

# Non-Governmental Organizations' Efforts to Protect Stratospheric Ozone

# Abstract

In 1987, the international community adopted the Montreal Protocol on Substances that Deplete the Ozone Layer – subsequently labelled as one of the most successful environmental treaties of our time. In 1992, Peter Haas emerged with a study on epistemic communities and their efforts to protect stratospheric ozone. According to Haas’ research, epistemic community members – consisting of United States government officials and atmospheric scientists from the international community – affected the U.S. national stance for rulings on ozone depleting CFC substances, eventually leading to the adoption of stringent regulations through the Montreal Protocol.

However, in this essay it is argued that Haas’ work offers only a limited explanation of the processes that led to the formation of the Montreal Protocol and its subsequent ratifications due to the fact that activities of non-governmental organizations have not been sufficiently well acknowledged. It is argued that NGOs played a vital role in the process by: (1) partaking in governmental lobbying, (2) raising public awareness of ozone depletion, (3) endorsing the usage of environmentally friendly alternatives to CFC substances, and (4) affecting the outcome of the Second Meeting of the Parties in London 1990, when the weak stipulations of the first rendition of the Montreal Protocol were considerably strengthened.

*Keywords:* The Montreal Protocol, non-governmental organizations (NGOs), epistemic communities, ozone layer, Peter Haas

*Words:* 10000

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# 1. Introduction

The Montreal Protocol on Substances that Deplete the Ozone Layer has been cited as one of the most successful environmental treaties ever signed. In a report from 2007, the UNEP declared that the 191 parties involved with the protocol had reduced their consumption of ozone-depleting substances by 95 percent. Most of the Protocol's phase out goals were completed before the scheduled deadline (UNEP, 2007: 1).

In 1992, Peter Haas published a renowned paper on the formation of the Montreal Protocol titled “Banning Chlorofluorocarbons: Epistemic Community Efforts to Protect Stratospheric Ozone”. The study gave the world an interesting glimpse into the inner workings of members of scientific communities in regards to their efforts to protect stratospheric ozone. In his essay, Haas examined the behaviour of the United States during the negotiations leading up to the Montreal Protocol. The U.S. interests were initially perceived as somewhat vague by the international community, standing in stark opposition to their support for strong regulations of ozone depleting chlorofluorocarbon substances (CFCs) later in the process (Haas, 1992: 189). This policy-change is contributed to the influence of epistemic communities.

On the contrary, it can be argued that Haas’ work offers only a limited explanation of the processes which led to the formation of the Montreal Protocol, due to the fact that activities of non-governmental organizations (NGOs) have not been sufficiently well acknowledged. It is argued that NGOs played a vital role in the process, and that they did so in four main ways, by: (1) partaking in governmental lobbying, (2) raising public awareness of ozone depletion, (3) endorsing the usage of environmentally friendly alternatives to CFC substances, and (4) affecting the outcome of the international ozone negotiation in London 1990, when the weak stipulations of the first rendition of the Montreal Protocol were considerably strengthened.

## 1.1 Motivating the need for an updated view on the Montreal Protocol

The need for further research on NGO activities in relation to the issue of ozone depletion stems from three main reasons:

First, since Haas' study (published in 1992), a substantial body of research in the same area has emerged that clarifies various aspects of the processes that led up to the Protocol's formation.

Second, it may be argued that at present, the need for efficient international agreements regarding environmental challenges is perhaps greater than ever. Following King et al. (1994: 15), it is of great importance that any study made on these subjects is consequential for economic, social or political life, and that it can be used for gaining an understanding of something that affects the lives of many people.

Third, the research field of social sciences is overall lacking a comprehensive account of NGO activities in relation to the issue of ozone depletion. An important criterion which is relevant to the choice of research question is that the work should contribute to the existing stock of social science theories and frameworks. That is, the study shall not duplicate what has already been done, and also that it shall build upon the collective knowledge of others (King et al, 1994: 15-16).

## 1.2 Purpose and Research Question

In his 1992 paper, Haas (1992: 218) cemented his view on the role of NGOs, stating, "in general, public sentiment and the activities of non-governmental organizations such as Friends of the Earth had little direct impact on the adoption of CFC controls". The purpose of this essay relates to the aforementioned quote by Haas, and that is to determine what impact NGOs had on CFC reductions. It is important to understand that it was not only forced regulations that contributed to a decrease in CFC usage, but changes also came about through voluntary industry phase out plans spurred by NGO activities. Consequently, the following research question has been chosen: *What impact did non-governmental organizations have on the implementation of CFC reductions?* The definition of "CFC reductions" is specified in the method section (3.2.2).

## 2. Previous research

This chapter accounts for some of the previous research that has been conducted on the Montreal Protocol and the role of NGOs in international decision making. Section 2.1 includes an overview of Haas' epistemic community theory, followed by some of the criticism that has been directed towards Haas' work. Lastly, an account of NGOs and their influence in the field of international governance is provided (2.2).

### 2.1 The Epistemic Community theory by Peter Haas

Haas defines an epistemic community as “a knowledge-based network of specialists who shared beliefs in cause-and-effect relations, validity tests, and underlying principled values and pursued common policy goals” (Haas, 1992: 187). Essentially, an epistemic community is a group of scientists or highly knowledgeable individuals pursuing a specific goal, for example a policy that regulates the usage of ozone-depleting substances. The epistemic communities working for the protection of the ozone-layer consisted of officials from the U.S. Environmental Protection Agency (EPA), the United Nations Environment Programme (UNEP), the U.S. State Department's Bureau of Oceans and International Environmental and Scientific Affairs (OES) as well as atmospheric scientists from the international community – all with the shared agenda of environmental conservation (Haas, 1992: 190). An epistemic community starts from an empirical finding on a phenomenon that evokes moral or ethical feelings due to its social, environmental or cultural implications. The finding creates a common agenda amongst the members, as they all share a strong normative commitment to the same cause. When the epistemic community is established, it can start to exert its influence (Haas & Adler, 1992: 2).

