

Master's Thesis – Master Sustainable Development

FACILITATION FOR THE FUTURE

The Ozone Secretariat's role during
the Kigali Amendment negotiations

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ABSTRACT

The Kigali Amendment is the latest addition to the Montreal Protocol for Substances that Deplete the Ozone Layer. This Amendment ensures that HFCs are phased down under the Protocol's regulations. The Ozone Secretariat has shown interest in phasing down HFCs directly after they were first discussed by some Parties. But why the Secretariat did so was puzzling. First, HFCs are not an ozone depleting substance (ODS) and have a high global warming potential. They are thus a problem for the Climate Regime, not the Ozone Regime. Secretariats in general do not go beyond their mandates, so why did the Ozone Secretariat do so now? The theoretical lens adopted in this research (i.e., Secretariats have autonomy and a will of their own) then leads to the following question: If the Secretariat had a motive to immediately jump on board HFCs, what was it?

The existing research on both the Kigali Amendment and Secretariat motivations remains very limited. But these topics can yield interesting insights for both future politics and research, especially because the approach of the Ozone Regime has taken on the largest chunk of emissions that lead to climate change to date. To make this contribution, the research answers the following question: Why did the Ozone Secretariat facilitate the Kigali Amendment negotiations.

To answer this question, first a hypothesis was built on why the Secretariat behaved as they did. It was expected they were motivated due to a drive for survival, as right before HFCs were discussed rumors surfaced that the job of the Secretariat was completed. It was also expected that they behaved in an autonomous way, had influence on the negotiation process and operated eagerly and from behind a veil of legitimacy.

To test this hypothesis, 72 documents were analyzed, and 12 in-depth qualitative interviews were conducted with key figures of the Kigali Amendment negotiations. The results confirm the Secretariat had autonomy and influence, was eager to jump on HFCs and operated from behind a veil of legitimacy. Also, their motivation to do so was driven by a need for survival.

These findings make an important contribution to science and society. They give an overview of, holistically, how a Secretariat operates and, empirically, what drives them. Also, the study provides a theoretical starting point to conceptualize the phenomenon of reversed problem-shifting. Ultimately, the Secretariat's approach can serve as an inspiration to take successful action on climate change.

KEYWORDS

Ozone Secretariat, Montreal Protocol, Kigali Amendment, HFCs, Survival, Problem-shifting

PREFACE

This work is the MSc thesis 'Facilitation for the future: The Ozone Secretariat's role during the Kigali Amendment negotiations', which contains a qualitative in-depth case study on the Ozone Secretariat and its involvement with the negotiation process that resulted in the Kigali Amendment under the Montreal Protocol on Substances that Deplete the Ozone Layer. The thesis, which is the result of 8 months' work, is the final requirement to become a MSc graduate in Sustainable Development - Earth System Governance. The work has been created and completed at the Copernicus Institute for Sustainable Development, Utrecht University

The project was developed under the PROBLEMSHIFTING project by Asst. Prof. Rakhyun Kim, and provides a novel contribution by researching the phenomenon of 'reversed problem-shifting'.

The final work would not have been possible without the help of my supervisor, Asst. Prof. Rakhyun Kim, to whom I express my gratitude for inspiring me, helping me and believing in me. I also want to thank my second reader, Prof. Frank Biermann. Also, without his works the theoretical foundation in this thesis could not have been built. My peers Eileen, Renate and Elliot have provided constant support and advice, which I am grateful for. I also want to thank Jodie for her help with the lay-out, Alexander for his feedback and my further family and friends who have supported me. Ultimately, I want to thank my boyfriend Sebastiaan, whose support I could not have worked without.

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Enjoy the read!

Jannah Wijermars

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TABLE OF CONTENTS

ABSTRACT	1
PREFACE	2
INTRODUCTION	5
CHAPTER 1: THEORETICAL FOUNDATION	8
1.1 WHAT ROLE THE OZONE SECRETARIAT TOOK ON	9
1.1a) Theoretical lens	9
1.1b) The Ozone Secretariat's role and influence	9
1.1c) Solving the puzzle?	11
1.2 WHY THE OZONE SECRETARIAT TOOK ON AN ACTIVE ROLE	12
1.2a) Why the Secretariat and Protocol should take up an active role	12
1.2b) Why the Secretariat would take up an active role	13
CHAPTER 2: METHODOLOGICAL APPROACH	17
2.1 DATA COLLECTION AND ANALYSIS	18
2.1a) Data collection	18
2.1b) Data analysis	19
2.2 RESEARCH APPROACH	21
2.2a) Research approach	21
2.2b) Operationalization and testing of variables	22
2.3 ETHICAL CONSIDERATIONS	23
CHAPTER 3: RESULTS	24
3.1 CONTEXTUAL BACKGROUND OF THE NEGOTIATIONS	25
3.1a) Putting HFCs on the agenda	25
3.1b) The drivers that led to the Kigali Amendment	26
3.2 WHAT ROLE DID THE OZONE SECRETARIAT TAKE ON AND HOW, AND HOW DID THAT ROLE INFLUENCE THE NEGOTIATIONS?	27
3.2a) The role and influence of the Ozone Secretariat	27
3.2b) How the Ozone Secretariat took on this role	31
3.3 WHY DID THE OZONE SECRETARIAT DECIDE TO PLAY THIS ROLE?	34
3.3a) 'Mentions of The Job Is Done'	34
3.3b) 'Mentions of Survival'	35

CHAPTER 4: DISCUSSION	39
4.1 IMPLICATIONS AND LIMITATIONS	40
4.1a) Implications of the most important results	40
4.1b) Limitations of the research	44
4.2 RIVAL FINDINGS	47
4.2a) Issues of trust	47
4.2b) Self-interest vs. altruism	47
4.3 POLICY AND SCIENCE RECOMMENDATIONS	49
4.3a) 'Blueprint for success'	49
4.3b) 'Shopping for topics'	49
CONCLUSION	50
REFERENCE LIST	51
APPENDIX	57
APPENDIX A - SOURCES FOR THE DOCUMENT ANALYSIS	57
A.1 Earth Negotiations Bulletin	57
A.2 Ozone Secretariat meeting reports	59
APPENDIX B - CODING SCHEMES	61
B.1 Predetermined codes based on the literature	61
B.2 Codes retrieved from the data analysis	61
APPENDIX C - KEY INTERVIEW QUESTIONS	63
APPENDIX D - INFORMED CONSENT FORM	64
APPENDIX E - OZONE SECRETARIAT'S MANDATE	65
APPENDIX F - NUMBER OF REFERENCES AND FILES PER CODE AND SUBCODE	66
F.1 Code 'Secretariat functions'	66
F.2 Code 'Mentions of Criteria Veil Of Legitimacy'	67
F.3 Code 'Secretariat's voice'	67
F.4 Code 'Mentions of The Job Is Done'	67
F.5 Code 'Mentions of Survival'	67

INTRODUCTION

Whilst the Montreal Protocol for Substances that Deplete the Ozone Layer is heralded as the most successful multilateral environmental agreement (MEA) in earth system governance (see for example McKenzie et al., 2019; Gonzalez et al., 2015; Albrecht & Parker, 2019), the Ozone Regime is also home to a negative problem-shift. An environmental problem-shift refers to the situation where an action taken to protect the environment has adverse effects on another area. In other words, the action transfers a problem from one area to the other (Kim & Van Asselt, 2016). These authors described the instance where the actions of the Montreal Protocol led to the development of hydrofluorocarbons (HFCs) - which are no ozone-depleting substance (ODS) but do have a high global warming potential (GWP) - as a problem-shift from the Ozone Regime towards the Climate Regime. But something unique occurred. Instead of leaving the Climate Regime to fend for itself, the Ozone Regime took back responsibility by amending HFCs under the Protocol through the 2016 Kigali Amendment. Could this Kigali Amendment be the first example of 'reversed problem-shifting' in earth system governance?

The Vienna Convention and the Montreal Protocol, the two MEAs under the Ozone Regime, were developed to address man-made chemicals that deplete the ozone layer, leading to severe effects such as global warming and skin cancer (World Meteorological Organization, 1999; UNEP, n.d.-a; Narayanan et al., 2010). The Protocol is regarded as a success because it has achieved its objective: the stratospheric ozone layer is recovering (Young et al., 2021; Albrecht & Parker, 2019).

The Protocol has been amended five times, in London, Copenhagen, Montreal, Beijing, and Kigali with all but the latter being universally ratified (UNEP, n.d.-b). This last Amendment is where the concept of problem-shifting emerges. The Kigali Amendment was agreed upon in 2016 to phase down HFCs under the Montreal Protocol. HFCs are a potent greenhouse gas that are linked to the Protocol because their development stems from serving as a substitute for the ODSs chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), and they are not so harmful to the ozone layer (Heath, 2017; Polonara et al., 2017; Andersen et al., 2020). By amending them, the Protocol takes the "single biggest bite out of the climate problem in history" because HFCs were one of the main six climate gasses (Miller et al., 2021)

In this case, there is a clear example of regime overlap. The international climate governance arena is messy and complex as no treaty or problem develops in a vacuum (Gómez-Mera et al., 2020). This messiness can lead to regime overlap (Jinnah, 2014b). This overlap becomes apparent when looking at the physics of gasses under the Protocol, because most ODSs are powerful greenhouse gasses too (Seki, 2017). And, when regimes overlap, problem-shifts are likely to occur (Faude & Grosse-Kreul, 2020).

