedule postponements, and the structure and functioning of the Multilateral Fund.

3. Incentive and Sanction Architecture of the International Ozone Regime in terms of CBDR

During the 1970s, scientific studies identified potential mechanisms for the depletion of the ozone layer in the atmosphere (Stolarski & Cicerone, 1974, p. 1610). This discovery initiated the development of regulatory policies in various countries regarding the use of aerosols, particularly in USA and Nordic countries (Parson, 2003, pp. 39–50). In the following decade, the international coordination of scientific studies and the implementation of these regulatory policies gained momentum, culminating in the establishment of the Vienna Convention. This Convention provided a cooperative framework for protecting the ozone layer through international cooperation in scientific research, information exchange, and policy development ('Vienna Convention for the Protection of the Ozone Layer', 1985).

The Vienna Convention laid the foundation for the later development and adoption of the Montreal Protocol, which established binding measures to phase out the production and consumption of ODS in 1987. Notably, the Convention's initial framework did not incorporate obligatory measures for ODS elimination. However, the principle of CBDR was articulated in its text, acknowledging the specific circumstances and requirements

of developing countries ('Vienna Convention for the Protection of the Ozone Layer', 1985). The Montreal Protocol, formulated in response to the discovery of the Antarctic ozone hole (Farman et al., 1985) and ensuing public concern, built on the creation mechanism outlined in the Vienna Convention.

In response to this global challenge, it became necessary to eliminate the use of ODSs worldwide. In this context, efforts have commenced to develop a prescriptive framework dedicated to the phasedown of ODSs, drawing upon the protocol formulation mechanisms established by the Vienna Convention. Consequently, this led to the emergence of the Montreal Protocol (UNEP/WG.151/2, 1986; UNEP/WG.167/2, 1987; UNEP/WG.172/2, 1987). The Montreal Protocol's implementation necessitated the transformation of user sectors reliant on ODS to alternative technologies. This transformation required a comprehensive program encompassing both ODS producer sectors and ODS user sectors, such as Heating, Ventilating, Air Conditioning (HVAC), and refrigeration industries. For these sectors, converting to non-ODS refrigerant gases often necessitates technological changes in equipment (UNEP, 1999). The obligations under the Protocol have highlighted the need for producing sectors to manufacture chemicals that are not ODS but can perform similar functions in related products. This means user sectors must procure these alternative chemicals and adapt their equipment to new technologies, a coordinated effort between producers and users to ensure a smooth transition while meeting industry needs.

In order to achieve a global phasedown[1] of ODSs the incentive and sanction architecture of the Montreal Protocol was based on three core pillars embedded in Article 4 and 5: trade bans, phasedown schedule postponements for developing countries, and the Multilateral Fund (UNEP, 2020). An examination of these pillars also sheds light on the self-enforcement mechanism of the Montreal Protocol, illustrating how it implements this principle in practice.

3.1. Trade Bans: A Common Responsibility

Article 4, entitled 'Control of Trade with Non-Parties' plays a pivotal role in regulating trade in controlled substances with states that have not ratified the Protocol. This Article aims to bolster the global commitment to reducing ODSs by utilizing trade-related measures. A fundamental aspect of Article 4 is its mandate that, within one year following the enforcement of the Protocol, all parties must implement a ban on importing controlled substances from non-participating states ('Montreal Protocol on Substances That Deplete the Ozone Layer', 1987). This provision serves a dual purpose: it restricts market access for controlled substances from non-party states and simultaneously serves as an incentive for these states to join the Protocol, thereby fostering its universal adoption Furthermore, in an effort to ensure that the global reduction in ozone-depleting substances is not compromised, the Protocol mandates, effective from January 1, 1993, that parties prohibit the export of controlled substances to non-party states ('Montreal Protocol on Substances That Deplete the Ozone Layer', 1987). This measure is instrumental in preventing the diversion of these substances to countries outside the regulatory framework of the Protocol.

Article 4 also addressed the need to identify and regulate products containing controlled substances. Within three years of the Protocol's entry into force, parties are tasked with developing a list of such products. Subsequent to the annex's effectiveness, parties are expected to ban the import of these products from non-party states within a year, barring any objections to the annex ('Montreal Protocol on Substances That Deplete the Ozone Layer', 1987).

Article 4 additionally mandated that parties, within five years, assess the feasibility of prohibiting or restricting imports from non-party states of products manufactured using, but not containing, controlled substances. Upon determining feasibility, a corresponding list of such products is to be compiled. Subsequently, parties are obligated to enact bans or

[1]*The Montreal Protocol initially set phasedown targets for ODSs. However, following the 1990 London Amendment, these targets transitioned into a total phaseout objective.*

restrictions on these imports within one year following the annex's implementation ('Montreal Protocol on Substances That Deplete the Ozone Layer', 1987). A crucial aspect of Article 4 is its emphasis on discouraging the export of technology to non-party states that could be used in producing controlled substances. Furthermore, parties are directed to abstain from providing financial assistance for exporting products, equipment, plants, or technology to non-party states that could aid in the production of controlled substances ('Montreal Protocol on Substances That Deplete the Ozone Layer', 1987).