An important political resource at the members' disposal is their ability to translate scientific findings into concrete policy advice. In the time leading up to the ratification of the Montreal Protocol, scientists from the epistemic communities briefed politicians on the development of scientific evidence on ozone-depletion, thus affecting them in their decision-making process (Haas, 1992: 196).

After the epistemic community is established, a process of framing the issue, defining state interests and setting standards begins. The policy measures that governments might implement are deemed as largely dependent on how they perceive the severity of the issue in question. By collecting and interpreting scientific data, the epistemic communities guide decision makers in the choice of which institutions to consult to counter the issue at hand. The communities' ability to frame an issue was particularly evident in regards to CFC-usage in the 1970s. Before 1972, CFCs were not widely considered harmful. Owing to efforts from the ecologic epistemic community, governments subsequently recognized CFCs as pollutants and began coordinating measures to counter the problem (Haas & Adler, 1992: 376).

Furthermore, epistemic communities act as megaphones, distributing knowledge on a global scale. In the absence of international communication, knowledge is confined to a single organization, government or research group. The communities' members aid in the process of information distribution by communicating with colleagues from other nations, either through direct meetings, conferences or other methods of exchanging knowledge (Haas & Adler, 1992: 378).

### 2.1.1 Haas' views on NGOs

Haas has presented rather ambiguous views on NGOs throughout his research. For example, Haas acknowledges that the UNEP established the Coordinating Committee on the Ozone Layer (CCOL), which consisted partly of representatives of "nongovernmental organizations with active ozone layer research programs". The committee met eight times between 1977 and 1988, while subsequently reporting its findings in the Ozone Layer Bulletin. Therefore, it is noteworthy that Haas has diminished the role of NGOs, especially considering the fact that some of the organizations' key figures were directly involved in the UNEP Committee (Haas, 1992: 201). Furthermore, Haas (1992: 218) claims that "they [NGOs] tended to merely reinforce government regulations that had already been introduced". This statement, however, has little basis in reality. Instead, it is more likely that NGOs did not only help in framing the issue of ozone depletion, but also actively invoked policy change, aided in the process of developing alternatives to harmful CFC substances, and directed peoples' sentiments in favour of regulations on ozone depleting substances.

### 2.1.2 Criticism towards the Epistemic Community-theory

Dunlop (2002: 1) has directed criticism at Haas for being ambiguous about the epistemic communities' interactions with other actors, stating that "the inability of Haas to provide a convincing conceptualisation of the connections between epistemic communities and wider groups stems from his initial construction of the concept and its empirical undernourishment". It can be argued that the theory on epistemic communities builds upon vague empirical evidence, which might explain why it has largely avoided refinement since it was first published. First, there lies a basic methodological complexity in even identifying the epistemic communities, let alone in operationalizing their perceived influence. Second, after successfully identifying an epistemic community, a researcher will encounter the practical obstacles of gaining access to and locating its members. This might explain why few scholars have attempted to critically examine the empirical grounds that Haas' theory rests upon (Dunlop, 2002: 8).

Haas is also evasive when discussing the actual amount of power that the epistemic communities can exert. As Liftin (1994: 12) points out, "Epistemic communities approaches downplay – almost to the point of neglect – the ways in which scientific information simply rationalises or reinforces existing political conflicts". Thus, it is difficult to say to what degree

epistemic communities contributed to the cause of framing the ozone-depletion issue. Moreover, in highly political arenas where epistemic communities operate, like in the time leading up to the Montreal Protocol, it can be disadvantageous to be apolitical. The perceived influence of the epistemic communities originates from the bargaining power they hold with other actors, and the bargaining happens through a process of information distribution (Sebenius, 1992: 325). This claim is supported by a quote from Haas (1992: 188) himself, in which he also verifies the importance of information dispersal: “The community channelled discussions toward a strong ozone treaty by spreading information that suggested the need for stringent international CFC controls”. However, as pointed out by Dunlop (2002: 9), if epistemic community members are to spread information, they also have to interact with a myriad of other actors. Naturally, this leads Dunlop to the conclusion that the amount of influence epistemic community members’ can exert varies greatly as wider strategic games are played out. In such a scenario, the full implications that can come from consensual scientific knowledge emanating from epistemic communities may only be realised “through the involvement of other, more politically astute, groups”.

Furthermore, as stated by Haas (1992: 221), the epistemic community acted on the ozone issue by “disseminating information to government and corporate decision makers”. What Haas has neglected here is the broader form of information distribution; the one that is directed to the general public. As will be accounted for over the course of this essay, NGO efforts to inform the general public did emanate in concrete results, such as the 1989 CFC phase outs in Britain. It can therefore be argued that NGOs filled an important role in the collective effort to protect the ozone layer that the epistemic community could not, due to the fact they were more adept at dispersing information to a broad spectrum of people. Also, in relation to the critique issued by Dunlop, NGOs showed evidence of their political prowess by filing lawsuits that led to both CFC bans and faster phase outs in the United States.

## 2.2 The extent of NGO influence

*“NGOs are no longer seen only as disseminators of information, but as shapers of policy and indispensable bridges between the general public and the intergovernmental processes”*

- Kofi Annan (1998), former UN Secretary-General

NGOs can inarguably be seen as an emerging actor in the field of international governance, and in no area are they as established as in the field of environmental action (Jasanoff, 1997: 579). On the subject of NGOs and decision making in environmental affairs, the World Commission on Environment and Development stated in a report from 1987 that “governments need to recognize and extend NGOs’ right to know and have access to information on the environment”, and not only that, but NGO have long been recognized as crucial contributors to the task of environmental conservation by the UNEP (Jasanoff, 1997: 580).