It is important to emphasize that the development of this substance followed naturally from the history and development of the Ozone Regime. The Protocol did not deliberately trade the problem of CFCs and HCFCs, i.e., ozone, for HFCs, i.e., climate (Andersen, 2015). However, deliberateness is not a requirement for something to be a problem-shift, so this situation can still be regarded as one. As Kim & Van Asselt (2016) conclude: "by addressing the problem of ozone depletion, Parties to the Montreal Protocol may inadvertently exacerbate the problem of climate change" (p. 489).

But luckily, the Ozone Regime decided to not leave the situation as is after it created problems for the Climate Regime. After the severity of the situation was highlighted by the publications of reports on the GWP potential of HFCs, the Ozone Regime decided to act. They started discussing in

2009 whether HFCs should be controlled under the Protocol. Eventually, those discussions concluded in 2016 that HFCs should be controlled by the Protocol, and so the Kigali Amendment was born. It is quite a unique situation in earth system governance that a problem-causing regime has taken back a problem and addressed it. Such good management of problem-shifts can even enhance the legitimacy of the problem-causing institution after it had been negatively affected by the causation of the problem-shift in the first place (Faude & Grosse-Kreul, 2020).

This thesis studied the amending of HFCs under the Kigali Amendment. Although the case came to completion in 2016 when the Kigali Amendment was agreed upon, there has hardly been any research on the Amendment¹, and the existing research is mostly focused on the technical aspects or implications of the Amendment. Nothing can be found on how such a positive instance that is this case of ‘reversed problem-shifting’ came about. Such research could potentially yield interesting insights for future politics (e.g., combating climate change by taking-up problems from other regimes) and research (e.g., developing theory how institutions in global governance should address regime overlap or developing theory on ‘reversed problem-shifting’). So, to close the gap that currently exists in the literature and provide some contributions to politics and science, this research aims to discover the motivations why HFCs were reverse problem-shifted, i.e., why HFCs were amended.

To narrow-down the scope further, this research looks at the case presented here through a theoretical lens that focuses on the role of the Ozone Secretariat in all this. The Ozone Secretariat is expected to have played an important role in facilitating the negotiation process based on statements by Birmpili (2018) and by how the institutions of the Ozone Regime are often credited for its successes (Purohit et al., 2022). This research therefore answers the following research question:

Why did the Ozone Secretariat facilitate the Kigali Amendment negotiations?

At first glance, the answer to this question appears to be obvious: because it is any secretariat’s job to facilitate what Parties want. However, this question creates a puzzle. The Ozone Secretariat as an institute is expected to serve the Parties merely passively to the Protocol. However, research suggests the actual role went beyond the narrow mandate and the Secretariat actively influenced and facilitated the negotiations in significant ways (see Chapter 1). Another puzzling aspect is that existing research does explain why the Secretariat should address HFCs, but not why they would. So, why did the Secretariat do this? To detangle this puzzle, first it is researched what the exact role of the Secretariat was and subsequently why they decided to play this role. This leads to the following subquestions:

What role did the Ozone Secretariat take on and how, and how did that role influence the negotiations?

Why did the Ozone Secretariat decide to play this role?

In Chapter 1 (Theoretical Foundation), the research found that starts with answering this puzzle is explained in more detail. The functions of the Ozone Secretariat found in the literature are outlined, how that gave the Secretariat influence and how the Secretariat approached the discussions. Also, a hypothesis is built that provides a suggestion for why the Secretariat took on this role. In

¹ A Scopus document search for documents containing ‘Kigali Amendment’ in the title only yielded 9 results.

Chapter 2 (Methodological Approach), the methodology and operationalization needed to answer the questions is addressed. Chapter 3 (results) presents findings on the role and influence of the Ozone Secretariat, as the existing body of research on this topic (see Chapter 1) discusses it to a limited extent. The main focus of this Chapter is on analyzing whether the hypothesis holds true or not. Additional findings from the data are also presented. In Chapter 4 (Discussion), a brief reflection on the key findings is presented and what these findings mean for the theory and hypothesis. Then, an elaboration on other, rival, findings is presented and how they engage with the hypothesis. The Chapter concludes with suggestions for future research and policy recommendations. The thesis finishes with a brief conclusion that summarizes the research and answers the main research question.

CHAPTER 1: THEORETICAL FOUNDATION



1.1 WHAT ROLE THE OZONE SECRETARIAT TOOK ON

1.1a) Theoretical lens

The first step in solving the puzzle is changing the perspective with which Secretariats are perceived. Secretariats have long been thought to be mere functionaries, servants of Member States that have no impact on policy outcomes (Bauer et al., 2009a). However, studies from the last two decades changed the perception of Secretariats, portraying them as actors who are active and sometimes even autonomous (De Wit et al., 2020; Jinnah, 2014b).

This study conceptualizes Secretariats as actors who are not solely restricted by their mandate and control of Member States. Instead, they have autonomy, authority and influence (Biermann & Siebenhüner, 2009b). By adopting this conceptualization, the behavior of Secretariats becomes not only embedded in their role, function or activities, but also in the impact and influence they have on global governance (De Wit et al., 2020). In other words, the behavior of Secretariats is dependent on their role and influence. Looking at influence is also important for answering the research question, as without it we cannot assume that the Secretariat would have had any motive to act a certain way. This research takes off by describing the expected role and influence of the Ozone Secretariat by embedding it in theory on secretariat behavior.

1.1b) The Ozone Secretariat's role and influence

The second step in solving the puzzle is looking at what the role of the Ozone Secretariat was and how this role can lead to influence². Secretariats can gain autonomy, authority and influence through certain conditions (Biermann & Siebenhüner, 2009b). De Wit et al. (2020) provide a concise and well-researched synthesis on the literature that discusses the influence of international bureaucracies like the Ozone Secretariat. They conclude that Secretariats can exert influence not only because of their (1) international structure³, but also because of their (2) governance functions⁴ and (3) bureaucratic autonomy⁵. Secretariats that enjoy autonomy can support Member States administratively, collect and process knowledge, reduce transaction costs and improve decision-making processes (Panke et al., 2022). The following section reviews how these conditions by De Wit et al. (2020) and additional research on the Ozone Secretariat leads to an expectation of its influence.

² A general distinction can be made between cognitive and normative influence. In this research, both sources of influence are addressed because Secretariats often generate both types (Bauer et al., 2009b). However, the final question of how the Ozone Secretariat uses its role and influences the HFC negotiations is more tied to normative influence, as that can originate from the active role bureaucracies can have (Biermann & Siebenhüner, 2009b).

³ Navigating regime overlap and engaging in transnational governance are international structural characteristics that can give a Secretariat influence (De Wit et al., 2020).

⁴ Both administrative and coordination functions can give bureaucracies influence (Biermann & Siebenhüner, 2013 ; De Wit et al., 2020). Administrative functions are for example assisting negotiations and policy formulation and implementation, computing proposals, and supervising treaty implementation (Biermann, 2014 ; Jinnah, 2014b). An example of coordination functions is maintaining contacts with actors in the Secretariat's network (De Wit et al., 2020).

⁵ Bureaucratic autonomy refers to the ability of Secretariats to balance between their own preferences and the room provided by Parties (De Wit et al., 2020), self-perfection and political context in which the Secretariat is embedded (Knill et al., 2016).

Secretariat influence has played a key role in the development of the Montreal Protocol. It was the UNEP Secretariat, and not the states, who initiated the first conferences to negotiate a treaty to protect the ozone layer (Downie, 1995). The important role of the UNEP Secretariat has proved to be an example for the role of the Ozone Secretariat. Although the Secretariat is a small bureaucracy, it is regarded as a key player within the Ozone Regime (Biermann & Siebenhüner, 2013 ; Bauer et al., 2007 ; Bauer, 2009). It is a shame, therefore, that the Ozone Secretariat has hardly been researched (Bauer et al., 2007). It is also interesting that the Secretariat's mandate (see Appendix E) is rather narrow, which would lead one to expect that they have little autonomy and influence (Well et al., 2020). So, why would the Secretariat still be regarded as a key player? To understand the role and influence of the Ozone Secretariat in its regime, a small body of literature is reviewed.