Overall, Article 4 functions as a mechanism to sanction non-Parties to the Protocol and to create incentives for their accession (Brack, 1998, p. 101). The implementation of Article 4 has resulted in trade bans on countries that are not Parties to the Protocol, which continue to demand ODS for their user sectors. These countries must become a Party to the Protocol to maintain their supply of ODS. By restricting trade in ODS with non-Party states, the Protocol effectively aligned economic interests with environmental objectives, compelling countries, and industries to adhere to more sustainable practices.

A potential vulnerability of Article 4 lies in the risk of ODS production shifting to developing countries not party to the Protocol. To mitigate this risk, the differentiated approach of Article 5 status was introduced. This approach acknowledges the unique needs and circumstances of developing countries, offering them greater flexibility in terms of phasedown schedules to fulfill their obligations under the Protocol.

3.2. Phasedown/Phaseout Schedule Postponements for Article 5 Countries: A Differentiating Mechanism

Article 5 of the Protocol, titled 'Special Situation of Developing Countries' acknowledges the unique challenges faced by developing countries in adhering to the Protocol's provisions. This article is pivotal in balancing environmental objectives with developmental needs.

A core component of Article 5 is the provision allowing certain developing countries to postpone their compliance with the control measures outlined in Article 2. This postponement is applicable to developing countries whose annual calculated level of consumption of controlled substances is less than 0.3 kilograms per capita at the time of the Protocol's entry into force or any time within ten years of its entry into force. These countries are permitted to postpone their compliance with the control measures by ten years beyond the timeline specified for developed countries. However, these countries must ensure that their annual consumption does not exceed the threshold of 0.3 kilograms per capita. For compliance purposes, these countries can use either the average of their annual consumption for 1995 to 1997 or a level of 0.3 kilograms per capita, whichever is lower, as their baseline ('Montreal Protocol on Substances That Deplete the Ozone Layer', 1987).

The Protocol explicitly commits to aiding developing countries in accessing environmentally safe alternatives to ODSs. This facilitation includes not only access to alternative substances but also the technology required for their use. The aim is to assist developing countries in transitioning to safer options expeditiously, thereby aligning their developmental needs with global environmental goals. Article 5 also emphasizes the importance of supporting developing countries through various means, including subsidies, aid, credits, guarantees, or insurance programs. This support is directed towards the adoption of alternative technology and substitute products that are environmentally friendly ('Montreal Protocol on Substances That Deplete the Ozone Layer', 1987).

The phasedown schedule postponements for Article 5 countries, integral to the Montreal Protocol, underscore the differentiated aspect of the CBDR principle in the ozone regime. This mechanism grants developing countries additional time and flexibility to meet their phaseout obligations, acknowledging their varying capacities and historical contributions to ozone depletion.

Initially the defined postponements in the Article 5 failed to meet the expectations of developing countries, notably India and China. These countries advocated for the coverage of phase-out expenses by developed countries via a financial mechanism (Andersen & Sarma, 2012, p. 101; Parson, 2003, pp. 203–204). This stipulation proved to be a principal impediment to attaining global participation in, and adherence to, the Protocol. The Multilateral Fund played a crucial role in assisting these countries to transition away from ODS, ensuring that the economic impact of trade bans did not impede their development goals.

3.3. The Multilateral Fund: A Differentiating Mechanism

The Protocol initially appeared to be an agreement among developed countries, with minimal participation from most developing countries (UNEP/OzL.Pro.1/5, 1989). The Protocol's arrangements, including schedule postponements and trade bans, provide incentives for country participation while imposing sanctions on non-Parties. There was no financial support mechanism in place. The initial version of Article 10 was entitled 'Technical Assistance' and solely encompassed technical support, provided upon request, to developing countries ('Montreal Protocol on Substances That Deplete the Ozone Layer', 1987). However, there was still a risk that countries outside of the Protocol may form a bloc to circumvent these regulations and avoid trade restrictions resulting from non-participation (DeSombre, 2000, p. 71). This scenario enabled developing countries, particularly China and India, to voice demands such as financing of ODS phaseout processes by developed countries, securing technology transfer, and equitable management mechanisms (Biermann & Simonis, 1999, p. 241). The Multilateral Fund, established at the Second Meeting of the Parties in London, addressed these demands (UNEP/OzL.Pro.2/3, 1990, p. 40). Its main objective is to assist developing countries with ODS annual consumption levels of less than 0.3 kilograms per capita in complying with control measures (Secretariat of the Multilateral Fund for the Implementation of the Montreal Protocol, 2022). The Fund includes technical assistance, credit, and in-kind support, with resources provided by developed countries and used by developing countries in executing ODS phaseout projects (UNEP/OzL.Pro/ExCom/5/16, 1991, p. 24).