### 2.2.1 Constraints and opportunities associated with NGO influence

Professor David Potter (1995: 33), a contributor to *Environmental Policy in an International Context*, has identified a number of constraints and opportunities associated with NGO influence in relation to environmental issues. In 1992, Mustafa Tolba, Executive Director of the UNEP, identified ten pressing matters of environmental concern in the world. Of the ten, Tolba concluded that the case of stratospheric ozone depletion was the one that had gone the furthest in regards to international agreements and conventions. Conversely, the issues of climate change, deforestation, desertification, water quality, land degradation and environmental disasters had hardly seen any advancement in terms of policy implementations. Potter argues that NGO influence increases when there are some policy measures already taken on the area for three different reasons. First, if there is an international treaty (such as the first instance of the Montreal Protocol, 1987) agreed upon on the matter, governments are committed to counter the issue. This provides a favourable environment for NGOs, as they can start lobbying activities and measure the amount of progress that involved parties are making. Second, party meetings provide arenas where NGOs can expand their policy networks and project their views. Finally, once an initial agreement has been reached, focus is to some extent shifted from agenda setting to policy implementation, the latter of which Potter believes NGOs have further leverage in. He cites the reason for this as due to the fact that governments tend to rely on NGOs for public support and for monitoring issues. Potter's findings might therefore indicate that NGO influence increased after the first instance of the Montreal Protocol was agreed upon, thus affecting the ensuing revisions to a greater extent.

## 3. Method and Limitations

### 3.1 Limitations

The study is limited to only explaining the underlying causes for the success of the Montreal Protocol, and have largely discarded its actual implications globally. The reason for this is quite simple – the treaty is already widely regarded as being effective (see, for example, Mäder et al., 2010: 8), whereas there exists more controversy in determining what the contributing factors for its success were.

In addition, the essay is focused solely on the affecting factor of NGO-influence. As pointed out by Andersen and Sarma (2002: 353-360), two UNEP officials that accounted for the United Nations history in regards to the issue of ozone depletion, there were factors other than NGO activities that could have been of great importance for the successful outcome of the Protocol, such as trade measures, the establishment of the Multilateral Fund or industry cooperation. However, on the subject of limitations, Nørretrander issued the following statement: “A complete explanation of the world takes up as much space as the world itself” (Teorell & Svensson 2007: 98). This remark is very much applicable to the case of the Montreal Negotiations. With 186 participating countries, and thousands of people involved in the process, it would be virtually impossible to ponder every factor that could have affected the outcome. Therefore, alternative affecting factors have been discarded, and the essay remains concentrated on the role of NGOs.

Furthermore, the study has been limited to the initial 1987 rendition of the Montreal Protocol, its subsequent revision at the 1990 meeting in London, as well as the development of alternatives to CFCs. The decision to include the 1990 revision in London has been made since the initial Montreal Protocol was perceived as not stringent enough. Andersen and Sarma (2002: 94), provides a speaking remark: “even before the ink was dry [on the Protocol] it was clear to delegates and scientists that the mild controls of the Protocol would not result in the protection of the ozone layer”. Therefore, it is interesting to determine if NGO influence affected not only the outcome of the first, weak instance of the Protocol, but if they also contributed to its subsequent strengthening. As indicated by Potter’s (1995: 33) findings on the matter, this might be the case due to the fact that NGO influence is increased once an initial agreement is in place, thus having a greater effect on any following revisions.

## 3.2 Method

The method section commences with a description and definition of the term *NGO*, and a specification of which organizations that are included in this study (3.2.1). Moreover, the method used to measure the success of NGO activities in achieving CFC reductions is described (3.2.2).

### 3.2.1 Defining environmental NGOs

This essay focuses on a specific type of actor in civil society – the NGO. In a broad sense, the concept “civil society” encompasses all institutions, organizations and persons in pursuit of conveying or advancing a shared purpose through actions, ideas or demands on governments (Gemmill & Bamidele-Izu, 2002: 3). The term “NGO” can essentially be applied to a large array of different actors, ranging from small coalitions of activists to well-funded, multinational organizations with significant technical and political capabilities (Jasanoff, 1997: 580). Charnovitz (2006: 350) provides a definition of NGOs as “groups of persons or of societies, freely created by private initiative, that pursue an interest in matters that cross or transcend national borders and are not profit seeking”. Indeed, the term NGO encompasses a diversity of actors, with various functions, forms and areas of expertise, and as stated by Jasanoff (1997: 580), “the only structural feature they have in common is their formal independence from the state”. It is therefore essential to differentiate between the various existing non-governmental organizations, and to give a specification of what type of organizations I refer to when I use the term *NGO*.

On a general level, it is possible to distinguish between two types of NGOs – the *self-benefiting* organizations, and the *other-benefiting*, respectively (see, Yaziji & Doh, 2009: 6). Self-benefiting NGOs are associations that are designated to primarily provide a benefit to their members. Some examples of self-benefiting NGOs are business and/or trade associations as well as labour unions. Other-benefiting NGOs, on the other hand, are organizations in which the contributors of labour and capital are not members of the intended beneficiary group, or if the benefits that come with the organizations’ activities are shared by a great number of people (such as in the world encompassing issue of ozone depletion).

Furthermore, it is possible to make a distinction between *advocacy* and *service* NGOs (see, Yaziji & Doh, 2009: 8-9). Yaziji and Doh (2009: 9) define the role of service NGOs as the ability to “provide goods and services to clients with unmet needs.” Service NGOs, such as the Red Cross or Doctors Without Borders, provide societal needs and undertake relief efforts in nations where the state is either unwilling or unable to provide such needs itself. Advocacy NGOs take a different approach, and instead work to shape the political, societal or economic system by promoting their interests through active means. Their methods contain elements of lobbying, disseminating information, agenda setting, holding conferences, and/or organizing boycotts and promoting codes of conduct (Yaziji and Doh, 2009: 8, 11).

This essay is concentrated on other-benefiting, advocacy NGOs with environmental

agendas. On a more specific level, the activities of three NGOs with the aforementioned characteristics (and their respective country divisions) have been examined, namely Friends of the Earth (FOE), the Natural Resources Defence Council (NRDC) and Greenpeace. These specific organizations have been chosen owing to their high degree of involvement in regards to the ozone depletion issue.

