

Impact of the Montreal Protocol on Decision-Making Processes for Participation: A Case Study of Türkiye

Sefa ÖZTÜRK

Assistant Professor, Department of International Relations, Yalova University, Yalova

E-Mail: sefa.ozturk@yalova.edu.tr

Orcid: 0000-0002-1467-2962

Abstract

This study provides a comprehensive analysis of Türkiye's decision-making processes in the context of the international ozone regime, particularly focusing on the country's engagement in the Vienna Convention and the Montreal Protocol during the 1980s and early 1990s. Utilizing process tracing methodology and primary sources, and adopting an interest-based framework the research delves into Türkiye's involvement and pinpoints the principal determinants of its international environmental policy. The study argues that Türkiye's approach to environmental cooperation in the Convention and Protocol was shaped by the incentive and sanction provisions of the Montreal Protocol, efforts to align Türkiye's commercial and political relations with the European Community, the growing involvement of Western countries in the agreements, and the potential environmental prestige gained from cooperative endeavors. The study emphasizes the trade provisions and Article 5 status within the Montreal Protocol, both of which played a critical role in influencing Türkiye's policy choices. This significance primarily stems from the requirement for new calculations in abatement costs. It illuminates the causal links between specific design elements of the ozone regime and their impact on Türkiye's policy decisions.

Keywords: Ozone Regime, International Environmental Politics, Turkish Foreign Policy, Environmental Regimes, Montreal Protocol

Research Article | Received: 22 November 2023, Last Revision: 21 August 2024, Accepted: 26 August 2024.

Introduction

The depletion of the ozone layer in the stratosphere poses a significant issue, primarily caused by the emission of ozone-depleting substances (ODS). The depletion of the ozone layer emerged as a paramount concern in international environmental cooperation during the 1980s. The Vienna Convention and the Montreal Protocol were established to address this issue, serving as pivotal agreements that formalized global cooperation for the protection of the ozone layer. These agreements have played a critical role in mitigating the production and management of ODSs.

The ozone regime, characterized by its framework convention-protocol structure, has served as a pioneering model for the climate change regime, for instance, its compliance procedure influenced the compliance mechanism of the Kyoto Protocol (Anlar 2011: 88). Notably, the Montreal Protocol is also hailed as an exemplary model for the potential

establishment of a plastics agreement (Kirk 2020; Raubenheimer and McIlgorm 2017). Both the Vienna Convention and the Montreal Protocol, regarded as examples of successful international environmental cooperation (DeSombre 2000), and as “self-enforcing” agreements (Barrett 1994), have achieved universal ratification.

This article investigates the impact of the international ozone regime on Türkiye’s decision-making processes, considering the influence exerted by the regime therefore the causal relationships between the regime’s specific design elements and their impact on domestic policy choices. The study argues that Türkiye’s engagement was shaped by a confluence of factors, including the incentive and sanction provisions of the Montreal Protocol, efforts to align commercial and political relations with the European Community, the increasing participation of Western countries in the agreements, and the pursuit of environmental prestige through cooperative efforts. The evolution of the ozone regime, along with the abatement cost calculations that fluctuate based on Türkiye’s potential position outside and within this regime, appears to influence Türkiye’s decision-making process. In general Türkiye’s participation in environmental cooperation is contingent upon alignment with its national interests, primarily revolving around economic development, sovereignty over natural resources, and security, thereby shaping its policy preferences in international environmental action, including climate change and ozone depletion (Mazlum 2009: 68–69).

Theoretical Framework

The Montreal Protocol incentivized the participation of developing countries by compensating them for compliance costs through the Multilateral Fund, financed by developed countries, and by imposing trade restrictions on ODSs, effectively influencing behavior change (Barrett 2008, 248–49). Many studies argue that the Protocol’s trade restriction provisions, the Multilateral Fund ensure the participation of developing countries (Barrett and Stavins 2003; DeSombre 2000: 51; Gjerde et al. 2022; Parson 2003: 164; Öztürk 2023: 77), implying that the Montreal Protocol achieved universal ratification by adopting an interest-based approach focusing on abatement costs of developing countries.

Sprinz and Vaahtoranta (1994: 80–81) elucidate the stances that states assume in engaging with international environmental cooperation through an interest-based lens, delineating these stances along the dimensions of ecological vulnerability and abatement costs. This framework posits that states’ engagement in environmental regimes is predicated upon their interests, leading them to assume either participatory or detached roles. Through this analytical lens, Sprinz and Vaahtoranta (1994) offer a taxonomy of potential state behaviors towards regulatory efforts aimed at safeguarding the ozone layer, informed by evaluations derived from these two pivotal factors. A state characterized by low ecological vulnerability, coupled with low costs associated with implementing local regulatory measures to mitigate such changes, is anticipated to exhibit a bystander demeanor, conforming to the predominant trend rather than initiating participation in cooperative efforts. Conversely, a state marked by significant vulnerability to environmental challenges but facing minimal costs for enacting preventive local regulations is anticipated to emerge as a catalyst for environmental cooperation. A state that exhibits low vulnerability to environmental adversities yet incurs substantial costs for

preventive local regulation is expected to adopt a reticent approach, demonstrating reluctance towards rapid engagement. In a scenario where a state is burdened with both high abatement costs and high ecological vulnerability, it occupies a distinctive stance. Consequently, it is anticipated that pusher countries will embrace more rigorous environmental stances compared to intermediates, who, in turn, are likely to exhibit a greater predisposition towards environmental protection than draggers. Furthermore, the propensity of bystanders to support environmental protection initiatives is conjectured to lie intermediate between that of pushers and draggers (Sprinz and Vaahtoranta 1994: 80–81). In their subsequent work, Sprinz and Vaahtoranta (2002: 328) have expanded this model to serve as a framework for elucidating compliance. As a result, the model provides insights into the anticipated behaviors of countries concerning both participation and compliance.

This model, providing a state-level analysis, implies that modifying abatement costs through amendments to the agreement, or through changes in a country's status within the agreement could potentially alter a country's stance towards environmental cooperation. The provision for amendments, as delineated in the Vienna Convention, facilitated such modifications in subsequent protocols. Notably, Sprinz and Vaahtoranta (1994: 105) acknowledge the parsimony in their own framework, critiquing it for a potential oversimplification by not fully accounting for domestic processes. This article addresses that critique by delving into the details of decision-making processes in Türkiye, thus focusing on the operationalization of ecological vulnerability and abatement costs within the decision-making processes. It is evident that the primary consideration is the juxtaposition of abatement costs against the costs of non-participation, as opposed to a comparison between abatement costs and ecological vulnerability. The underlying mechanics revolve around comparing the economic costs of being a party versus those of not being a party, emphasizing that both options entail associated expenses (Mazlum 2006: 297).