The Multilateral Fund was established through the modification of Article 10, achieved via amendment. The Montreal Protocol, governed under the framework of the Vienna Convention, allows for adjustments and amendments, as outlined in Article 9 ('Vienna Convention for the Protection of the Ozone Layer', 1985). Upon the adoption of an amendment, re-ratification by the existing parties is mandatory, resulting in the creation of a revised version of the agreement. The renewed Article 10 of the Montreal Protocol, introduced with the London Amendment in 1990, established a financial mechanism for providing financial and technical cooperation, including the transfer of technologies, to Parties classified under Article 5 - those developing countries with low-level consumption of controlled substances. This mechanism was tasked with covering all agreed incremental costs of Article 5 countries, through grants or concessional means, as deemed appropriate, these Parties incur to comply with the control measures, which were first phase down, then phaseout. The establishment of an indicative list of incremental cost categories was mandated to be decided by the Parties in their meetings measures. The financial backbone of the Multilateral Fund is formed by contributions from non-Article 5 Parties ('Amendment to the Montreal Protocol on Substances That Deplete the Ozone Layer', 1990).

Operating under the authority of the Parties, the Multilateral Fund is governed by policies decided by the Parties. These policies are determined during the Meeting of the Parties. This ensures alignment with the overarching goals of the Montreal Protocol. An Executive Committee is established for developing and monitoring specific operational policies, guidelines, and administrative arrangements of the Fund. The Multilateral Fund is managed by this Executive Committee with equal representation from developed and developing

countries. Decisions require a two-thirds majority, preventing any one group from imposing its will on the other (DeSombre, 2006, p. 114). Typically, decisions are made unanimously (DeSombre, 2000, p. 71). Article 10 promotes consensus in decision-making but allows for a two-thirds majority vote if consensus is unattainable, ensuring democratic and balanced resolutions. This Committee, with balanced representation from both Article 5 and non-Article 5 Parties, collaborates with international bodies such as the World Bank, UNEP, and UNDP, leveraging their expertise.

The Fund's existence has significantly enhanced the effectiveness of the international ozone regime. It has enabled Article 5 countries to conduct ODS phaseouts under the supervision of the Multilateral Fund Executive Committee. To benefit from the Fund, these countries must first present an ODS phaseout plan (Andersen & Sarma, 2012, p. 238). The financing of these phaseout projects, subject to Executive Committee approval, involves an audit and follow-up function, increasing the regime's effectiveness. Consequently, developing countries have to diligently comply with the Protocol to maintain their eligibility for funding. In fact, as phaseout projects are executed following World Bank guidelines, financing is disbursed incrementally to each country, corresponding with their attainment of specified targets. This is the Montreal Protocol's self-enforcement mechanism for developing countries. Therefore the Fund ensures that the on-the-ground transformation is equitable and orderly (DeSombre & Kauffman, 1993, p. 121). Thus, the Multilateral Fund ensured effectiveness, achieving not only extensive participation but also high levels of compliance.

China and India, both major producers and consumers of ODSs, initially expressed reservations about the Montreal Protocol (Andersen & Sarma, 2012, p. 101). They eventually joined and complied with its provisions after the financial mechanisms were clarified under the Protocol (Andersen & Sarma, 2012, p. 135). At this juncture, it is pertinent to observe that Türkiye also postponed the submission of its accession letter until it was granted Article 5 status, which entitled it to access the financial mechanism stipulated under the Protocol (B.02.0.KKG/101-750/03761, 1994). Such actions by developing countries underscore the significance of the financial mechanism in fostering participation and ensuring compliance. The financial mechanism, embodying the principle of CBDR, plays a strategic role in providing financial assistance, facilitating technology transfer, and enhancing capacity building. This has significantly contributed to the regime's success in terms of both universal participation and compliance.

4. Discussion

The international ozone regime, through its unique application of the CBDR principle, represents a model, particularly when contrasted with its application in other environmental agreements such as the Kyoto Protocol and Paris Agreement.