The Secretariat is seen as one of the important institutions in the Ozone Regime (Johnson & Urpelainen, 2012 ; Bauer et al., 2007). The bureaucracy has been praised for its level of neutrality, professionalism, and transparency when it comes to providing service and giving advice to member states on treaty implementation (Bauer et al., 2007). Moreover, expertise, institutional memory and technological knowledge of the Secretariat are seen as areas of cognitive influence, such as the direct influence of the Secretariat through meaningful advice for compliance issues at the domestic level (Bauer, 2006).

The most prominent example of the normative influence and role of the Ozone Secretariat is when some Parties considered the successes of the Montreal Protocol as a sign to stop making efforts to continue their work. It was the Secretariat who succeeded in maintaining the focus and attention of decision-makers and raising awareness for the continued work that could be done (Bauer et al., 2007). Moreover, the general success of the Protocol can in part be credited to the Secretariat's efforts for "smooth cooperation" between decision-makers, Parties and National Ozone Units (Bauer, 2006, p. 35)

One of the most important administrative functions of the Ozone Secretariat is the providing of information. Biermann & Siebenhüner (2013) outline how in several instances negotiators relied heavily on information that was provided by the Ozone Secretariat. And in many informal meetings regarding controversial negotiations, specific knowledge provided by the Secretariat facilitated the final decision-making (Bauer et al., 2007). The scientific reports drafted by the Secretariat are based on knowledge that often surpasses that of the Parties, making their reports authoritative (Bauer, 2006).

The Secretariat also plays an important role in drafting legal texts for amendments. There are instances where negotiators have taken over suggestions for treaty language from the Secretariat (Biermann & Siebenhüner, 2013). Even more, Bauer et al. (2007) in their findings mentioned how individual officers argue that their drafts are mostly regarded as authoritative by the Parties. This perceived authority stems from the expertise, institutional memory and technological knowledge the Secretariat has, which often surpasses the knowledge of Party delegates (Bauer, 2006).

The role and normative influence are also inserted into the political arena, with Bauer (2006) emphasizing how the Secretariat uses its authority to further the development of the Protocol and manages the balance between having a neutral perception as Secretariat and maintaining an active role behind-the-scenes. An example of their active role behind-the-scenes is how the Secretariat has managed breakthroughs in negotiation meetings regarding draft decisions (Bauer et al., 2007). In short, the Ozone Secretariat has a significant role in the shaping of decisions (Depledge, 2007).

Lastly, it is also important to mention the staff of the Secretariat. Bauer et al. (2007) present a detailed text on the excellent work of the staff. They take their jobs seriously, are highly qualified

and work with a sense of pride. The officers are confident in their own roles and their expertise, institutional memory and knowledge that surpasses that of the Parties. They are perceived as neutral and professional and operate with a high level of transparency. The Executive Secretary Madhava Sarma is credited with operating such a professional staff that is motivated by ideals. The excellence of the Secretariat staff has given the bureaucracy a leadership position in the Ozone Regime (Bauer et al., 2007). It is also unique within the United Nations that all Executive Secretaries to the Ozone Secretariat have been experts who have first-handedly designed environmental agreements (Andersen, 2015).

1.1c) Solving the puzzle?

The Ozone Secretariat is expected to have played a significant role during HFC negotiations (see 1.1b). The Secretariat is generally seen as a key player in the Ozone Regime, who “*may well be quite active behind the scenes*”. (Bauer, 2006, p. 32).

So, what the role of the Secretariat might have been, has become quite clear from the theory. But how did the Secretariat go about its role in facilitating the negotiations? One element that answers this adds to the puzzle instead of solving it: the apparent eagerness of the Secretariat staff to jump on HFCs right at the start of when they were first introduced. In 2006, an all-star team of researchers⁶ was assembled that made the first efforts to turn the Montreal Protocol into a climate treaty (Andersen et al., 2009 ; Andersen et al., 2018). Then Executive Secretary to the Ozone Secretariat Marco Gonzalez was one of the “informal communication and outreach advisors” (Andersen et al., 2018, p. 418). The research by this team first pushed diplomats to phase out HCFCs under the Protocol in 2007⁷, and later in 2009 for HFCs⁸ (Andersen et al., 2018). The involvement of Marco Gonzalez shows the interest of the Secretariat to address HFCs right from the start.

Even by approaching Secretariat behavior from the theoretical lens outlined above and considering their significant contributions to the overall performance of the regime (Biermann & Siebenhüner, 2013 ; Bauer et al., 2007, Bauer, 2009, it is still puzzling why the Secretariat would act on HFCs. When HFCs were first brought up in 2009, many Parties were against discussing them under the Protocol. But the Secretariats Executive Secretary was in a team that proposed to take on HFCs under the Protocol (Andersen et al., 2018), thus siding with those Parties in favor of discussing them. In doing so, they went beyond their mandate, as many Parties at that time did not want HFCs to be discussed under the Protocol. It is also not clear yet why they would do so. The next section aims to shine some light on this matter by developing a hypothesis that attempts to solve this puzzle.

⁶ This team consisted of Guus J.M. Velders, Stephen O. Andersen, David W. Fahey, John Daniel and Mack McFarland, with Executive Secretary Marco Gonzalez, Durwood Zaelke and Scott Stone as the advisors (Andersen et al., 2018).

⁷ These findings were presented in the paper by Velders, G. J., Andersen, S. O., Daniel, J. S., Fahey, D. W., & McFarland, M. (2007). The importance of the Montreal Protocol in protecting climate. *Proceedings of the National Academy of Sciences*, 104(12), 4814-4819.

⁸ These findings were presented in the paper by Velders, G. J., Fahey, D. W., Daniel, J. S., McFarland, M., & Andersen, S. O. (2009). The large contribution of projected HFC emissions to future climate forcing. *Proceedings of the National Academy of Sciences*, 106(27), 10949-10954.

1.2 WHY THE OZONE SECRETARIAT TOOK ON AN ACTIVE ROLE

Again, answering this question is not as straightforward as it might seem. When researching arguments that explain why the Ozone Secretariat took on a more active role than was expected of them, most answers do not align with the question. Instead, the focus within the Ozone Regime on providing answers to this question is more on why the Protocol and the Secretariat should have amended HFCs, not why they would. This section first briefly elaborates on these 'should' arguments, so they have been discussed. However, they are not the main focus of this research. Then, a hypothesis is drafted embedded in the concept of 'output legitimacy' in an attempt to explain why the Secretariat would take on an active role and facilitate and influence the HFC negotiations.

1.2a) Why the Secretariat and Protocol should take up an active role

There is a small body of literature that addresses arguments as to why the Montreal Protocol and Secretariat should take up the problem of HFCs. The general international consensus is that the Protocol and Secretariat were the most effective to do so (Purohit et al., 2022 ; Birmipili, 2018). The more specific arguments provided are as follows.

First, climate and ozone are intertwined. The goal of the MP is to simultaneously create climate benefits whilst the ozone layer is protected, since most ODS are greenhouse gasses (Victor et al., 2015). The mandate to the Protocol and Convention also refers to environmental protection (UNEP, n.d.-c). Moreover, the Protocol is regarded as a key institution in regulating greenhouse gasses (Johnson & Urpelainen, 2012). Because of the interlinkages, the Secretariat is even referred to as an environmentally oriented bureaucracy (Biermann & Siebenhüner, 2013).

Second, HFCs have only been developed because of the phase-out of CFCs and HCFCs, which makes them like these gasses (Zaelke et al., 2012). The gas belongs to the same family as CFCs and HCFCs and has similar chemical properties to the other two. This means that the Protocol has the right experience and expertise to phase-down HFCs (Purohit et al., 2022) and could reuse its system used to phase-out CFCs and HCFCs (Zaelke et al., 2012).

Because HFCs are so like other ODSs, they are also similar in terms of their manufacturing. HFCs are not unwanted byproducts but are actively produced to be incorporated into products (apart from HFC-23 as a byproduct from HCFC-22). Hence, they can be regulated according to the same production and consumption regulation scheme the Montreal Protocol has, rather than the reducing emissions scheme of the UNFCCC (Zaelke & Borgford-Parnell, 2015). In other words, there is an opportunity to efficiently regulate HFCs under the Protocol. Doing so would also drive the market to invest and innovate in other, low-GWP alternatives (Molina et al., 2009).

Third, regulating HFCs gives a major contribution to combating climate change. HFCs were the fastest growing climate pollutant in many countries, ultimately contributing to a large share of global warming (Zaelke & Borgford-Parnell, 2015). Regulating these HFCs would save 0.5-0.6 degrees Celsius global warming by 2050 (Xu et al., 2013).

Fourth, the institutional structure of the Protocol is proven to work the best to phase out ODS and other controlled substances, because the system adheres to principles of transparency, regular evaluation and institutional strengthening through mandates (Purohit et al., 2022). Prime Minister Modi (India) and President Obama (U.S.) recognized the structure too, mentioning that the expertise and institutions of the Montreal Protocol, that have been the cause of the treaty's success, are needed to reduce the consumption and production of HFCs (Zaelke & Borgford-Parnell, 2015).