In this framework, design modifications of the Montreal Protocol reducing the abatement costs for developing countries, such as Article 5 and the Multilateral Fund, dynamically influenced the Türkiye's stance regarding the protocol. Causality is established between Türkiye's decision outcomes—participation, abstention, delay, or standby—and the step-by-step impact of independent variables. These variables include design changes in the Montreal Protocol and Türkiye's status within it, affecting the abatement costs for potential participants or the cost of non-participation. By elucidating the causal links between specific design elements of the ozone regime and their impact on Türkiye's policy decisions, this study illuminates the interplay between international environmental agreements and national policymaking within an interest-based explanatory framework, thereby substantiating this explanation through internal processes.

Methodology

During the formative stages of the Vienna Convention and the Montreal Protocol, Türkiye did not participate as a negotiating party. Consequently, the central inquiry pertains not to the formation of regimes but to the reasons underlying Türkiye's various decisions engaging with an already established regime.

The study employs process tracing methodology which enables a thorough exploration of the complex dynamics of causality, offering a comprehensive view of the factors involved and their influence on the outcome (George and Bennett 2005: 6) and leveraging primary sources. The primary sources include United Nations Environment Programme (UNEP) documents, documents from the Turkish Grand National Assembly, Official Gazette entries, and published media sources.

Türkiye conducted a thorough evaluation of the ozone cooperation at different intervals, leading to diverse decisions. The justifications for each decision were distilled into principal points by refining the content of relevant documents. These points emphasized themes associated with an interest-based explanatory framework, focusing on the ecological vulnerability aspect and costs associated with abatement efforts.

A cross-referencing approach is employed to enhance the validity and reliability of the findings, ensuring consistency and accuracy. These sources provide historical context and are integrated into the analysis to trace the causal chain. In this causal chain, Türkiye's decision outcomes and modifications to the design of the ozone regime, as well as Türkiye's potential position within the regime, were interrelated.

Context

The depletion of the ozone layer first garnered attention in the early 1970s, marking its first notable appearance in the Turkish domestic press. On March 11, 1972, the *Milliyet* Newspaper featured an article by İsmail Cem İpekçi (1972: 2), a renowned journalist, who, in his column, addressed the scientific research concerning the potential destruction of the ozone layer by supersonic planes. Another illustrative instance can be found in the *Milliyet* Newspaper on February 8, 1975, in an article titled "It was claimed that airplanes flying at supersonic speed caused skin cancer" (*Milliyet* 1975: 3). Once again, on May 10, 1975, the *Cumhuriyet* Newspaper featured an article addressing the correlation between ozone layer depletion and fluorinated gases. The article emphasized that the destruction of the ozone layer could lead to a rise in cases of skin cancer (Baykut 1975: 7). It should be noted that, Sprinz and Vaahantoranta's framework also identified skin cancer prevalence as a principal indicator of ecological vulnerability in the context of ozone layer depletion.

Evident from this, the depletion of the ozone layer had emerged as a matter known to a limited circle of individuals in Türkiye, primarily comprising scientists, journalists and those diligently attuned to global affairs. Confirming it, Engin Ural (2014: 77), an environmental advocate, highlighted the local focus of Türkiye's environmental agenda in the 1980s, noting the lack of widespread recognition or interest in global concerns such as climate change and ozone depletion. This pattern is also evident in inventory studies concerning environmental issues conducted during this period (Türkiye Çevre Sorunları Vakfı 1983; 1999). Environment Foundation of Turkey (Türkiye Çevre Sorunları Vakfı 1986; 1987; 1988; 1990a; 1990b) implying nonexistent ecological vulnerability perception in terms of ozone depletion.

Parallel to this no documentation was found pertaining to Türkiye's involvement in the Vienna Convention negotiations. On the other hand, during the 1980s, when international cooperation on the matter began to take shape, it is evident that ozone depletion gained the attention of decision-makers in Türkiye. An important indication of this shift is reflected in the amendment made to the 1979 Cosmetic Regulation in 1983. Originally developed by the Ministry of Health and Social Assistance, the Cosmetic Regulation of 1979 aimed to regulate and mitigate potential risks posed by cosmetic products to human health. The subsequent amendment in 1983 can be viewed as a significant response by Turkish authorities to address the emerging concerns related to ozone depletion and its potential ramifications on human well-being (T.C. Resmî Gazete 1979: 3). Through an amendment enacted on July 2, 1983, a provision was added to the Regulation. Specifically, it stipulated that aerosol containers containing chlorofluorocarbons (CFCs) must bear a warning label stating, "contains fluorinated and chlorinated hydrocarbons that are harmful to the environment and human health by decomposing the ozone layer in the stratosphere." This addition mandated the inclusion of the aforementioned warning message alongside other usage instructions on such aerosol containers. This regulatory action demonstrates a recognition of the potential detrimental effects of CFCs on both the environment and human health, reflecting Türkiye's emerging responsiveness to the global concerns surrounding ozone depletion (T.C. Resmî Gazete 1983: 14). Consequently, a legislative adjustment concerning aerosols, which can be perceived as an extension of evolving regulatory frameworks observed in various countries, particularly the United States (US), becomes apparent within the context of Türkiye. However, it is noteworthy that in the subsequent years, this regulatory measure exhibited limitations and was not effectively enforced in practice. Despite its initial introduction, the implementation of this regulation remained constrained and did not fully align with the intended objectives (Cumhuriyet 1987: 16).

Initial Evaluation

The advent of the Vienna Convention for the Protection of the Ozone Layer in 1985 marked the emergence of ozone depletion as a significant concern among various government entities. In response, the General Directorate of Environment embarked upon an investigation to assess the viability of Türkiye becoming a party to this convention. Their objective was to ensure that Türkiye remained actively involved in comprehensive and impactful international cooperation programs, thereby avoiding exclusion from vital collaborative initiatives (TBMM 1988: 222). In this context, a meeting took place on March 11, 1985, bringing together representatives from the Ministry of Health and Social Assistance, the Ministry of Industry and Trade, and the General Directorate of State Meteorology Affairs. The purpose of this meeting was to gather insights and perspectives from the relevant ministries and institutions. During this session, the potential participation in the Vienna Convention was assessed, and it was highlighted that caution should be exercised before becoming a party to the Convention. This cautionary approach was driven by concerns regarding the ability to effectively enforce the Convention's provisions due to the current limitations in scientific and technical capacities, as well as financial constraints. This deliberation underscored the importance of thoroughly evaluating

Türkiye's readiness and available resources before committing to the international obligations outlined in the Convention (TBMM 1988: 222).