### 3.2.2 Measuring the success of NGO activities

This is a qualitative desk top study based on an analysis of available historical material in the form of research papers. The methodology chosen for conducting a qualitative study is in accordance with King et al (1994: 4), meaning that it covers historical material (in the form of research that has previously been carried out), provides a comprehensive account of an event (e.g. NGOs and their connections to the issue of ozone-depletion), and contains an element of analysis.

To quantify and measure the extent of an arbitrary concept such as “NGO influence” is difficult and implies the need to carefully consider and define a methodical approach. Greenpeace has acknowledged this problem in a report on the organization’s involvement in the ozone issue, stating that it is seldom “possible to draw a direct cause-and-effect relationship between Greenpeace’s campaign activities and demands and governmental policy shifts. Such a relationship can only be drawn by inference.” (Maté, 2001: 11). The statement was prompted by the assumption that governments rarely wish to credit non-governmental organizations with influencing governmental policies. Hence, the possible impacts related to NGO activities in achieving CFC reductions are addressed through studying four different aspects of the NGOs work: (1) Governmental lobbying, (2) the endorsement of environmentally friendly alternatives to CFCs, (3) raising public awareness of ozone depletion, and (4) involvement in international ozone negotiations. For each of the four aspects (detailed in the sections below), one or more criteria have been used to assess whether NGO activities have successfully had an impact on CFC reductions. “CFC reductions” is defined as a decreased prevalence of CFC substances in the world, as a result of legislative changes in various countries, industry phase outs and/or swaps to environmentally friendly alternatives and/or policy implementations in international negotiations.

### 3.2.3 Governmental lobbying

One important aspect of NGOs are their abilities to influence governments by criticising the “accepted frameworks of environmental knowledge” (Jasanoff, 1997: 581). NGOs can do this by making sure that countries uphold their environmental obligations through partaking in litigations against governmental institutions. In the US, for example, it is possible for public actors to file lawsuits against violators of the environmental legislation. NGOs can also partake in governmental lobbying by disseminating scientific findings to governmental

officials by arranging conferences or meetings (Jasanoff, 1997: 586).

The success of NGO activities in governmental lobbying is considered by assessing whether there is evidence that their actions directed towards governments (or their institutions) have led to legislative changes with an observable impact on CFC reductions.

### 3.2.4 The endorsement of environmentally friendly alternatives to CFCs

NGO activities in relation to the ozone issue can also include involvement with industry in identifying and promoting the usage of environmentally friendly alternatives to CFCs. Successful NGO activities in relation to the promotion of environmentally safe alternatives can take on two main forms (see, for example, Gilfillan, 2002: 332-333). First, NGOs can persuade the industry into switching to already existing friendly alternatives by persuading company officials. Second, NGOs can develop and/or promote their own alternatives to CFCs, which the industry then chooses to implement in their manufacturing process.

The success of NGO activities in this regard is considered through assessing if industry in any country have switched to environmentally friendly alternatives owing to NGO persuasion, and/or the promotion of an NGO developed environmentally friendly alternative.

### 3.2.5 Raising public awareness of ozone depletion

One of the strong points of NGOs are their abilities to raise public awareness – they may for example, through their actions, turn people into active and knowledgeable consumers instead of them being passive bystanders (Wuori, 1997: 116). Thus, by raising the awareness of the general public, NGOs can have an impact on CFC reductions. This can happen through organizing boycotts and/or informing the public about the dangers of goods that contain ozone depleting substances, which in turn can lead to industry phase outs due to diminished demand for products that harm the ozone layer (Cook, 1990: 336).

The success of NGO activities is considered through investigating whether a sector of industry chooses to phase out products that contain ozone depleting substances owing to NGO activities which in turn led to changes in consumer behaviour (such as, for example, a boycott instigated by NGOs).

### 3.2.6 NGO involvement in international ozone negotiations

International ozone negotiations provides NGOs with a forum to pressure governments to strengthen global legislation on ozone depleting substances. After the 1987 rendition of the Montreal Protocol, parties were required to periodically assess the implemented control measures. Since the UNEP's policy permits NGOs to attend and present their views during international negotiations, environmentalists are provided with an opportunity to advocate

their position to delegates (see Cook, 1990: 336-337). The success of NGO activities in this regard is considered through investigating whether NGOs have managed to successfully lobby for the inclusion of a specific policy proposals in a negotiated agreement.

A second way in which NGOs can impact negotiations is if they have managed to influence the negotiation position of one or more governments prior to the meetings (see, Rietig 2011: 6-8). The success of NGO activities in this respect is considered through assessing if an attending governments' stance on the ozone issue has changed as a result of, for example, a swing in the national public mood that is a direct result of NGO actions. In addition, for NGO activities to be considered a success in this regard, the government in question has to be deemed an important factor for the overall outcome of the negotiation.

## 4. Governmental lobbying

The views presented by Haas' stand in stark contrast to the views presented by Corinna Gilfillan (2002: 323), a former consultant involved with the UNEPs OzonAction Programme, who claims that "[NGOs have] identified and promoted policies and measures to implement the Protocol faster than mandated; advocated ozone and climate safe and environmentally sustainable technologies; forged alliances with industry and governments; served as watchdogs not only on illegal trade, but also on many other issues; and generally striven to ensure that the goals of the Montreal Protocol are achieved".