There are some other benefits to phasing out HFCs under the Protocol worth mentioning. It has universal membership, a sound funding mechanism (the Multilateral Fund), highly expertise staff, independent science-based assessment panels, internalization of CBDR (Zaelke et al., 2012), and the Protocol is legally binding (Purohit et al., 2022).

Another important aspect to keep in mind is that the precautionary principle is embedded into the mandate of the Protocol (Birmpili, 2018). The precautionary principle can be seen as a guideline for environmental decision-making in the face of uncertainty (Kriebel et al., 2001). The principle described four circumstances where extra precaution is necessary: when important values are systematically ignored (e.g., health, environment); when a decision might result in severe consequences for irreplaceable values; when having it right is as important as timing; and when it is better to have false positives than negatives (Persson, 2016). The first two circumstances appear relevant to this case, because the environment is an irreplaceable value that is too often being ignored - even in MEAs - and decisions under the Protocol can have effects outside its own regime (such as the GWP of many ODSs). Willi et al. (2021) even make the argument that if the principle was adhered immediately after the first warnings for CFCs, climate change could have been minimized.

Approaching the situation with the precautionary principle and all of the above benefits in mind, it becomes clear why the Protocol was well-equipped to take up HFCs and should do so, especially compared to the alternative institutions (i.e., UNFCCC, Kyoto Protocol). However, this does not dismiss the argument that HFCs do not belong under the category of ozone depleting substances. With this in mind, it is still not completely clear why the Secretariat would take up the active role to amend HFCs under the Protocol.

1.2b) Why the Secretariat would take up an active role

Whilst the previous paragraph outlines why the Protocol and the Secretariat should phase-down HFCs under the Protocol, it does not explain why they would. Technically, the Ozone Regime has no mandate to phase-down HFCs because they are no ODS. Approaching this situation from a rational perspective, the question can be asked what the Protocol and the Secretariat stand to benefit from mandating HFCs.

The value of being a legitimate international institution

Legitimacy and accountability of a non-state institution are always important to the outside public, especially when this institution has influence in its issue area. But legitimacy is also always in the self-interests of such institutions (Biermann, 2014). A legitimate institution experiences easier agreement with its decisions, and in a global environmental governance context - where nuanced trade-offs and difficult choices are inevitable - this is a valuable asset (Hurd, 2019).

Here, legitimacy is defined in the context of institutions. An institution is legitimate when it uses its authority appropriately (Scholte, 2019). This definition is chosen, because it approaches institutions, like secretariats, through the research lens discussed at the beginning of this Chapter. Legitimacy can be divided into two streams: normative⁹ and sociological legitimacy¹⁰. Institutions

⁹ The democratically justified values and moral standards institutions need to meet (Bäckstrand, Zelli & Schleifer, 2018 ; Scholte, 2019).

¹⁰ Concerns the perception of legitimacy of an institution (Bäckstrand et al., 2018 ; Mende, 2022). The subjects to the authority of an institution have confidence and trust that that power is yielded correctly (Scholte, 2019).

often concern both, but specifically for secretariats, sociological legitimacy is more interesting to study because the democratic elements that concern normative legitimacy are not relevant for a secretariat that is inherently not democratic (Jinnah, 2014a).

This research specifically focuses on an aspect of output legitimacy. Simply put, output legitimacy refers to the effectiveness of an institution. It is the ability of an institution to deliver effective solutions (Christensen, 2020) whilst safeguarding the global public interest (Steffek, 2015). A lack of such legitimacy may lead to less resources attributed to the institution or, in the case of Secretariats, receive stricter oversight from Member States (Christensen, 2020).

Impacts on legitimacy of the Ozone Secretariat

When HFCs were developed, the effects the substance has on the climate is likely to have decreased the legitimacy of the Protocol and Secretariat. By developing HFCs, the Ozone Regime had shifted a problem to the Climate Regime due to the substance being a strong greenhouse gas (Heath, 2017 ; Polonara et al., 2017 ; Kim & Van Asselt, 2016).

Faude & Grosse-Kreul (2020) link such a negative spillover to the legitimacy of a problem-causing institution, arguing that a negative spillover or problem-shift can result in the loss of legitimacy.

In short, the development of HFCs resulted in a negative problem-shift, which simultaneously decreased the legitimacy of the Protocol and Secretariat (see Figure 1).

Managing regime overlap

In the case of the Ozone Secretariat, there is an argument to be made that they managed regime overlap. As explained before, by taking up HFCs the regimes of Ozone and Climate overlapped, and the facilitation of the Secretariat can be seen as good management of this overlap (Faude & Grosse-Kreul, 2020). In managing regime overlap, Secretariats have emerged as key actors (Jinnah, 2012). Managing such overlap especially gives a Secretariat a substantive role in decision-making when the issue is new and important, but not central to the core goals of a regime. Also, the issue needs to be dealt with through specialized expertise and networks (Jinnah, 2014a). For HFCs, this was all the case. They were new, but not a core issue (at first) as they do not deplete the ozone layer. Moreover, specialized expertise was needed because limited knowledge about the issue was available when it was first discussed.

It is not only a matter of convenience that Secretariats manage regime overlap through their actions. They are, after all, the full-time managers of a regime and probably best know what to do (Jinnah, 2012). When managing overlap, the policies and practices of a Secretariat aim at two things: “decreasing duplication of efforts across international agreements and/or increasing synergies and cooperation between them.” (Jinnah, 2012, p. 108). For the Ozone Secretariat, the effort to manage HFC production and consumption results in no need to control HFC emissions under the UNFCCC or Kyoto Protocol, hence removing the need for duplication of efforts.

By managing this regime overlap, it also appears that the Ozone Regime has taken back a problem from the Climate Regime. This can be described as good management of the problem-shift that was created in the first place, which in turn increases the legitimacy of the Protocol and Secretariat (Faude & Grosse-Kreul, 2020). By facilitating the HFC negotiations, the Secretariat has thus arguably enhanced its legitimacy. That the Secretariat has enhanced its output legitimacy also becomes evident from the description above of what creates output legitimacy. The facilitation of

taking up HFCs can be seen as the delivery by the Secretariat of an effective solution that has served the global public interest, i.e., preventing additional global warming.

In short, autonomous secretariats need output legitimacy for acceptance if they want to influence policy effectiveness and outcomes. To gain this legitimacy, Secretariats need to balance a fine line between improving problem-solving effectiveness without losing the trust and acceptance of Member States. That is why Secretariats often operate from behind a ‘veil of legitimacy’ (Depledge, 2007 ; Jinnah, 2014a). It can be concluded that the Ozone Secretariat has enhanced its output legitimacy by successfully facilitating HFCs.

Researching how the Secretariat managed regime overlap by taking up HFCs can be researched from different perspectives. Here, it is researched what role the Secretariat took on to manage the overlap and how that led to influence, how the Secretariat managed regime overlap and why they did so (see Figure 1). The role is already elaborated upon under section 1.1, the other two aspects are outlined below.

How to manage regime overlap: ‘veil of legitimacy’

Autonomous secretariats can enhance their legitimacy by improving the problem-solving effectiveness of international organizations (Panke et al., 2022). However, they can also reduce the output legitimacy as they are often not publicly held accountable (Panke et al., 2022). Maintaining legitimacy is important in the eyes of the Member States because they can reign-in a Secretariat’s autonomy. Secretariats therefore often operate from behind the so-called ‘veil of legitimacy’ (Jinnah, 2012 ; Jinnah, 2014a).

This veil is a defining feature of secretariat politics (Depledge, 2007). It still enables secretariats to operate the politics and influence policy outcomes, but due to the veil their ‘rule’ is accepted. This acceptance is again a necessary ingredient for Secretariat legitimacy (Bernstein 2005 ; Bernstein, 2011 ; Jinnah, 2014a). Another ingredient is that the Secretariat should not upset Parties that regard the Secretariat still as functionary (Jinnah, 2012). Secretariats can also apply this veil of legitimacy to manage regime overlap. When they do so, they gain a substantive role in decision-making (Jinnah, 2014a).

Secretariats operate through this veil by working behind the scenes, planting ideas with certain people, by helping states to draft documents in negotiations or conflict resolutions and by using their network to channel ideas through formal political processes (Jinnah, 2014a). They also often downplay their influence on governance processes when working from behind such a veil, by for example reframing their ideas and suggestions to something more informal than recommendations (Jinnah, 2012).

Why to manage regime overlap: ‘survival’

The above still merely describes how the Ozone Secretariat managed HFCs. But what motivated the Secretariat to do so is an aspect linked to output legitimacy as well: the survival of the institution.