At this juncture, Türkiye recognized that cooperation entails certain abatement costs without a corresponding financial incentive mechanism in place. Moreover, the imminent consequences of abstaining from becoming a party to the agreement have yet to materialize. Consequently, Türkiye carefully evaluated the balance between the associated costs and benefits prior to fully committing to international agreements, continuously reassessing the situation in light of evolving circumstances. During this period, the issue of ozone depletion did not feature prominently on the agenda, and abatement costs were deemed high.

When international efforts to safeguard the ozone layer evolved into a formal protocol starting from 1985, Türkiye's approach was characterized by cautious observation of the stances adopted by various countries particularly those in the Western hemisphere, resonating "westernism" and "maintenance of the status quo" (Oran 1996). Türkiye did not actively engage in this cooperative framework but rather maintained a distant perspective while monitoring the unfolding developments. This restrained approach exemplified Türkiye's careful and measured stance in relation to actively participating in international ozone cooperation, opting instead to assess the landscape and observe the progress made by other countries before committing to a more involved role (UNEP/Ozl.Conv.1/5 1989: 2; UNEP/OzL.Pro.1/5 1989: 2).

Upon its initial evaluation by Türkiye in 1985, the Vienna Convention articulated its goal of fostering international cooperation by facilitating the exchange of information concerning the impact of human activities on the ozone layer. This collaboration aimed to stimulate policymakers to undertake future measures to mitigate activities that deplete the ozone layer. Proponents of the Convention anticipated that shared knowledge and collective efforts would lead to the formulation and implementation of effective strategies to tackle the issue of ozone depletion (Vienna Convention for the Protection of the Ozone Layer 1985). The Convention itself, however, did not include specific provisions for eliminating ODSs. Instead, the regulation pertaining to these substances was planned through a protocol, referred to as the "chlorofluorocarbon protocol." This protocol was expected to be formulated under the framework of the Convention during that period. The decision to abstain from joining the Convention in 1985 originated from identified technical and financial constraints. Nevertheless, the question of accession resurfaced in Türkiye as negotiations for a protocol within the Convention—incorporating provisions to phasedown the use of ODSs—neared conclusion. This renewed consideration for joining the Convention emerged as the protocol's significance became increasingly evident, emphasizing the escalating awareness of the issue.

Second Evaluation

In the context of the imminent finalization of the "chlorofluorocarbon protocol" under the Vienna Convention, the matter of Türkiye's potential accession was reassessed and brought forward for discussion by the Ministry of Foreign Affairs. Consequently, a second meeting was convened on May 25, 1987, to deliberate on Türkiye's potential participation in the Vienna

Convention. This meeting was prompted by the expanding participation of other countries within the Convention, which necessitated a renewed examination of Türkiye's position and potential participation (TBMM 1988: 221–223). Concurrently, the emergence of media coverage about the ozone issue indicates its growing significance on the political agenda (Cumhuriyet 1987: 16).

Following the request from the Ministry of Foreign Affairs to reassess participation in international agreements, the initial decision—reached negatively with relevant institutions and ministries—was revisited. As a result, another meeting was held at the General Directorate of Environment, which included representatives from the Ministry of Foreign Affairs, the Ministry of Health and Social Aid, the Ministry of Industry and Trade, the Undersecretariat of Treasury and Foreign Trade, the General Directorate of State Meteorology Affairs, and the Chemistry Department of Middle East Technical University.

In this subsequent meeting, the organizations reiterated their consensus from the initial gathering, highlighting the country's inability to sign the agreement due to existing infrastructure inadequacies. However, they stressed the necessity of initiating preparatory measures, coordinated by the General Directorate of Environment, as a foundation for future actions. Furthermore, all participating organizations recognized their limited capacity to conduct the necessary research and investigations to protect the ozone layer, citing financial constraints, in other words costs, as the main barrier to obtaining the necessary resources. Despite expressing a desire to actively participate in international cooperation programs, the prevailing challenges impeded the country's effective participation (TBMM 1988: 221–223). Consequently, the second meeting in 1987, which aimed to evaluate Türkiye's potential participation in the emerging international ozone regime, concluded that consensus had not been reached regarding Türkiye's capacity to join the Vienna Convention.

Leaning Towards Participation

The assessments seemed to undergo a change following the opening of the Montreal Protocol for signature. On August 8, 1988, this shift became apparent during an inquiry regarding the measures taken in accordance with the Vienna Convention. In a written response to this parliamentary inquiry on October 13, 1988, Şükrü Yürür, the Minister of Industry and Trade, compiled information from various government bodies, outlining Türkiye's stance on international ozone cooperation up to that point.

Türkiye was acknowledged to be receptive, in principle, to becoming a party to the Convention. However, comprehensive studies on the associated obligations were still in progress. In particular, the examination of benefits and costs of alternative solutions that would neither harm the economy nor the environment was being carefully monitored. Minister Yürür stated, “The Vienna Convention and the Protocol entail scientific, technical, legal, and financial obligations for the parties involved. As a result, Türkiye has not yet signed the Convention. However, upon the completion of necessary preparations conducted by the Prime Ministry General Directorate of Environment in collaboration with relevant institutions, it has been deemed appropriate for Türkiye to accede to the treaty” (TBMM 1988: 219).

Thus, as of October 1988, it became clear that the evaluation regarding Türkiye's participation in the Convention leaned towards approval, "once the necessary preparations were finalized." From this point onwards, Türkiye seemed to observe the Convention's entry into force during the 1985-1988 period and align its position accordingly (TBMM 1990: 3). Official records indicate significant preparatory work has been conducted in line with this decision.

Recognizing that future obligations would be linked to imports, the Undersecretariat of Treasury and Foreign Trade and the Prime Ministry General Directorate of Environment have collaborated closely. They jointly conducted an extensive study on the production status of ODSs, with a specific focus on regulating imports of such substances, particularly in the aftermath of the establishment of international agreements.

The Ministry of Health and Social Assistance has assumed responsibility for the composition and inspection of informative warnings on aerosol containers. In accordance with the Public Health Law and related regulations, legal measures are imposed against companies failing to comply with these requirements. The evaluation of alternative substances that do not contribute to ozone layer depletion is based on criteria such as economic feasibility and environmental sustainability. As a result, ongoing monitoring efforts are committed to studying the development of suitable technologies in international organizations, exploring alternative substances, and assessing the costs and benefits associated with control technologies (TBMM 1988: 219–220).