CFCs, or chlorofluorocarbons, refer to all fully halogenated compounds containing fluorine, chlorine and carbon – all with a variety of industrial uses such as in refrigeration, air conditioning, aerosol propellants or manufacturing of electronic parts. In 1974, two scientists from the University of California at Irvine, Mario J. Molina and F. Sherwood Rowland, presented a hypothesis that when CFCs enter the stratosphere, a chain reaction follows, in turn destroying thousands of ozone molecules. It was estimated that if industry continued to release CFCs at an unobstructed pace, atmospheric ozone would eventually drop by 7 to 13 percent (Andersen & Sarma, 2002: 9-10). NGOs involvement in the CFC issue started in 1974, after a coalition of environmental groups helped organize a press conference where Molina's and Rowland's hypothesis was promoted (Gilfillan, 2002: 324). Following the conference and the popularization of the Molina–Rowland hypothesis, the United States introduced the first bans on CFCs with the Clean Air Act of 1977. Subsequently, other nations followed suit, with the notable exceptions of the Soviet Union and Japan, which both pointed towards the vague causal relationships associated with the scientific findings. In 1977, delegates from 39 countries attended a UNEP organized conference in the United States, which led to the first international treaty on the matter (Grundman, 2000: 2). Participants of the meeting agreed upon the World Plan of Action on the Ozone Layer, and established the Coordination Committee on the Ozone Layer (CCOL), composed of experts from the agencies and NGOs that participated in the World Plan of Action. CCOL acted as a coordinator of international research, and continuously presented its findings to policymakers. The Committee met once a year from 1975 to 1985, and remained the only formal international institution with the ozone issue as its sole focus until January 1982 (Levy et al, 1993: 35-36).

The Natural Resources Defence Council (NRDC), a non-profit international environmental advocacy group, was early on an especially active actor involved in the ozone issue, and stood responsible for a number of legislative changes on CFC-usage after filing complaints against U.S. agencies. In a case from 1974, the NRDC petitioned the U.S Consumer Product Safety Commission (CPSC), the Food and Drug Administration (FDA)

and the Environmental Protection Agency (EPA) to implement a ban on CFC aerosol products. As a result, the CPSC banned the manufacturing of CFCs for non-essential aerosol products by 1978, and prohibited interstate import and shipment of the same products by 1979 (Gilfillan, 2002: 330). The efforts to ban aerosol products generated extensive media coverage in the United States, peaking in 1977 and 1978. The media coverage helped trigger a change in consumer behaviour, with reports of the time stating that demand for aerosol sprays with CFC propellants was diminished significantly. For example, the Gillette Company – a market leader in its segment – quickly lost market shares as the company's deodorants included CFCs. The FDA Commissioner Donald Kennedy was later even quoted saying that ozone layer depletion could have adverse effects on the climate and increase the incidence of skin cancer (Smith & Canan, 2002: 297).

In 1983, the NRDC compelled the EPA to determine if action was necessary to protect the ozone layer. After court orders, the EPA was ordered to evaluate the consequences of continued emissions of ozone-depleting substances. Three years later, in 1988, the U.S. government agreed on the Ozone Protection Plan as a direct result of the NRDC's threat to sue the EPA for breach of the Clean Air Act.

## 4.1 Conclusion on governmental lobbying

NGOs had a measurable impact on CFC reductions through NRDC's litigations against U.S. governmental agencies, starting with the ban on manufacturing and transportation of non-essential aerosol products in the late 1970s. Furthermore, after the NRDC helped promote the Molina-Rowland hypothesis, the United States government implemented bans on CFCs in 1978 with the Clean Air Act. Finally, the NRDC subsequently used the Clean Air Act in 1983 to sue the EPA, resulting in the adoption of the Ozone Protection Plan in 1988.



## 5. The endorsement of environmentally friendly alternatives to CFCs

A key controversy related to the protection of the ozone layer, which was not covered by Haas in his essay on epistemic communities, concerns the chemical companies' choice of substitutes to CFCs. It is possible to argue that a crucial factor behind the companies' decision to accede to the growing pressure from scientists, environmentalists and the public to phase out CFCs was the availability of an economically viable, environmentally friendly alternative (see, Toke, 1998: 100-102).

### 5.1 Greenpeace's development of an environmentally friendly alternative to HCFC and HFC substances

As pointed out by David Toke (1998: 101), the chemical companies initially pursued a switch to hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs). Greenpeace protested, voicing concerns that HCFCs and HFCs would also pose a threat to the ozone-layer, as well as contribute to global warming. The policy problem regarding the companies' inclination for a shift towards halocarbons such as HCFCs and HFCs proved hard to counter for the scientific communities. At the time there were several epistemic communities dealing with the issues of CFCs, thus producing a problem of coordination. Greenpeace also played a role in the controversies regarding hydrocarbons, which were seen as a possible replacement to CFCs instead of the HCFCs and HFCs advocated by the chemical companies. Hydrocarbons are not ozone-depleting, and have a small potential for increasing global warming. There was only one issue with hydrocarbons seen from the chemical companies' viewpoint – they were unpatentable and therefore economically disadvantageous. Historically, hydrocarbons had been abandoned in the 1930s for usage as coolants due to fears of their flammability. Greenpeace challenged the perceptions of the past, and funded a manufacturer in former East Germany to use hydrocarbons as coolants in refrigerators. After Greenpeace's endorsement, the usage of hydrocarbons spread amongst all the major German manufacturers and other continental refrigerator producers. Nowadays the notion of the flammability of hydrocarbons has largely been discredited, and development in the manufacturing process since the 1930s seems to have eradicated any perceived safety problems (Toke, 1998: 101-102).

### 5.1.1 A solution to harmful foam packaging

Environmental groups were not only involved in the refrigeration industry, but also contributed to positive changes in the food packaging industry. In 1988, FOE-USA, the U.S. EPA, the Center for Global Change, NRDC, and the Environmental Defence Fund (EDF) gathered together in an attempt to develop a solution to the harmful usage of foam packaging. The packaging manufacturers put up weak resistance – perhaps sensing the pay offs associated with good will – and agreed to end their usage of CFCs by the end of the same year. A working group was formed for the purpose of developing an environmentally sound alternative, and NGOs subsequently publicly praised the industries' determination to protect the ozone layer (Gilfillan, 2002: 342).

Some local governments, such as the Berkeley City Council in California, even explicitly outlawed CFCs in food packaging following the pressure from environmental groups. Three NGOs in the United States sought to translate the success into a nationwide industry phase out of CFCs. The U.S. agreement soon caught on in other countries, leading to similar voluntary phase-out plans in the Netherlands, the UK, and Canada. In the Netherlands, companies soon reported that they would stop using CFCs. In Canada, a major egg carton maker switched its production to an environmentally friendly alternative. In the U.K, all fast-food restaurants and supermarkets ceased to use packaging made with CFCs (Cook, 1990: 335).