After it was decided to phase-down HCFCs in 2007, the question arose whether the Montreal Protocol’s job was finished, as it successfully protected the ozone layer (Kaniaru, 2007). Former Executive Secretary to the Ozone Secretariat Tina Birmpili¹¹ has highlighted how sometimes the

¹¹ During the Kigali Amendment negotiation process (2009-2016), the Ozone Secretariat had two consecutive Executive Directors. Marco Gonzalez was already the Secretary in 2009 when HFCs were first discussed. Tina Birmpili took over in 2014 and was the Secretary when the Amendment was finalized.

successes of the Montreal Protocol have given the idea that its job is done (ENB, 2014). Birmpili also explains how the negotiations to amend the Protocol to include HFCs “provide with a response as to what has kept the Protocol alive, successful, and relevant after thirty-one years.” (Birmpili, 2018, p. 429).

It is only natural that an institution such as the Protocol or Secretariat wants to survive instead of shutting down when ‘its job is done’. In the field of organizational studies, it is a given that institutions have a drive to ensure their future successes. Abott et al. (2016) explain how international institutions to survive are in search for material, social and political resources. This research focuses on institutional survival through gaining political resources like legitimacy.

Legitimacy and the future success of an institution go hand in hand. This link has been researched extensively (see for example Díez-Martín et al., 2013 ; Miranda et al., 2018 ; Gomez-Martinez et al., 2018). These studies conclude that the future success or survival of an institution is directly linked to legitimacy. On the one hand, institutions need legitimacy to survive, but at the same time being able to survive indicates the presence of legitimacy of an institution. By enhancing its legitimacy and using it to influence the negotiations, the Secretariat could thus also establish their continued relevance as institutions within the Ozone Regime.

Final hypothesis

By putting all the pieces of the puzzle together like this, it leads to the following hypothesis. As outlined under the previous steps, output legitimacy is crucial for an institution like the Ozone Secretariat or Montreal Protocol: both for their own good and for a means to an end. It is also natural for these institutions to focus on staying relevant and survive. What is expected from the theory, the Secretariat was likely motivated to manage the HFC take-up by a drive for survival.

To test this hypothesis, it is explored whether the drive for survival was on the mind of the Secretariat when it started facilitating the HFC negotiations.

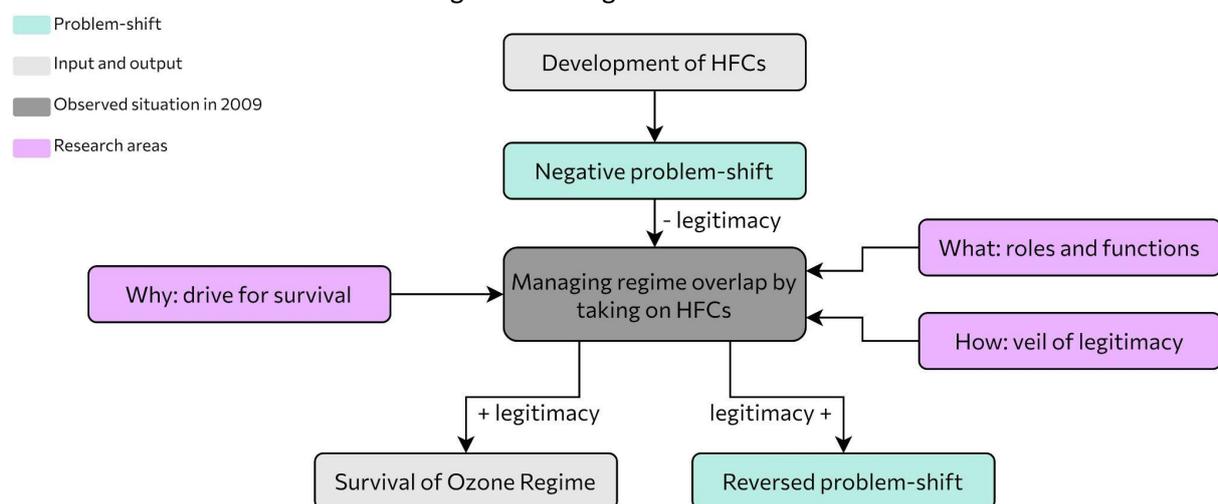


Figure 1. Conceptual framework of how problem-shifts, output legitimacy, regime overlap and a drive for survival interact

CHAPTER 2: METHODOLOGICAL APPROACH



Because of the limited existing knowledge on the role, functioning and influence of the Ozone Secretariat during the Kigali Amendment negotiations, this research first aims to further develop the existing theory on the role. Then it continues researching the motivation why they took on this role. For this approach, two methods are applied: document analysis and interviews. This Chapter first discusses the general approach to data collection and analysis, and then specifies how the concepts introduced in the hypothesis are approached, operationalized and tested.

2.1 DATA COLLECTION AND ANALYSIS

There is no previous research that discusses the functions of the Ozone Secretariat in this much detail. Even more, the concept of survival as the underlying motivation for the drafting of the Kigali Amendment has not been researched at all. This lack of existing knowledge on the topic requires a qualitative in-depth study because it provides the researcher and reader with a rich and holistic description of the phenomenon (Anaker et al., 2021).

2.1a) Data collection

The methods that are used are document analysis and interviews. Why these methods were selected is discussed under 2.1b. What type of data is needed to conduct research with these methods is discussed here.

The documents for a document analysis can range from written reports and diaries to speeches and legal texts (Karppinen & Moe, 2019). For this research, public reports and reviews are chosen as the data source from the Ozone Secretariat website and the Earth Negotiations Bulletin, because these were openly accessible and contain objective information. This saves a lot of time and ensures replicability of the analysis (Karppinen & Moe, 2019 ; Bowen, 2009).

In this research, a total of 72 documents were analyzed. First, 42 documents published by the Ozone Secretariat were analyzed (see Appendix A.2). These documents are retrievable from their website, and include reports from MOPs (Meeting of Parties), COPs (Conference of Parties), OEWGs (Open-Ended Working Groups), ORMs (meetings of Ozone Research Managers), and Workshops. For these documents, a timespan of 2009-2016 was adopted.

Then, 30 reports published by the Earth Negotiations Bulletin were retrieved from their website and analyzed (see Appendix A.1). These reports covered the timespan in which HFCs were discussed in official Protocol meetings (2009-2016) and any document before 2009 that contained the keywords 'HFC' or 'hydrofluorocarbon'. ENB reports are independently drafted, which makes them an objective source of data. The summaries at the end of each report also provide interesting perspectives of the situation in the meeting room that are not translated into the official documentation of the Ozone Secretariat. The ENB reports thus add new data to the sample that could not be retrieved from Ozone Secretariat documents alone.

The third data source is interviews. A total of 12 interviews were conducted. For the interviews, participants were selected based on their work for the Ozone Secretariat or their affiliation with the Ozone Secretariat at any point during the Kigali negotiations. The only criteria for potential

participants to be eligible for an interview was their attendance at any of the meetings. All the participants have been key figures in the HFC negotiations and have attended several meetings¹².

Participants were retrieved either through the Ozone Secretariat website, through extracting names from the documents and researching contact information online or through previous participants who recommended new participants and provided contact information.

2.1b) Data analysis

The general analysis can be regarded as deductive. There are preconceived ideas for what themes to look for in the documents and interviews (e.g., role, influence, output legitimacy ‘the job is done’, survival). Such an analysis allows the researcher to focus on central themes to the research. Other themes that were found in the data were also coded, although this was done inductively.

Document analysis

A document analysis is a good start in exploratory research, because it concerns data that can be interpreted to develop empirical knowledge. It is particularly useful for in-depth qualitative case studies (Bowen, 2009), like this research. It is also a great way to gather much data within a limited timespan (Morgan, 2022). The method can be used to systematically review documents (Mackieson et al., 2019). However, it should not be the only source of information because researchers should at least draw from two sources of evidence to triangulate the data (Bowen, 2009).

A document analysis of both the OS and ENB reports was carried out to find out both what role the Ozone Secretariat took on and why they did so. Section 2.2 and Figure 2 elaborate on how this analysis was done. It is expected that for especially the first question, the document analysis provides detailed answers. For this question, there are two preconceived codes. ‘Secretariat functions’ sets out to categorize all data referring to the functions of the Secretariat. ‘Mentions of Criteria Veil Of Legitimacy’ sets out to categorize proof that the Secretariat operated from behind a ‘veil of legitimacy’. During the analysis, the first code was enriched with subcodes that categorize the different functions (see Appendix B.1 and B.2).

For the second question, the preconceived coding scheme is also limited, due to the motivation still being largely unknown before the analysis. The predetermined codes are based on the theory (see Appendix B.1). First, the research wants to confirm that there was an atmosphere of ‘the job is done’ right before HFCs were first discussed. The code ‘Mentions of The Job Is Done’ was preconceived to research this. Second, this research wants to know the Secretariat’s opinion on drafting the Kigali Amendment through the code ‘Secretariat’s voice’. Third, the research searches for the motivation to be embedded in a drive for survival through the code ‘Mentions of Survival’. During the analysis, for the latter two predetermined codes many subcodes were found (see Appendix B.2). Due to the second code, the research can be described as partially confirmatory, as the analysis focused on data that confirms the hypothesis (Mackieson et al., 2019).