According to official documentation, by October 1988, the idea of participating in the Convention was officially acknowledged for the first time, provided that necessary preparations were completed. This shift in perspective represented a significant change within a year and a half since the May 1987 meeting. The catalyst for this transformation was the increased clarity surrounding the punitive and incentivizing measures outlined in the Montreal Protocol, which redefined the calculations of abatement costs, becoming evident in September 1987. Consequently, this revelation significantly influenced Türkiye's assessment of the net costs associated with becoming a party to the Convention within a specific timeframe.

The Protocol incorporates crucial sanction and incentive measures within Articles 4 and 5. Among these, the trade bans established in Article 4 emerge as the primary punitive mechanism for non-party countries. Specifically, these provisions explicitly prohibit the trade of ODSs with countries that have not ratified the Protocol, extending to encompass the trade of products manufactured using such substances (T.C. Resmî Gazete 1990: 19–20; Montreal Protocol on Substances That Deplete the Ozone Layer 1987: 6–7). Conversely, the Protocol introduces Article 5 as an incentivizing provision specifically targeting developing countries. Under this provision, developing countries are granted a phased reduction schedule for the use of ODSs, recognizing their unique circumstances and allowing them more time to implement the required measures (T.C. Resmî Gazete 1990: 20; Montreal Protocol on Substances That Deplete the Ozone Layer 1987: 7). The clarification of the sanction and incentive architecture of the Montreal Protocol prompted Türkiye to consider joining the agreement.

In the wake of these developments, the issue of ozone resurfaced in the Turkish Grand National Assembly at the beginning of 1989 through a new parliamentary inquiry. Alongside inquiries about the government's measures to protect the ozone layer, a question was posed regarding the consideration of signing the international convention on ozone layer protection. Responding to this parliamentary inquiry on February 14, 1989, the government revealed that a new meeting had taken place to reassess the matter, culminating in the decision to become a party to both the convention and the protocol.

Third meeting was held at the General Directorate of Environment, a branch of the Ministry, on January 26, 1989. It was attended by officials from the Ministry of Foreign Affairs, the Ministry of Health and Social Assistance (Refik Saydam Hygiene Center Presidency), the Ministry of Industry and Trade, the Undersecretariat of State Planning Organization, the Undersecretariat of Treasury and Foreign Trade, the General Directorate of State Meteorology Affairs, the Scientific and Technical Research Institution of Türkiye, and the Middle East Technical University (Department of Chemistry). Following discussions, it was agreed that Türkiye should join the convention and protocol. Upon official notification of this decision to the Ministry of Foreign Affairs, the necessary legal procedures would be completed by the ministry (TBMM 1989: 133).

This statement elucidates the factors affecting the decision to accede to the Convention and Protocol, emphasizing the incentivizing and punitive elements of the Montreal Protocol. It recognizes that the Protocol enforces limitations on the production, consumption, import, and export of ODSs pertinent to various sectors in Turkey, should the country remain a non-participant, thereby acknowledging the costs associated with non-participation. Furthermore, it emphasizes the Protocol's commitment to assisting developing countries in meeting their obligations. The statement outlines the fundamental principles of the Convention, which involve conducting research, systematic measurement, and observation to address ozone layer-related issues impacting human health and the environment. It also underscores the international cooperation required to implement technical, administrative, and legal measures (TBMM 1989: 133–134).

The international ozone regime, targeting abatement costs and the costs of non-participation to ensure widespread participation and thus implying an interest-based approach, significantly influenced Türkiye's stance. Türkiye's latter assessments demonstrated its precarious position due to the import restrictions imposed by the Protocol. This situation stemmed from Türkiye not producing the substances covered by the Protocol domestically but relying on imports. Concurrently, it exported products that utilize these substances to Western countries, which are key participants in the Protocol (TBMM 1989: 134). At this very juncture, the design elements of the ozone regime impacted Türkiye's ozone policy.

Joining an international environmental agreement involves an economic cost, which includes offsetting future liabilities faced by the relevant sectors against the financial incentives provided by the agreement. Conversely, not participating as a party carries the economic cost of incurring sanctions imposed on non-parties by the relevant agreement, as well as potential sanctions from Europe. As Akçalı, Görmüş, and Özel (2023:129) have argued regarding the green energy transition, Türkiye is not an exception to global and European

trends, despite its unique nuances. By balancing these factors, the expectation is to determine whether the financing and phasedown schedule incentives offered by the agreement outweigh the cumulative economic sanctions imposed on non-parties and any additional costs within Europe. The inclusion of Article 5 in the protocol grants special status to developing countries, effectively reducing the economic cost of joining as a party and ensuring these countries' compliance with the regime. This provision eases the financial burden associated with accession and facilitates Türkiye's alignment with the obligations set forth in the agreement.

A concrete evaluation of cost calculation can be undertaken by examining the sectors within the Turkish economy that rely on ODSs. Despite the media's narrow focus on aerosols, these substances are utilized across a range of industries. Restrictions on access to these substances would impede the production and export of specific industrial goods. Given that ODSs are predominantly imported and that the Montreal Protocol directly addresses their trade, Türkiye would face future challenges in securing a steady supply of these substances. As Türkiye did not produce any ODSs domestically but had sectors that depend on their use, this situation presented a significant issue for the country's production processes reliant on these substances.

During this period, the primary users of ODSs were significant refrigerator manufacturers operating in the refrigeration sector. At the beginning of the 1990s, two manufacturers, holding a combined market share of 98%, produced refrigerators and compressors that relied on these substances. Consequently, these companies would need to completely reconfigure their compressor production lines as part of the process of phasing out ODSs. The adoption of alternative refrigerants requires the use of new equipment, effectively necessitating a redesign of these production lines. These companies cater not only to the domestic market but also export refrigerators and refrigerator compressors to Europe and the US (UNEP/OzL.Pro/ExCom/8/17 1992: 10–11). With the global initiative to phase out ODSs, the continuity of these exports would be jeopardized without ratification of the Convention and the Protocol and transitioning to alternative substances. The potential disruption to these exports has been one of the driving forces behind Türkiye's decision to join the Convention and Protocol. It is worth noting that influential refrigerator companies, directly impacted by these issues, played a significant role in Türkiye's inclination towards participation throughout this entire endeavor (TTGV Project Coordinator 2022). Another pivotal factor affecting the decision-making process regarding participation was the status of Türkiye's accession to the Convention and Protocol. In fact, in announcing the government's commitment, Adnan Kahveci stated that "as long as these values remain below the per capita consumption threshold of 0.3 kg/year specified in the Protocol, developing countries will be exempted from the restrictions outlined in the Protocol for a period of 10 years." This assertion indicates that Türkiye intends to proceed with accession under Article 5 of the Montreal Protocol (TBMM 1989: 134). It is important to note that, as of this date, the benefits under Article 5 were restricted solely to phasedown schedule postponements. The London Amendment, which introduced a Multilateral Fund to the Montreal Protocol, had not yet been enacted (Amendment to the Montreal Protocol on Substances That Deplete the Ozone Layer 1990). Consequently, cost assessments during this period were primarily concerned with the acquisition of phasedown schedule postponements.