## 5.2 Conclusion on the endorsement of environmentally friendly alternative to CFCs

Following Greenpeace's development of an environmentally friendly alternative to HCFCs and HFCs, German and other European refrigerator producers ceased to use ozone depleting substances in their manufacturing process – thus resulting in an impact on CFC reductions. Furthermore, FOE-USA, the NRDC and others persuaded the U.S. industry to switch to environmentally friendly alternatives to CFCs in the food packaging industry. Following the U.S. success, the same agreement was reproduced in other countries such as the Netherlands, the UK, Canada and the Netherlands.

## 6. Raising public awareness of ozone depletion

This chapter provides an account of NGO efforts to raise public awareness of ozone depletion. On a specific level, the activities of one specific NGO – Friends of the Earth – have been examined. Through organizing a public boycott of aerosol spray cans containing CFCs, FOE’s UK division forced the British industry to schedule a phase out of ozone depleting substances.

### 6.1 FOE’s boycott in the United Kingdom, 1988

In 1987, after the signing of the Montreal Protocol, Friends of the Earth International raised the ozone-layer issue to the top of their agenda, calling for a world encompassing ban on CFC aerosol products. Even though aerosol cans had already been banned in the United States, Scandinavia and Canada, they were still in major use in the UK, West Germany, Australia, France, The Netherlands, Hong Kong and other countries. To counter the problem, FOE called on the industry to phase out aerosols, and arranged widespread consumer boycotts. In the UK, aerosol products accounted for a majority of CFC emissions, with 62% of the substance going into spray cans. The annual amount of spray cans produced exceeded well over 700 million – with each consumer buying twelve cans every year on average. FOE-UK had pressured the industry for years to change the formula of their products, but had thus far been unsuccessful. In 1987, however, the group ramped up their efforts, and launched into a full-scale campaign of consumer boycotts (Cook, 1990: 335).

In an attempt to raise consumer awareness, FOE issued a pamphlet called “The Aerosol Connection” which listed CFC-free products. On the release day of the fact sheet, several activists were seen demonstrating at the headquarters of Britain’s biggest CFC producer – the ICI – dressed up as spray cans. Nearing the new year of 1988, the industry stood unfazed by the antics. Even though FOE had distributed 40,000 copies of “The Aerosol Connection” and published advertisements in the national press, the manufactures remained passive. In response, the organization called on a public boycott of the twenty most well-known CFC-based products on 20, February, 1988. Three days before the boycott was to commence, the industry announced a phase out of CFCs scheduled at the end of next year (Cook, 1990: 335).

Charles, Prince of Wales, who had been intensely active in the ozone issue, presented a supporting statement for the FOE boycotts, saying that the 50 percent reduction in CFC emissions had “actually been made possible by the thousands of ordinary consumers and environmentalists whose concerted pressure persuaded the aerosol manufacturers to phase out their use of ozone-depleting CFCs by the end of this year [1989]” (as quoted in Gillfillan,

2002: 340). The statement attracted significant media attention, and was featured in a front page story in the *Daily Telegraph* (Smith & Canan, 2002: 305). As pointed out by Gilfillan (2002: 340), the British media coverage of NGO activities “helped draw greater attention to the industry’s role in causing ozone depletion”.

### 6.1.1 Conclusion on raising public awareness

The activities of FOE-UK undoubtedly affected the national public mood in the United Kingdom, which in turn led to a British industry phase out of CFCs. Thus, NGO activities in relation to raising public awareness of ozone depletion may be deemed successful in achieving CFC reductions.

## 7. NGO involvement in relation to international ozone negotiations

This chapter describes NGO activities in relation to three different international ozone negotiations: the 1987 Montreal Protocol, the 1989 London Conference, and the Second Meeting of the Parties in London 1990. It will be concluded that NGOs activities in all likelihood did not affect the 1987 rendition of the Montreal Protocol. In contrast, however, it will be argued that FOE's United Kingdom boycotts may have influenced the outcome of the Second Meeting of the Parties in London 1990. Also, findings (presented in section 7.3.1) implies that the NRDC successfully managed to lobby for the inclusion of maximum target reductions in the London agreement, thus having a tangible impact on CFC reductions.

### 7.1 The Montreal Protocol of 1987

In September 1987, delegates from 55 countries, the EEC, multiple industry organizations, six UN organizations and six NGOs finally met in Montreal. After intense negotiations, the Montreal Protocol on Substances That Deplete the Ozone Layer was agreed upon on 16 September. However, as pointed out by Andersen and Sarma (2002: 95), the Montreal Protocol was not stringent enough, and did little or nothing to protect the ozone layer. Soon after the signing of the Protocol, a report by the multinational group Ozone Trends Panel was released that presented indisputable evidence for the link between CFC emissions and depletion of the ozone layer. Simultaneously ozone depletion reached a historic high (Haas, 1992: 213).

Even though some NGO attended the actual Montreal negotiations, there had been a noticeable lack of participation from environmental groups between 1985 and 1987. In 1985, the UNEP invigorated the diplomatic process with the signing of the Vienna Convention. Nevertheless, NGO involvement defaulted (Gilfillan, 2002: 324). As pointed out by Richard Benedick (1998: 88), the United States Chief Negotiator on the ozone issue, not a single environmental group attended the Vienna Convention, and only a few participated at the signing of the Montreal Protocol two years later.

### 7.1.1 Conclusion on the 1987 Montreal Protocol

No research findings have been encountered that supports the notion that NGO activities influenced the 1987 rendition of the Montreal Protocol. The conspicuous lack of involvement from non-governmental actors in the years leading up to the Protocol might be ascribed to lack of funds or the inability to maintain governmental and public interest (Gilfillan, 2002: 322).

However, when non-governmental organizations did not attend the signing one of the precluding meetings to the Montreal Protocol – Vienna Convention in 1985 – Peter Sand, head of the legal division in UNEP at the time, wrote an article about the agreement which stated that environmental NGOs would need to ramp up their involvement if effective international action was ever to come about (Sand, 1990).