The document analysis is done via NVivo¹³, and the approach was to scan through the documents first, then read them carefully and code simultaneously according to the preconceived

¹² The sample consists of 12 people covering 9 nationalities. The sample includes (former) Ozone Secretariat employees, (former) co-chairs and senior experts of the Ozone Regime groups or three Assessment Panels, lead authors and experts and independent consultants.

¹³ NVivo 20 for Windows (version 1.6.1) was used for both the document analysis and interview analysis.

codes and other themes that stood out. Consequently, the preconceived codes' data was segmented by analyzing which codes should be put in what categories (i.e., subcodes). In the results, the data for each code was synthesized and specific examples from the data are provided.

Interviews

As pointed out above, multiple data sources are needed to triangulate and validate data (Bowen, 2009). Interviews were chosen as a second method, because carrying out in-depth interviews regarding the perception of the Interviewees gives much insight into how the phenomenon is perceived, hence enriches the depth of the study (Anaker et al., 2021). It can also uncover evidence that cannot be found in documents.

Here, the semi-structured interview was applied because it allows the researcher to be flexible and keep the process iterative (Bryman, 2011). Although some key questions (see Appendix C) have been asked throughout all interviews (sometimes indirectly if the Interviewee already addressed the question themselves), the semi-structure allowed for follow-up questions and an iterative approach to the interviews (Bryman, 2011). This created the ideal circumstance to uncover the most evidence over a timespan of three months between the first and last interview.

For the analysis of the interviews, the same approach was used as for the document analysis, but some steps were added here. After the interview was conducted and recorded, the data was transcribed. These transcriptions were uploaded in NVivo. The same preconceived codes as for the document analysis were used. So, first the transcripts were scanned over, and then read carefully. Consequently, the data belonging to the predetermined codes were coded, and additional themes identified were coded in new codes. After the first round of coding, the second round focused on placing the data under the codes in smaller categories (i.e., subcodes).

The transcriptions are an essential step in the analysis of interviews. These were made with the assistance of the Chrome-extension Tactiq¹⁴ for the interviews in English and with the 'dictate' function of Microsoft Word for the interview in Dutch (Interview #8). The first versions of the transcripts resulting from this software were consequently checked by the researcher with use of the recordings.

¹⁴ <https://tactiq.io/>

2.2 RESEARCH APPROACH

This section first discusses the general research approach applied in this research, and then zooms into the details regarding the operationalization and testing of the variables.

2.2a) Research approach

The first step in the whole research approach was to research the theory presented in Chapter 1. The goal of that Chapter was to embed the questions in existing theory that brings together the Ozone Regime, Secretariat behavior and influence, legitimacy and motivations for behaving in a certain way. From this theory, five predetermined codes were developed for the data collection and analysis ('Secretariat functions', 'Mentions of Criteria Veil Of Legitimacy', 'Mentions of The Job Is Done', 'Secretariat's voice' & 'Mentions of Survival'). During those analyses, more categories were found that were put into subcodes. Consequently, when bringing together all these subcodes and the data they contain, the questions can be answered in the results (see Figure 2).

This approach can be regarded as a thematic analysis, as the research moves beyond just describing the data towards identifying and interpreting patterns of meaning in the data (Mackieson et al., 2019). To help make the interpretation process more transparent, the concepts of output legitimacy and survival are operationalized in section 2.2b.

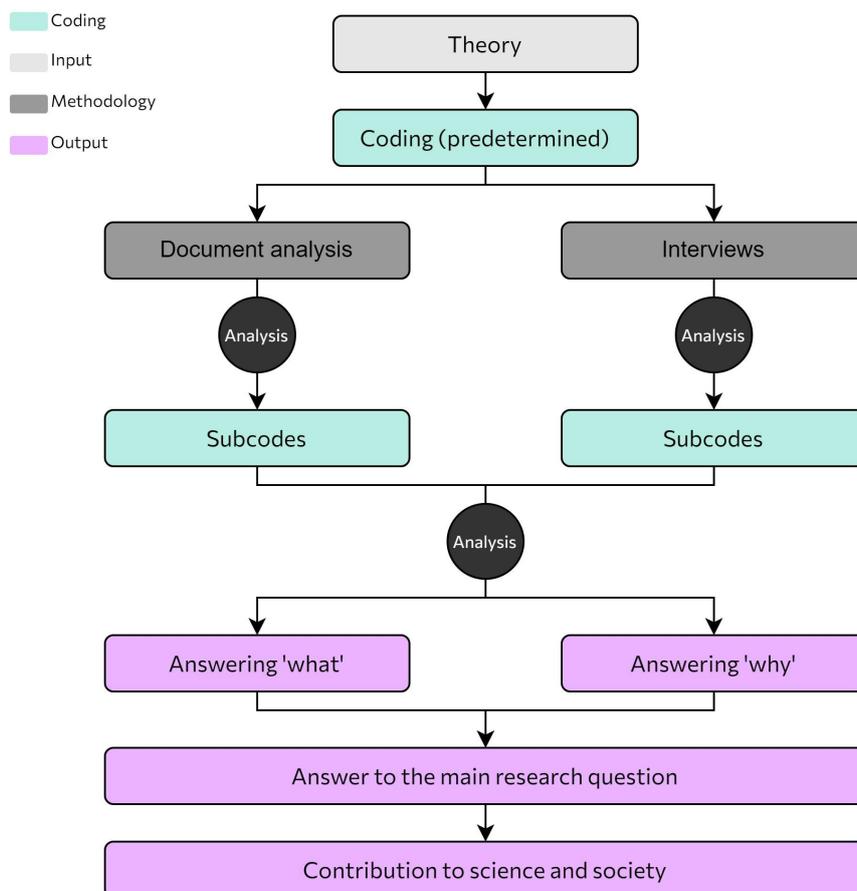


Figure 2. Visualization of the research approach applied in this thesis

2.2b) Operationalization and testing of variables

Operationalization and testing 'veil of legitimacy'

To test whether the Secretariat indeed operated from behind a 'veil of legitimacy', the criteria in Table 1 have been summarized from the theory. This Table also outlines how the criteria are operationalized so they can be tested in the analysis. The data needed to test is gathered from 'Mentions of Criteria Veil Of Legitimacy' and 'Secretariat's voice' for the criteria.

When the data is gathered, it is analyzed whether any or all criteria hold true for this case. If all criteria are positively identified, the research accepts the idea that the Secretariat has operated from behind a veil of legitimacy to influence the HFC negotiations.

Table 1. The operationalization of the concept 'veil of legitimacy'

Criteria	Operationalization	Conclusion
Working behind the scenes	The Secretariat should be working actively from behind the scenes	
Downplaying ideas and recommendations	The Secretariat should reframe their ideas and recommendations to something more informal than they are	
No challenging of those ideas by Parties	The Secretariat's proposed ideas and recommendations should not be challenged by the Parties	

Operationalization and testing of 'survival'

To test whether the Secretariat was motivated by a drive for survival, the following question was asked in every interview: Why do you think the Secretariat was eager to take on HFCs right back in 2009, even though many Parties were not on board yet? The answers to this question are analyzed and coded accordingly to their content.

Moreover, the documents and interview transcripts are analyzed by looking for data that can be categorized under the code 'Mentions of Survival'. Any data that refers to the future relevance, the continued success or legacy and/or the survival of the Regime is coded under this code.

75% of the responses to the question (Interviewees that do not have an answer are excluded) should confirm that the answer has to do with survival or any of the related concepts (future, continued relevance/success, legacy). This threshold is adopted as it is regarded as an acceptable percentage to conclude whether the hypothesis holds.

2.3 ETHICAL CONSIDERATIONS

As with any study, the ethics of carrying out the research must be considered. There are two areas in this study that require elaboration in terms of ethics: choice of methods & data collection and processing.

First, there are some implications that come with the research methods chosen for this research. Therefore, it is ethical to disclose these implications and how they are counteracted. In any qualitative research approach, transparency is key (Bowen, 2009 ; Bryman & Bell, 2007). For the document analysis, detailed information on the design of the analysis makes the research more robust (Bowen, 2009). Transparency is also an important factor to ensure repeatability and credibility of the results, especially when it comes to coding (Bryman & Bell, 2007). Therefore, the coding schemes are included in Appendix B, the interview questions are added to Appendix C and the research approach is outlined in detail.

For the choice of method, risk of errors of omission are also considered. As the number of interview participants is limited, there is a possibility that data is missed that should have been in the research. To minimize this risk, key figures have been interviewed and the document analysis is used to triangulate the data and the results.

In terms of data collection, the following principles were applied to make this process as ethical as possible. First, all participants were informed multiple times about being kept anonymous, needing to be recorded and requesting permission for this, being able to voice questions and concerns, having the possibility to reject questions, and having the option to stop the interview at any time. Once when they were first approached, once before the interview via mail, and once at the start of the interview. Also, Interviewees were asked to sign the consent form in Appendix D. The collected data was stored via password protection and anonymous, and the recordings will be deleted after the project is finalized. In terms of processing, all participants remain anonymous in the records and report. They will also be sent a copy of the thesis afterwards.