Moreover, during the period when Türkiye hesitated to join, there may have been encouragement from the US urging Türkiye to become a party to the Montreal Protocol. A significant indication of this can be found in an article published in the Cumhuriyet Newspaper on February 26, 1989, titled “Ozone letter from the US to Özal.” According to the article, 38 US senators sent a letter to Prime Minister Turgut Özal and Parliament Speaker Yıldırım Akbulut, urging Türkiye’s accession to the Montreal Protocol. The letter was subsequently forwarded to the General Directorate of Environment and the Foreign Affairs Committee of the Turkish Grand National Assembly (Bildirici 1989: 18). Although this event occurred in February 1989, after the decision to join the Vienna Convention and the Montreal Protocol had been made and the legal process had commenced, it is plausible that there were already requests for Türkiye’s participation in the Protocol, which the US actively supported prior to this letter.

Reflecting the most recent developments, Türkiye participated as an observer in the First Conference of the Parties of the Vienna Convention in April 1989 and the First Meeting of the Parties of the Montreal Protocol in May 1989. A notable outcome of this meeting was Türkiye’s exclusion from the list of countries eligible for Article 5 status. Consequently, upon its official accession, Türkiye would be obligated to adhere to the same responsibilities as developed countries, a situation that has profoundly influenced Türkiye’s assessment of abatement costs. As Türkiye aspired to maintain its abatement costs at a comparatively low level, akin to those of other Article 5 countries, this development significantly recalibrated Türkiye’s approach towards participation underscoring the critical importance attributed to abatement costs.

High Abatement Costs without Article 5 Status

On June 8, 1989, with the submission of the draft law for ratifying the Vienna Convention and the Montreal Protocol to the Presidency of the Turkish Grand National Assembly, the prevailing perception was that Türkiye was not in a rush to accede to these agreements. While media coverage focused on the anticipated costs in relevant sectors, the cost of non-participation loomed large (Kılıçkaya 1989: 10). Should Türkiye opt not to become a party at this juncture, it would be subjected to the sanctions outlined in the Article 4 of the Protocol. Conversely, joining as a party would entail Türkiye sharing obligations with developed countries and potentially bearing the costs associated with other developing countries. The Montreal Protocol heightened the cost of non-participation, but it remained unclear how Türkiye would manage the expenses associated with accession. The cost of non-participation was expected to materialize in the medium term, whereas the cost of joining under the existing conditions was anticipated in the near term.

Furthermore, Türkiye found itself in a complex position. On one hand, it was aligned with Western countries as part of the alliance, which placed it alongside these countries. On the other hand, within the framework of the Protocol, Türkiye had to classify itself as a developing country, thus placing itself within this group. In essence, Türkiye faced a dilemma: it could either be categorized as a developed country and assume obligations, or it could be recognized as a developing country and receive assistance. According to an official from the

Undersecretariat of Environment, Türkiye's situation was ambiguous, positioned somewhere in the middle (Türkiye Çevre Sorunları Vakfı 1990a: 53).

Amidst this prevailing uncertainty, the process of Türkiye's accession to the ozone protection agreements, initiated in January 1989, progressed simultaneously. On June 8, 1989, the Parliament received both the Draft Law on Türkiye's Participation in the Vienna Convention on the Protection of the Ozone Layer and the Draft Law on Türkiye's Participation in the Montreal Protocol on Substances Depleting the Ozone Layer (07/101- 2274/02937 1989).

Based on the official documents detailing the justification points that emerged during Türkiye's completion of the legal procedures concerning the Montreal Protocol, the reasons behind Türkiye's decision to become a party to both the Convention and the Protocol are outlined as follows: (i) To benefit from the advantages of timeline extensions; (ii) To receive technical and financial assistance; (iii) To avoid credit limitations and import-export restrictions; (iv) To actively engage in the international arena and address the pressing environmental issue at hand; (v) Due to the development of a Draft Regulation within the European Community (EC) that aligns with the Convention and Protocol, regulating the import-export regimes, production, and consumption principles of ODSs in EC countries. Considering Türkiye's preparations for entry into the EC, this issue is also crucial to minimize the potential impact on relevant sectors from the forthcoming restrictions; (vi) the growing number of signatory countries; (vii) To demonstrate commitment to international environmental cooperation and enhance global public opinion of Türkiye's dedication in this regard (07/101- 2274/02937 1989; TBMM 1990: 3). The reasons provided can be categorized as follows: Firstly, the incentives and sanctions inherent in the international ozone regime's architecture (i), (ii), (iii). These are directly related to the abatement costs. Secondly, the considerations pertaining to Türkiye's relationship with the European Community (v). Lastly, the factors related to the country's international image (iv), (vi), (vii) in the eyes of global public opinion.

The drafts were submitted to the Foreign Affairs Committee and deliberated upon during a session held on February 7, 1990. Representatives from the Ministry of Foreign Affairs, the Ministry of Health, the Prime Ministry Undersecretariat of Environment, and the General Directorate of State Meteorology Affairs participated in the committee meeting. The drafts were approved with a report that reiterated the same statements. Subsequently, during a General Assembly meeting of the Turkish Grand National Assembly on June 6, 1990, the Vienna Convention received the votes of 193 out of the 194 participating deputies (with one invalid vote), while the Montreal Protocol received the votes of 189 out of the 190 participating deputies (with one invalid vote). Consequently, the legislation for Türkiye to become a party to the Protocol was passed by the Turkish Grand National Assembly and officially published in the Official Gazette on September 8, 1990 (T.C. Resmî Gazete 1990: 1-96).