## 7.2 The 1989 London Conference

*"Finally, the alarm bells are ringing loud enough for the global public and heads of state and government to hear,"*

- Mostafa K. Tolba, at the closing speech of the 1989 conference in London (as quoted in Stammer, 1989).

On 5-7 March 1989, the UNEP and UK government together organized the London Conference on Saving the Ozone Layer, which attracted representatives from more than 120 countries. In the run up to the conference, the media had directed their attention to a wide array of topics related to the ozone layer, such as a scientific report on ozone levels over the Arctic and the changing U.S. position on CFC phase-outs. A particularly stressing point was to convince as many nations as possible that there was a real danger associated with ozone depletion (Smith & Canan, 2002: 303). The meeting saw a remarkable level of NGO involvement with more than 90 attending organizations, standing in sharp contrast to the handful that had participated in Montreal two years earlier (Benedick, 1998: 88).

The conference turned out to be a success, and was subsequently labelled as an important political milestone for protecting the ozone layer (Benedick, 1998: 123). The meetings paved the way for the ratifications that were to take place at the First Meeting of the Parties, scheduled two months later in Helsinki. Delegates expressed their concern over the ozone layer, and were in general supportive of the Montreal Protocol. The ultimate objective was set for a total elimination of halons and CFCs – a goal that had only 18 months earlier been seen as unacceptable by the United Kingdom and the EC commission. By the end of 1989, 18 additional nations had ratified the Protocol owing to the negotiations of the London conference. Contrary to what had been the case for the 1987 Montreal Protocol, there now seemed to be a more widespread agreement on the validity of the science (Benedick, 1998: 123).

### 7.2.1 Did NGO activities change United Kingdom's negotiation stance prior to the London Meetings?

In September 1987 one of the meetings that precluded the Montreal Protocol was held in Geneva. In the negotiations the United Kingdom was being blamed for blocking an agreement on CFC constraints following the country's opposition towards the strong regulations proposed by USA and the Scandinavian countries – a behaviour instigated by the British industry (Andersen & Sarma, 2002: 80). Judging by this, the industry arguably had some influence over British foreign policy on the matter of ozone regulations. It is therefore noteworthy the United Kingdom helped organize the 1989 Conference in London, and also that the country became a proponent for strong regulations at the Second Meeting of the Parties in London 1990 (covered in section 7.3).

In fact, the United Kingdom, led by Prime Minister Margaret Thatcher, was one of the last countries to support the Montreal Protocol. It is possible to argue that United Kingdom's newly adopted concerns for the ozone layer can to an extent be ascribed to FOE-UK's boycotts in 1988 (see chapter 6). As has been acknowledged by Haas (1992: 217), the British position on the ozone issue "had been essentially driven by the Department of Trade and Industry, which was oriented towards Britain's sole CFC producer, Imperial Chemical Industries". Consequentially, it can be argued that a major affecting factor for Britain's altered stance on the ozone issue stems from the change in British industry attitudes, which were a direct result of FOE-UKs efforts. In a speech at the Ozone Layer Conference in the following year, Prime Minister Thatcher (1990, June 27) even acknowledged the fact that environmental organizations had successfully convinced the general public of the dangers of ozone depletion, stating, "you see the evidence for this in the far greater number of people who are using their purchasing power in the shops to buy ozone-friendly products. At the end of the day it is their habits, their choice of products, the care which they exercise which will be crucial." However, Thatcher's changed stance on the issue can similarly possibly be explained by her encounters with scientific evidence presented by British scientists (Haas, 1992: 216). It is therefore not possible to contribute United Kingdom's changed stance on the issue solely to the activities of FOE.

## 7.3 The Second Meeting of the Parties, London, 1990

In June 1990, 54 parties to the Montreal Protocol and 42 non-parties (amongst them large consumers such as Argentina, China, India, South Korea and Turkey) met again in London. The discussions were concentrated on several articles of the Protocol, including control measures, calculations on control measures, trade control, technology transfer and financial matters. The meeting was covered intensely by the media. A wide array of NGOs were represented through FOE, Greenpeace, Worldwatch and World Wide Fund for Nature

(WWF). The British Prime Minister, Margaret Thatcher, insisted on everyone's approval of the amendments and adjustments aimed at strengthening the Protocol. Britain was ready to contribute US\$9 Million, and strongly supported an initial programme of action, in turn putting pressure on the USA to follow suit and agree on a fund to assist developing countries in their phase out of ozone-depleting substances. In the early negotiations, all developed countries agreed on contributing to the fund, with the United States being the exception. After countless midnight meetings in small groups, in which the U.K. played a crucial part, the second Meeting of the Parties to the Montreal Protocol finally approved the adjustments and amendments (Andersen & Sarma, 2002: 123).

### 7.3.1 The NRDC's role in incorporating maximum target reductions at the London Meeting

One striking difference in the 1990s London event, which contrasted with all earlier dealings on the ozone depletion issue, was the increased amount of attention directed towards NGOs. Richard Benedick (as quoted in Smith & Canan, 2002: 313), the United States chief negotiator on the Montreal Protocol, made a speaking remark on the extent of NGO involvement:

*'For their part, environmental organizations were demonstrating more sophistication than had been the case during the process leading up to Montreal. Both before and during the London meeting, Friends of the Earth International, Greenpeace International, and the Natural Resources Defence Council held press conferences and circulated brochures and briefing sheets to the public, the media, and officials to match the customary public relations output of industry'*

Environmental groups were strongly represented throughout the entirety of the conference, and FOE, Greenpeace and the NRDC attracted particularly much media attention. In many instances, NGOs were cited as sources for news stories. In a *New York Times* story, David D. Doniger of the NRDC was quoted on the U.S decision to reverse on the proposal of the Multilateral fund, saying, "They [the Bush administration] have closed the hole in ozone policy that they opened themselves" (Shabecoff, 1990). During the negotiations, NGOs held press conferences and distributed informational leaflets to the public, press and officials. The NRDC went a step further, and created a proposition of target reductions for ozone-depleting substances that incorporated the maximum reduction proposed by any government (Jasanoff, 588). By demonstrating that there was actual state support for each target in the proposal, the NRDC managed to circumvent the common argument that tighter environmental regulations would be impossible to implement. Thus, NGOs managed to directly influence the structure of the negotiation text (Benedick 1998a, 166).