CHAPTER 3: RESULTS



3.1 CONTEXTUAL BACKGROUND OF THE NEGOTIATIONS

Before the results are discussed that answer the research questions, it is important to give some insight into the contextual overview of how HFCs were picked up by the Montreal Protocol in the first place. This context turned out to be an important additional theme throughout the interviews and is included because the events leading up to including HFCs are also relevant as background when explaining why they were taken up by the Secretariat.

3.1a) Putting HFCs on the agenda

With the phase-out of CFCs and methyl-bromide nearing, the hole in the ozone layer restoring and universal ratification, the Montreal Protocol was achieving all its goals in the early 2000s. As a result, rumors started to emerge that the job of the Protocol might be done (Interviewee #12). In table 4, a detailed overview is provided of all fragments related to this idea. The first mentions go back to 2006, when former U.S. President Bush and Canadian Minister Harper wanted to form a conservatives-coalition that would retire the Protocol (Interviewee #5). In that same year, Interviewee #5, who researches decarbonization and fast mitigation of climate change, started to investigate what produces cooling quickly to combat the reinforcing feedbacks of CO₂. They found that the answer is to cut short-lived super climate pollutants that include HFCs, but also black carbon soot, tropospheric ozone and methane.

Simultaneously, it became clear that the UNFCCC and the Kyoto Protocol were not doing enough for climate (Interviewees #3, #5). Interviewee #5 saw an opportunity to approach the climate problem under the Montreal Protocol, as the Institute had already achieved many climate benefits (Interviewees #3, #5, #6) and there is a link to climate in the language of the Vienna Convention (Interviewee #9). After the paper by Velders et al. (2007) outlined the importance of taking up HCFCs under the Protocol, the Protocol took quick action and HCFCs were included in the mandate within the next year (Interviewees #3, #5, #6). HCFCs were also the final substance with a substantive ozone depleting potential (ODP), leading to the idea that by phasing out CFCs and HCFCs the job of the Protocol was now finally done since all known ODSs were controlled (#12).

However, this was not the case. The U.S. and the Federated States of Micronesia brought in 2009 a new topic to the agenda of the Protocol meetings: HFCs (Interviewees #1, #3, #11, #12). A paper by Velders et al. (2009) had emphasized the importance of phasing out HFCs to policymakers. The policymakers had listened and supported by a momentum in industry leadership (Interviewees #6 & #8), HFCs were officially brought to the Montreal Protocol to see whether they could be discussed here.

However, there is another underlying driver to all this (Interviewees #3, #5, #6, #8 & #9). Interviewee #5 was seen *“as the leading force behind pushing the Amendment by Micronesia. When you read the text I can see it’s his text and he has a motivation to really do something good for the world”* (Interviewee #3). They worked through the NGO AOSIS to approach the Federated States of Micronesia, who were interested to phase out HCFCs and phase down HFCs due to sea-level rise and the moral responsibility of the Protocol (Interviewees #1 & #5). Simultaneously, the climate negotiator under the Bush administration was also approached as the withdrawal from Kyoto left them looking for alternative strategies to gain climate benefits (Interviewees #5 & #6). As Interviewee #3 points out, if you are passionate about something and want to include that in the Montreal Protocol, you only must find one out of 190 countries that likes your idea and can promote it, which is what Interviewee #5 did.

To summarize, HFCs were put on the agenda because of a momentum that had been created for climate action under the Protocol due to the apparent benefits of their previous actions. This momentum was tapped into by the Federated States of Micronesia and the U.S. to propose Amendments for HFCs. This idea came from Interviewee #5 and their team and its hard work to do something good for the planet and use existing institutions for this.

3.1b) The drivers that led to the Kigali Amendment

Once HFCs were introduced to the agenda, it took a long time before the Kigali Amendment was agreed upon. For years, the negotiations were stalled by discussing whether HFCs should be discussed at all. As Interviewee #8 points out *“never a clear argument was presented why HFCs fall under the jurisdiction of the Montreal Protocol”*. During this long timespan, there were a few important drivers that ultimately led to the Amendment.

The proposals by the U.S. and Micronesia grabbed the attention of multiple states, as they recognized that they had a responsibility to *“clean up their own mess”* (Interviewee #1). Most Interviewees refer to these Parties as being a main driver. They wanted to protect the earth and continue to do so by negotiating HFCs: *“It was interest for protecting the earth’s environment that brought all these people together”* (Interviewee #4). Also, the *“unshakeable moral obligation”* (OS #42) felt by these Parties was a strong driver to propose to amend HFCs.

Another big element was the final steps in the negotiation process. In the last stages, John Kerry came to the meetings to encourage Parties to amend HFCs and personally talked and negotiated with all Parties who were still blocking the negotiations. Eventually, the push by the U.S. and the Obama administration, their enthusiasm and how their presence encouraged other high-level decision-makers to join the final meetings are a major element as to why the Kigali Amendment was accepted in 2016 (Interviewees #5, #11 & #12).

Other drivers that were mentioned by Interviewees are (1) the role of the three Assessment panels in dealing with the issues raised by Parties (#11), (2) the way the Proposals designed tailor-made solutions for different groups of countries (#3), (3) the breaking through of the deadlock via a non-paper by the co-chair and Tina Birmpili’s proactive approach (#3, #5 & #9), (4) the loss of an excuse to not discuss HFCs when the Paris Agreement was finalized (#3 & #5), and (5) the science that outlined the benefit of energy efficient replacements for HFCs (#5 & #6).

3.2 WHAT ROLE DID THE OZONE SECRETARIAT TAKE ON AND HOW, AND HOW DID THAT ROLE INFLUENCE THE NEGOTIATIONS?

This first segment outlines all the functions of the Ozone Secretariat retrieved from the document and interview analyses (for the number of references per code and subcode, see Appendix F.1). These functions are important to discuss, because they give insight into how the Secretariat facilitates negotiations and draws a conclusion on the autonomy and influence of the Secretariat. It also provides the basis for reflections on the legitimacy of the Ozone Secretariat.

Observing the subcodes under the code 'Secretariat functions' gives insight into the functions of the Secretariat as discussed in the meeting reports, ENB reports and interviews. Naturally, summaries of meetings do not provide the exhaustive list of Secretariat functions because it is likely that not all are discussed during official meetings. Therefore, enriching the analysis with the interview data was important, and it has yielded some important additions to the document analysis data. All the functions found in the analysis are elaborated upon below.

3.2a) The role and influence of the Ozone Secretariat

Planning and organizing meetings or workshops

A significant part of the Secretariat's work is the planning, preparing and organizing of all kinds of workshops and meetings. The Secretariat is *"very instrumental"* in setting up formal and informal groups (Interviewee #12) and their role in planning meetings is always *"critical"* (Interviewee #10). This work can be divided in three stages: planning of meetings, facilitating meetings and evaluating meetings. The first stage includes producing materials, scheduling dates, and arranging venues. The second stage involves the smooth operation of meetings, such as organizing spontaneous balanced representative contact groups that do not overlap in larger meetings, but also ensuring that all planned agenda items are discussed properly. The last stage involves the development and sharing of minutes and arranging of other tasks requested upon the Secretariat during these meetings. Besides organizing meetings only for themselves, the Secretariat has also worked together with for example the World Meteorological Organization and the IPCC to organize workshops.

After most meetings, words of thanks are expressed towards the Secretariat for their hard and good work in organizing meetings. When the Kigali Amendment was adopted, the Secretariat was specifically highlighted for their *"tremendous hard work and their achievement in facilitating the negotiations leading to the adoption of the Amendment."* (OS #42).

One crucial meeting for successful adoption of the Amendment was the workshop on HFC management. This workshop was designed by Executive Secretary Tina Birmpili and the Ozone Secretariat to help overcome some key technical and communication issues that were causing a deadlock in the negotiations. In the meetings after this workshop, the deadlock was resolved, and Parties could again continue with fruitful discussions that would eventually lead to the adoption of the Amendment (ENB #24, Interviewee #7).

Another example where the influence of the Secretariat shines through is the smoothness with which the Secretariat handles meetings. References are made to the Secretariat's preparation and ability to facilitate and intervene, when necessary, which *"evidences the regime's maturity"* (ENB #7) and how they are *"smoothing out which are the right combinations [of experts to chair meetings] to get things done."* Also, they can give their political perspectives in meetings *"because they can put in what's relevant for the Parties"* (Interviewee #3).

Drafting, preparing, or reporting of information

This subcode has by far the most references for both ENB and OS reports (see Appendix F.1), which gives an indication of the sheer amount of information the Secretariat prepares and handles. This information ranges from knowledge notes regarding technical or legal definitions, scenarios on financial reports and budgets, summaries on achievements to drafts on proposed Amendments. From this range, it becomes clear that the Secretariat is an important body of knowledge within the Ozone Regime that can be deployed for almost any task that is requested of them.