Despite completing the internal legal procedures, Türkiye's formal accession to the Convention and Protocol necessitates the submission of an official letter to the United Nations. In this context, as Türkiye sought to obtain Article 5 status within the Montreal Protocol, this process was deliberately delayed.

Details shedding light on this delaying process are available in documents related to Türkiye's participation in the London Amendment and the Copenhagen Amendment to the

Montreal Protocol in 1994. Despite Türkiye's per capita annual consumption remaining consistently below 0.3 kg since 1986, as stipulated in Article 5 of the Montreal Protocol, the bill submitted to the Turkish Grand National Assembly during the approval process of the London and Copenhagen Amendments underscores the concern that Türkiye was not included in the list of developing countries recognized at the First Meeting of the Parties. Unless this situation is rectified, Türkiye faces immediate enforcement of the reduction, prohibition, and trade obligations outlined in the Protocol upon its official accession. Additionally, it will be unable to avail itself of benefits such as a 10-year exemption, access to Multilateral Funds, and technology transfer provided to developing countries. Therefore, collaborative efforts have been initiated with Turkish and other relevant organizations to secure Article 5 status for Türkiye and postpone the submission of the accession document to the United Nations (UN) General Secretariat until the country's status is finalized (B.02.0.KKG/101-750/03761 1994).

Following the enactment of the relevant laws on September 8, 1990, Türkiye received a letter from the Ozone Secretariat on November 7, 1990, inviting it to become a party to the Convention and Protocol, while the accession process was on hold (UNEP/OzL.Pro.2/Bur/1/R.2 1990: 25). In response, on November 16, 1990, a letter was sent through the Turkish Embassy in Nairobi, addressed to Mr. Tolba. The letter emphasized that Türkiye had nearly completed its internal procedures for accession and met all the requirements for obtaining Article 5 status but expressed an inability to fulfill its obligations without acquiring this status. It stated: "I am pleased to inform you that my government, taking into account the urgent and growing need for global cooperation in implementing the provisions of the Convention and its Protocol, has almost completed the formalities for its accession thereto..." (UNEP/OzL.Pro.2/Bur/1/R.2 1990: 25).

In this context, the completion of domestic legal processes regarding Türkiye's accession to the Convention and Protocol between January 1989 and September 1990 is of significant importance. It can be observed that the pace of these processes slowed down when Türkiye was not included in the list of developing countries at the First Meeting of the Parties to the Montreal Protocol in May 1989. This development, occurring shortly after the decision to join was made in January 1989, led to a reassessment of the domestic legal processes.

Participation by Guaranteeing Low Abatement Costs

Türkiye's attainment of Article 5 status occurred during the Third Meeting of the Parties held in Nairobi in June 1991. As per an official from the Ministry of Environment serving at that time, Türkiye's recognition as a developing country was facilitated through the concerted efforts of its representatives - notably those from the Ministry of Environment and the Turkish Ambassador to Nairobi, who were present at the meeting (Algan 2019). During the meeting, the Turkish delegation emphasized that Türkiye met the criteria for developing country status, citing its per capita consumption of controlled substances at 0.07 kg, an annual gross national product of approximately 1300 USD, and its classification as a developing country by major international organizations. Many delegates expressed support for Türkiye's inclusion in the list of developing countries (UNEP/OzL.Pro.3/11 1991: 14). However, concerns were raised regarding Türkiye's application for membership in the European Economic Community, and

the potential for reopening the list of developing countries in general. It was also noted that countries ineligible for support from the Multilateral Fund could seek assistance from the Global Environmental Facility as an alternative (UNEP/OzL.Pro.3/11 1991: 14). Subsequent to the decision to request the Montreal Protocol Open-Ended Working Group to review the criteria for applying for developing country classification, a proposal was made by one country to consider a new category that neither provides nor receives support from the Multilateral Fund (UNEP/OzL.Pro.3/11 1991: 14).

During the negotiations, discussions surrounding Türkiye's Article 5 status elicited a blend of support and objections. The objections were primarily focused on questioning Türkiye's eligibility for this status. Nevertheless, these objections were overruled, and Decision III/5 was passed in Türkiye's favor during the Third Meeting of the Parties to the Montreal Protocol. This official decision granted Türkiye the status of an Article 5 country (UNEP/OzL.Pro.3/11 1991: 17). This outcome can be attributed to the concerted efforts of influential countries within the Protocol that sought to include developing countries in the regulatory framework and to avoid the potential relocation of ODS producing sectors to these countries. The Protocol aimed to prevent trade-related loopholes that could allow the production of regulated substances by non-party countries. Consequently, the swift accession of developing countries to the Montreal Protocol was of considerable importance. This viewpoint is further corroborated by industry representatives in Türkiye (Termodinamik 1994).

Türkiye's attainment of the desired status within the Montreal Protocol illustrates its successful engagement and effective implementation of the international ozone regime, while simultaneously underscoring its relatively delayed position within the international climate change regime. A multitude of policy documents subsequently emerged emphasize Türkiye's satisfaction with its Article 5 status within the Montreal Protocol, in stark contrast to its stance within the climate change regime. Authorities have conducted comparative analyses of these two regimes, shedding light on the divergence in Türkiye's policies on ozone and climate change. Notably, the Minister of Environment elucidated the underlying factors contributing to this disparity during a session at the Turkish Grand National Assembly. According to the Minister, Türkiye chose not to sign the Climate Change Convention in Rio because it disagreed with being categorized as a developed country, arguing that its per capita income did not meet the criteria for such a classification. As part of the group of developed countries, Türkiye would have been subject to stringent emissions restrictions, while countries like the United States were permitted to maintain higher emission levels. Additionally, Türkiye was unwilling to position itself as the sole contributor to the collective fund for developing countries. Therefore, Türkiye's decision not to sign the convention was motivated by concerns about restrictive allowances, compromised flexibility, and financial burdens (TBMM 1992: 418).

As a result of these developments, Türkiye, having been included in the list of developing countries at the Third Meeting of the Parties in Nairobi in June 1991, submitted its accession document to the UN Secretariat General, officially becoming a party to the Convention and Protocol on December 19, 1991 (B.02.0.KKG/101-750/03761 1994). The decision made at the

Third Meeting of the Parties to the Montreal Protocol, identified as Decision III/5, alleviated Türkiye's concern about becoming a "donor country" and enabled it to become a recipient of grants. Consequently, Türkiye concluded the process of becoming a party to the Protocol after making the necessary adjustments aligned with its interests. Through this process, Türkiye effectively addressed the financing challenge that would facilitate sector transformation, eliminated potential trade restrictions arising from non-participation, and secured an extended timeline for the phase out process, all of which are related to reducing abatement costs.