## 7.4 Conclusion on the London Meetings of 1989 and 1990

It stands clear that the 1989 and 1990 events in London represented a major breakthrough in terms of ozone protection. Noticeably, the meetings took place in the United Kingdom – a country which had for the last two years experienced a remarkably high degree of NGO involvement. NGOs inarguably influenced industry attitudes on the matter of CFC usage, as manufactures announced their phase out of CFC substances in direct response to FOE-UKs boycotts. As has earlier been accounted for, Britain was seen as an agreement blocker at the third session in Geneva at the instigation of the British industry. This fact speaks for the notion that the British industry also had some influence over the United Kingdom's foreign policy. When FOE later managed to change industry attitudes, this specific obstacle was overcome, which might explain why Thatcher became a strong proponent for harder regulations at the subsequent London Meetings. As the United Kingdom represented a crucial factor for the outcome of the negotiations (see Andersen & Sarma, 2002: 123), it is possible that we would have experienced a less successful outcome of the Second Meeting if FOE had not been able to persuade the British industry to phase out CFCs in 1987. In accordance with Rieter's findings (see section 3.2.6), NGOs can have an effect on international negotiations through influencing the negotiation stance of a key state.

Finally, as pointed out by Benedick, the NRDC managed to directly impact the London negotiation's outcome through comparing policy alternatives that helped implement maximum target reductions on CFC substances.

## 8. Conclusion

All things considered, it stands clear that activities of non-governmental organizations did have an actual impact on the implementation of CFC reductions. Starting with NGO involvement in the popularization of the Molina-Rowland hypothesis, the first bans on CFCs ensued in the United States in 1977. While the first CFC bans might eventually have happened anyways, it is likely that NGO involvement helped speed up the process. Moreover, a direct cause and effect relationship could be drawn between the NRDC lawsuits and the U.S. CPSCs subsequent bans on CFCs for non-essential aerosol products in 1978, as well as the prohibition of interstate shipments and imports of the same products the year after. Also, following NRDC litigations against the U.S. EPA, the United States government adopted the Ozone Protection plan in 1988. Friends of the Earth similarly contributed to the cause of safeguarding the ozone layer, as they compelled the world's largest CFC manufacturer, DuPont, to schedule a faster phase out of CFC-goods in 1992.

A notable achievement that can be ascribed to NGO activities is that of Greenpeace and the endorsement of environmentally friendly substitutes to CFC substances. As pointed out by Toke, chemical companies were first inclined towards a shift from CFCs to equally harmful HCFCs and HFCs. Following Greenpeace's development of hydrocarbon coolants, a number of manufacturers switched their positions in favour of substances that did not pose any further threat to the ozone layer. In the resolutions that were adopted at the Second Meeting of the Parties, the usage of HCFCs and HFCs was only allowed if there were no alternatives available. By developing environmentally friendly substitutes, Greenpeace therefore aided in the process of implementing the Montreal Protocol.

The case where NGOs perhaps had the least amount of influence was in the 1987 rendition of the Montreal Protocol. Overall, there was weak participation from non-governmental organizations in the years prior to the Montreal negotiations. Not a single NGO attended the Vienna Convention in 1985, and only a few participated in Montreal two years later. This corresponds with Potter's findings on the matter – NGO involvement is more likely to increase after an initial agreement is in place.

Consequentially, perhaps the most interesting cases of NGO involvement could be seen in the prelude to the conferences in London 1989 and 1990. A particularly strong example of NGO activities in direct relation to CFC reductions could be seen after FOE-UKs organization of the public boycott of CFC aerosol products in 1988. Interestingly, the British industry had previously exerted its influence over the U.K. government at the third Geneva meeting in 1987, leading to the country's opposition towards strong CFC regulations. After FOE's proposed boycott, the British industry reversed its position, and resorted to phasing out CFCs. Clearly, they would therefore no longer have any incentives to influence the U.K. government to adopt lax regulations at any following meetings. The United Kingdom later emerged as a key actor at the 1990 Second Meeting of the Parties, where the country's

representatives persuaded the United States' officials into approving the adjustments and amendments. Thus, it is possible that NGO activities positively influenced the outcome of the London negotiations. However, as argued by Haas, Thatcher's changed stance could similarly be explained by her confrontations with scientific evidence. A direct cause and effect relationship can therefore not be drawn between FOE-UK's campaign and the United Kingdom's behaviour in the actual negotiations. Nevertheless, the notion that public opinion was an important factor for Thatcher's support of strong ozone regulations is certainly plausible, especially considering the fact that public movements were explicitly mentioned as a crucial factor for safeguarding the ozone layer in the Prime Minister's speech at the London Conference in 1990. Finally, in relation to the London negotiations, Benedick's findings implies that the NRDC managed to affect the structure of the negotiation text through comparing policy alternatives.

On the subject of Haas' research, it can be argued that the epistemic community theory approach could beneficially be complemented by accounts of the activities of NGOs. While epistemic community members undoubtedly played a role in the successful reduction of CFCs, Haas' theory can to some extent be considered incomplete since it downplays NGO activities in relation to information distribution. By focusing solely on epistemic community members' abilities to influence governmental officials and company representatives through the presentation of scientific evidence, Haas neglects the effects that come with a well-informed public. By utilizing scientific information on the ozone issue, NGOs affected consumer behaviour, which in turn had direct implications for CFC producing companies. As has previously been pointed out by Dunlop, the full power of the scientific knowledge that stems from the epistemic communities might only be fully realised if accompanied by the involvement of more politically oriented actors. As such, further research may be warranted in order to derive a complementary approach to the epistemic community theory by taking into consideration the abilities of NGOs to disperse information.

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