The Kyoto Protocol, for example, set binding emission reduction targets exclusively for developed countries. However, this approach encountered challenges in engaging major emerging economies, significant greenhouse gas emitters, but not obligated under Kyoto Protocol's framework approach ('Kyoto Protocol to the United Nations Framework Convention on Climate Change', 1997). One significant distinction between the Montreal Protocol and the Kyoto Protocol lies in the former's requirement for all parties, irrespective of their status as developed or developing countries, to be accountable for the phaseout of relevant substances. This accountability is facilitated by the Montreal Protocol's balanced sanction and incentive structure, which includes trade bans and a financial mechanism embodying the principle of CBDR.

The application of the CBDR principle in the international ozone regime presents a stark contrast to its implementation in the Paris Agreement on climate change. The Montreal Protocol exemplifies a structured approach, with clear, differentiated responsibilities and

support mechanisms for developed and developing countries, contributing to its success in phasing out ODS. Contrary to Paris Agreement, there is a well-defined prescriptive guidance for phasedown/phaseout purposes in Article 2 ('Montreal Protocol on Substances That Deplete the Ozone Layer', 1987). In contrast, the Paris Agreement relies on Nationally Determined Contributions (NDCs), which grant countries the flexibility to set their emission reduction targets ('Paris Agreement', 2015). While this flexibility allows for tailored strategies aligned with national capacities and circumstances, it lacks the prescriptive guidance on responsibilities that characterizes the Montreal Protocol. This approach in the Paris Agreement can lead to varied levels of commitment and action among countries, posing challenges in achieving global climate objectives (Streck et al., 2016).

In terms of CBDR, within the framework of the Kigali Amendment to the Montreal Protocol, there has been an update regarding the implementation of the principle of CBDR in Article 5. This update involves dividing Article 5 countries into two subgroups based on ambient temperatures. This subdivision introduces a differentiated timetable for transitioning to alternatives among developing countries ('Amendment to the Montreal Protocol on Substances That Deplete the Ozone Layer', 2016). The reason for this is that the transition to alternatives for hydrofluorocarbons (HFCs), which are used in the HVAC and refrigeration sectors focused on by the Kigali Amendment, is more complex compared to the phase-out of ODS. As alternatives to HFCs, hydrocarbon solutions present varying challenges in terms of safety and efficiency, depending on the scale of use and ambient temperatures (Directorate General for Climate Action, 2023). This poses additional difficulties, especially for countries with higher ambient temperatures where the demand for cooling is greater.

Group 1 of Article 5 countries, comprising most developing countries such as China, Brazil, and all African countries, are assigned a later baseline period (2020-2022) for HFC reduction calculations and an extended phase-down commencement timeline (2024) ('Amendment to the Montreal Protocol on Substances That Deplete the Ozone Layer', 2016). Group 2, which includes countries with high ambient temperatures, predominantly in the Middle East and parts of Asia (including India, Pakistan, Iran, and the Gulf countries), is given an even more deferred phase-down schedule, starting in 2028 ('Amendment to the Montreal Protocol on Substances That Deplete the Ozone Layer', 2016). This distinction within Article 5 countries underscores a nuanced implementation of CBDR, taking into account not only the developmental status but also the unique climatic challenges and increased reliance on HFCs for cooling purposes in these regions.

5. Conclusion

This study provides an examination of the operationalization of the CBDR principle within the international ozone regime. Through a content analysis of international treaties, official reports, and academic literature, this research has highlighted the pivotal role of CBDR in the regime's relative success. The analysis underscores the critical role that this principle has played in fostering effective international cooperation, particularly in accommodating the varied capacities and historical contributions of developed and developing countries towards ozone layer depletion. The operation of the principle of CBDR embedded in the international ozone regime has been a factor in the participation of developing countries in this regime and has basically led to two results:

(i) The operation of CBDR embedded in the international ozone regime has expanded the number of countries covered by this regime. As tangible mechanisms under the status of Article 5, such as schedule postponements and the Multilateral Fund, balanced the trade bans towards non-parties regulated in Article 4, which is a sanction practice for developing countries, therefore providing their participation in

the regime. This delicate balance was effective in the universal ratification of the Vienna Convention and the Montreal Protocol.

(ii) The embedded operation of the principle of CBDR in the international ozone regime has contributed to its effectiveness. This has been achieved through the operation of the Multilateral Fund and phaseout schedule postponements. The postponements of phaseout schedules have allowed developing countries to have adequate time to comply with the ODS phaseout process. Furthermore, the Multilateral Fund links the financing to the implementation of projects in a step-by-step manner, thus enabling close monitoring of the ODS phaseout processes of the Article 5 countries and timely intervention in the event of any disruptions. This has played a vital role in enhancing the effectiveness of the regime.

The experience of the ozone regime offers lessons for other areas of environmental governance, particularly in dealing with climate change and biodiversity loss. The regime's success in balancing equity with effectiveness, and in dynamically adjusting to scientific and economic developments, provides a blueprint for the operationalization of CBDR in other contexts.

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