Conclusion

The study examined Türkiye's decision-making processes regarding the Vienna Convention and the Montreal Protocol during the period of the 1980s and early 1990s. The path toward becoming a signatory was a measured and strategic process, embodying a balance of the country's developmental needs, economic considerations, and international commitments, influenced by the architecture of the international ozone regime which effected the abatement costs calculations of the country. The findings demonstrate that, in parallel to the alteration of abatement costs through benefits derived from the Multilateral Fund of the Montreal Protocol or considerations of Türkiye's potential status under Article 5 upon accession to the protocol, as well as the associated costs of non-participation, Türkiye's decision outcomes have evolved over time, which have been explained in an interest-based framework.

Parallel to the evolution of the Montreal Protocol, Türkiye's participation in the ozone cooperation has been influenced. As mentioned in Türkiye's parliamentary documents, (i) the incentive and sanction provisions outlined in the Montreal Protocol, (ii) efforts to align commercial and political relations with the European Community, (iii) the growing number of Western countries joining the Convention and Protocol, and (iv) the potential environmental prestige associated with participating in such cooperative endeavors, were all evidently influential. However, only the trade provisions and Article 5 affected the decision to participate, timeline of joining, causing deliberate delays, even though the other reasons remained constant.

These findings indicate that the variability in Türkiye's positions, directly related to abatement costs, can be elucidated within an interest-based framework. Conversely, despite indications of a heightened societal perception of ecological vulnerability, this study's methodological reliance on justification texts did not yield evidence of such fragility or its influence on decision-making processes. The projected costs of non-participation appear to be more significant.

The case of Türkiye, as a developing country, yields critical insights for the design of international environmental agreements. An international environmental agreement designed to promote participation from developing countries should possess characteristics that make participation and effective implementation more beneficial in a cost-benefit analysis for the countries considering involvement. This includes establishing a cost for non-participation and counterbalancing this cost with incentives that follow participation. Drawing from this perspective, international environmental agreements' design elements promote compliance and widespread ratification. A balanced architecture includes both punitive measures and

incentives such as financial assistance, technology transfer, and flexible timelines to facilitate adherence, which need to embed mechanisms that stimulate participation by effectively balancing the costs of compliance and the benefits of participation particularly for developing countries.

For further research, this explanation model can serve as a predictive framework for assessing Türkiye's participation in and compliance with other environmental agreements, or international environmental cooperation in general. In particular, the abatement cost of participation and the cost of non-participation, as exemplified by the provisions of Article 4 of the Montreal Protocol which includes sanctions for those who do not participate, emerge as an important axis in this analysis. Through a comparative analysis of the costs of participation and non-participation, a quantitative model can be developed to assess engagement in international environmental cooperation. The potential impact of the Carbon Border Adjustment Mechanism, as an integral part of the EU Emissions Trading System, on Türkiye's climate policy represents a pertinent subject for analysis.

References

- 07/101-2274/02937. 1989. Gerekçe. Ankara: T.C. Başbakanlık Kanunlar ve Kararlar Genel Müdürlüğü.
- Akçalı Emel, Evrim Görmüş, and Soli Özel. 2023. Turkey's Green Imagination: The Spatiality of the Low-Carbon Energy Transition within the EU Green Deal. *Uluslararası İlişkiler* 20, 77: 127-146.
- Algan, Nesrin. 2019. Doğa ve İklim Söyleşileri - 4 Türkiye'de Çevre Koruma(ma)nın Tarihi. *İstanbul Policy Center*.
- Amendment to the Montreal Protocol on Substances That Deplete the Ozone Layer. 1990. *United Nations Treaty Series* 1598 (26369): 469.
- Anlar Güneş, Şûle. 2011. İklim Değişikliği Yükümlülüklerine Uygunluğun Sağlanması: Kyoto Protokolü Uygunluk Mekanizması. *Uluslararası İlişkiler* 8, 31: 69-94.
- B.02.0.KKG/101-750/03761. 1994. Gerekçe. Ankara: T.C. Başbakanlık Kanunlar ve Kararlar Genel Müdürlüğü.
- Barrett, Scott. 1994. Self-Enforcing International Environmental Agreements. *Oxford Economic Papers* 46: 878-894.
- Barrett, Scott. 2008. Climate Treaties and the Imperative of Enforcement. *Oxford Review of Economic Policy* 24, 2: 239-258.
- Barrett, Scott, and Robert N. Stavins. 2003. Increasing Participation and Compliance in International Climate Change Agreements. *International Environmental Agreements Politics Law and Economics*. <https://doi.org/10.1023/b:inea.0000005767.67689.28>.
- Baykut, Fikret. 1975. Kirlenme ve Acı Sonuçları. *Cumhuriyet*, May 10.
- Bildirici, Faruk. 1989. ABD'den Özal'a Ozon Mektubu. *Cumhuriyet*, February 28.
- Cumhuriyet. 1987. Atmosferin Delinmesine Aldırmıyoruz. *Cumhuriyet*, March 28.
- DeSombre, Elizabeth R. 2000. The Experience of the Montreal Protocol: Particularly Remarkable, and Remarkably Particular. *UCLA Journal of Environmental Law and Policy* 19, 1: 49-81.
- George, Alexander L., and Andrew Bennett. 2005. *Case Studies and Theory Development in the Social*

- Sciences*. Cambridge, MIT Press.
- Gjerde, Kristina M, Nichola A. Clark, Clément Chazot, Klaudija Cremers, Harriet Harden-Davies, Daniel Kachelriess, Cymie R. Payne, et al. 2022. Getting Beyond Yes: Fast-Tracking Implementation of the United Nations Agreement for Marine Biodiversity Beyond National Jurisdiction. *NPJ Ocean Sustainability*. <https://doi.org/10.1038/s44183-022-00006-2>.
- İpekçi, İsmail Cem. 1972. Teknik ve Tehlike. *Milliyet*, March 11.
- Kirk, Elizabeth A. 2020. The Montreal Protocol or the Paris Agreement as a Model for a Plastics Treaty? *Ajil Unbound*. <https://doi.org/10.1017/aju.2020.39>.
- Kılıçkaya, Belkıs. 1989. Delmeyen Deodorant. *Milliyet*, July 1.
- Mazlum, Semra Cerit. 2006. Dış Politika Sorunu Olarak Çevre: Rio'dan Johannesburg'a Türkiye'de Çevre Dış Politikası ve STK'lar. In *Sivil Toplum ve Dış Politika Yeni Sorunlar, Yeni Aktörler*, eds. Semra Cerit Mazlum and Erhan Doğan. İstanbul, Bağlam Yayıncılık: 291–324.
- Mazlum, Semra Cerit. 2009. Turkey's Foreign Policy on Global Atmospheric Commons: Climate Change and Ozone Depletion. In *Climate Change and Foreign Policy: Case Studies from East to West*, ed. P G Harris. London, Routledge: 68–84.
- Milliyet. 1975. Sesüstü Hızda Giden Uçakların Deri Kanserine Yol Açtığı Öne Sürüldü. *Milliyet*, February 8.
- Montreal Protocol on Substances That Deplete the Ozone Layer. 1987. *United Nations Treaty Series* 1522 (26369).
- Oran, Baskın. 1996. Türk Dış Politikası: Temel İlkeleri ve Soğuk Savaş Ertesindeki Durumu Üzerine Notlar. *Ankara Üniversitesi SBF Dergisi* 51, 1: 353–370.
- Öztürk, Sefa. 2023. Balancing Responsibilities: The Integration of CBDR in the Montreal Protocol. *Sürdürülebilir Çevre Dergisi* 3, 2: 75–84.
- Parson, Edward A. 2003. *Protecting the Ozone Layer: Science and Strategy*. Oxford, Oxford University Press.
- Raubenheimer, Karen, and Alistair Mcllgorm. 2017. Is the Montreal Protocol a Model That Can Help Solve the Global Marine Plastic Debris Problem? *Marine Policy* 81: 322–329.
- Sprinz, Detlef F., and Tapani Vaahtoranta. 1994. The Interest-Based Explanation of International Environmental Policy. *International Organization* 48, 1: 77–105.
- Sprinz, Detlef F., and Tapani Vaahtoranta. 2002. National Self-Interest: A Major Factor in International Environmental Policy Formulation. In *Encyclopedia of Global Environmental Change Responding to Global Environmental Change*, eds. Ted Munn and Mostafa K. Tolba. Chichester, Wiley: :323–328.
- TBMM. 1988. 12 nci Birleşim 13.10.1988 Perşembe. *T.B.M.M. Tutanak Dergisi* 15, 12: 168–226.
- TBMM. 1989. 58 inci Birleşim 14.2.1989 Salı. *T.B.M.M. Tutanak Dergisi* 23, 58: 88–137.
- TBMM. 1990. Ozon Tabakasının Korunmasına Dair Viyana Sözleşmesine Katılmamızın Onaylanmasının Uygun Bulunduğu Hakkında Kanun Tasansı ve Sağlık ve Sosyal İşler ve Dışişleri Komisyonları Raporları (1/583). Esas.1/583 Karar.6. Ankara, TBMM.
- TBMM. 1992. 46 Nci Birleşim 18.12.1992 Cuma. *T.B.M.M. Tutanak Dergisi* 25, 46: 321–434.
- T.C. Resmî Gazete. 1979. Kozmetik Yönetmeliği. no. 16778.
- T.C. Resmî Gazete. 1983. 8 Ekim 1979 Tarih ve 16778 Sayılı Resmî Gazete'de Yayımlanarak Yürürlüğe Giren Kozmetik Yönetmeliğinin Değiştirilmesi Hakkındaki Yönetmelik. no. 18095.

- T.C. Resmî Gazete. 1990. “Ozon Tabakasının Korunmasına Dair Viyana Sözleşmesi” ve “Ozon Tabakasını İncelten Maddelere Dair Montreal Protokolü”. no. 20629: 1–96.
- Termodinamik. 1994. Dupond Cantaş İşbirliği İle “Soğutucu Akışkanlar” Semineri. *Termodinamik*, November. <https://www.termodinamik.info/haberler/dupondcantas-isbirligi-ile-sogutucu-akiskanlar-semineri>.
- TTGV Project Coordinator. 2022. Interview by Sefa Öztürk.
- Türkiye Çevre Sorunları Vakfı. 1983. *Türkiye'nin Çevre Sorunları '83*. Ankara, Türkiye Çevre Sorunları Vakfı.
- Türkiye Çevre Sorunları Vakfı. 1986. *Sanayi ve Çevre Konferansı*. Ankara, Türkiye Çevre Sorunları Vakfı.
- Türkiye Çevre Sorunları Vakfı. 1987. *Şehirleşme ve Çevre Konferansı*. Ankara, Türkiye Çevre Sorunları Vakfı.
- Türkiye Çevre Sorunları Vakfı. 1988. *Nüfus ve Çevre Konferansı*. Ankara, Türkiye Çevre Sorunları Vakfı.
- Türkiye Çevre Sorunları Vakfı. 1990a. *Sürdürülebilir Kalkınma Konferansı 29-30 Kasım 1989*. Ankara, Türkiye Çevre Sorunları Vakfı.
- Türkiye Çevre Sorunları Vakfı. 1990b. *Turizm ve Çevre Konferansı 3-5 Ekim 1990*. Ankara, Türkiye Çevre Sorunları Vakfı.
- Türkiye Çevre Sorunları Vakfı. 1999. *Türkiye'nin Çevre Sorunları '99*. Ankara, Türkiye Çevre Sorunları Vakfı.
- UNEP/OzL.Conv.1/5. 1989. Conference of the Parties to the Vienna Convention for the Protection of the Ozone Layer. Helsinki, United Nations.
- UNEP/OzL.Pro.1/5. 1989. First Meeting of Parties to the Montreal Protocol on Substances That Deplete the Ozone Layer. Helsinki, United Nations.
- UNEP/OzL.Pro.2/Bur/1/R.2. 1990. Bureau of the Second Meeting of the Parties to the Montreal Protocol. Nairobi, United Nations. https://ozone.unep.org/sites/default/files/Meeting_Documents/Bureaux/2mop_bur1-rev2.e.pdf.
- UNEP/OzL.Pro.3/11. 1991. Third Meeting of the Parties to the Montreal Protocol on Substances That Deplete the Ozone Layer. Nairobi, United Nations.
- UNEP/OzL.Pro/ExCom/8/17. 1992. Turkey Country Program For Phaseout of Ozone Depleting Substances. Montreal, UNEP.
- Ural, Engin. 2014. *Çevremizde 40 Yıl Anılar, Düşünceler*. Ankara, Efil.
- Vienna Convention for the Protection of the Ozone Layer. 1985. *United Nations Treaty Series* 1513 (26164): 293.