What became apparent from the interviews, the Secretariat is given a lot of responsibility regarding handling all this information. The Secretariat prepares a large share of information, and often officials only provide some comments before approving the documents and mandate texts (OS #13, Interviewee #12). It is not uncommon for the Secretariat to nudge certain information in a direction that is deemed important (Interviewees #2 & #7). One explicit example is how, alongside a draft outcome document, the Secretariat sent a letter of encouragement to small island developing states (SIDS) to liaise with their governments to ensure that ozone issues were of concern to them (OS #24). Another, example is how the fact sheets provided by the Secretariat to overcome deadlock in the HFC negotiations were an influential part in the process of powering through the deadlock and signing the Kigali Amendment (Interviewee #7). A last example is how the Secretariat could frame information to further HFC negotiations: *“we could package information which would be facilitative of this process and eventually we concluded that it was possible to have this chemical at the Montreal Protocol without upsetting what was happening under the Climate Change Convention.”* (Interviewee #2).

The Secretariat is also able to write down their own ideas and share them with the States, if they are in line with the issues being discussed (Interviewees #6 & #7). As Interviewee #6 describes: *“by having the Secretariat hunting down problems, proposing solutions. Often there is a Secretariat paper on an issue [...]. The Secretary will sometimes write their own little essay. They get all the staff together, they talk to knowledgeable people [...]. It is an incubator of ideas.”*

Here, it shows that, if desired, the Secretariat can influence the recipient of the information that is prepared by them. This also gives the Secretariat the ability to influence certain aspects of the HFC negotiation process, as much information for those negotiations came from the Secretariat.

Setting the agenda & Introducing the agenda

Another focal point of the Secretariat during meetings is when the Executive Secretary introduces the agenda for the meeting. The agenda is drafted by the Secretariat beforehand.

The Secretariat ultimately decides what is put on the agenda, and which items need the most attention. This is apparent from excerpts of the document analysis data, where the Secretaries highlight certain agenda items by explaining why they are important to address and what should be addressed at what time in the meetings (e.g., ENB #16, OS #16, OS #9, Interviewee #2). Interviewee #2 emphasizes that the *“influence of the Secretariat cannot be underestimated in how we set the agenda of the meeting”*. The Secretariat remembers through its institutional memory what Parties want to discuss in which years, and it is in a good position to put those issues on that should be brought to the attention of the Parties. *“If we are not proactive, there could be some items for critical issues which will fall through the cracks.”* (Interviewee #2). The Secretariat was also important in keeping the HFC phase down proposal on the agenda in the early stages (Interviewee #9).

Reaching out to or collaborating with other institutions

One function of the Secretariat that has many references is the collaboration with other institutions within or outside the Ozone Regime (see Appendix F.1). A large share of these references are suggestions made by Parties that more collaboration with the UNFCCC Secretariat was needed during HFC negotiations. Some Interviewees also said that there was some interaction between the two Secretariats, but actual collaboration remained small. Other, more successful collaborations were with the World Meteorological Organization and the IPCC, visible from some co-produced reports (Interviewee #3).

Although most entities during such collaborations do not have the power to make decisions, they can brainstorm and consult with each other on certain issues, with the results of such sessions being brought back to the Parties (OS #1). The Secretariat thus does have the opportunity to discuss what they deem relevant, and consequently bring that back to the Parties. Examples of the UNFCCC Secretariat and Global Environmental Facility shows how the Secretariats are left to organize these collaborations (OS #2, OS #3), which brings us back to the argument that through organizing workshops and meetings, the Secretariat also exerts influence. With regards to HFCs, the important collaboration was with the UNFCCC. According to Interviewee #7, *“the collaboration was quite smooth [...] I’m not saying it was easy, but I cannot say that I had issues convincing my colleagues in the UNFCCC.”*

Supporting other OR institutions & Channeling questions from Parties to the Assessment Panels

As was already briefly discussed under *‘reaching out to or collaborating with other institutions’*, the Secretariat works with institutions both within and outside the regime. It has a supporting function to the institutions within the regime, such as providing administrative and organization support to the Assessment Panels (ENB #27, Interviewee #1).

Throughout this support, the Secretariat could exchange its views on assessments made by the panels. One example is how the Secretariat could recommend the SAP *“when more detailed assessments may be warranted”* (ENB #3). Here, it shows an opportunity for the Secretariat to express its own views and opinions on work by the SAP, thus showing its influence. Another example is how the co-chair of an OEWG and the Secretary express their willingness to discuss procedural implications with Parties bilaterally (OS #18), where the Secretariat would also have the opportunity to influence outcomes through their support. The main influence is how the Secretariat is *“constantly in communication”* (Interviewee #4) with all Ozone Institutions and how they provide advice and are asked for advice (Interviewees #1, #3, #9, #10).

Contacting and assisting the Parties to the MP

In theory, the functions dictated in the Secretariat’s mandate can be narrowed down to one element: their functions are those assigned to them by the Parties (see Appendix E). But in practice, the link between the Parties and the Secretariat is bidirectional. The Secretariat must inform and remind Parties of information that the Parties are required to submit. But also, sometimes Parties must be consulted first before the Secretariat can respond to requests from outside (ENB #5).

There are references made to how the Secretariat sometimes visits countries to accelerate or facilitate ratification of Amendments to the Protocol (OS #16, Interviewees #2, #6, #9 & #11). One Interviewee outlines how Parties that were still not comfortable with phasing down HFCs were approached by the Secretariat: *“Tina [Executive Secretary] did a lot of outreach to those countries.”* (#9). The Secretariat thus influenced Parties to ratify the Amendment. This influence stems from the

expertise the Secretariat has and how they listen to the concerns and struggles of the Parties (Interviewee #2). The Secretariat is even sometimes credited with the universal ratification status of the Protocol through its efforts to reach out to Parties (OS #6, OS #8, OS #16, OS #19).

Providing advice during the meetings

Although it does not occur too often, sometimes the Secretariat's representatives in meetings give their advice on certain matters. These matters range from providing requested legal and procedural advice (e.g., OS #30, OS #32) to giving unsolicited advice on certain issues such as which action needed to be taken by Parties (ENB #15) or the elements that had been identified that need to form part of the draft mandate for HFCs (ENB #26).

When the Secretariat, on a rare occasion, gives unsolicited advice during meetings, it is likely to have an influence on the meeting. The Secretariat is regarded by the Parties as a trusted body of great expertise, and any advice given by them is thus likely to be perceived as legitimate. For example, if a co-chair of a meeting is stuck or getting in trouble, they *"usually receive signals by the Ozone Secretariat"* or *"get certain hints"* on how to proceed in difficult situations (Interviewee #12). There is also the rare instance that the Secretary has drawn attention to a note by the Secretariat (OS #40), which provides a potential source of influence too.

Approaching outside experts & Organizing the writing of reports by experts

The Secretariat reached out to (outside) experts to organize reports, give presentations or facilitate meetings. In short, these experts were approached due to their expertise, and the Secretariat saw added value in involving these people into the HFC negotiations.

Interviewee #3 was approached directly to give a scientific presentation. Interviewee #6 explains how Executive Secretary Marco Gonzalez would approach people who were affiliated with a country that was obstructing the negotiations to get that country on board: *"Marco would recruit people to help him with a particular country"*. Interviewee #7 explains how they brought in professional moderators when the negotiations hit a deadlock who specialized in conflict resolution and mediation. *"They were very good at retrieving information and seeing where the different points of consensus could be, so we went to professional mediators."* (Interviewee #7).

Smoothing out and balancing contrasting demands of Parties or issues

Many Interviewees point out how the Secretariat had a big task in getting everybody on the same page. Parties often had contrasting demands, but also many issues needed to be smoothed out (#1, #2, #3, #4, #7 & #9).

By facilitating all these contrasting demands and issues, the Secretariat's influence was especially visible behind the scenes. One Interviewee points out how *"they were behind the scenes smoothing a lot of things, getting countries in line."* (#3). The right people for back-room negotiations needed to be found, and the Secretariat did that (#3). The role of the Secretariat was to create safe spaces where Parties could come and talk. By getting these Parties to talk, their stances became softer and more willing to find common ground. Especially Tina Birmpili was great in being able to understand people and their concerns, as well as the politics to work with those concerns (Interviewee #9). As one Interviewee put it, during the HFC negotiation process *"the Secretariat is like the backbone of the whole operation."* (#4).

Teaching new actors to the Protocol's ways

When the Protocol expanded to being a climate treaty by taking up HFCs, a movement was observed with regards to who joined meetings. More climate negotiators were coming in. At times, they took over the meetings with a completely different attitude and mentality. The Secretariat made a great effort to ensure that the successful approach to meetings of the Protocol were adhered to and were not too much affected by slow climate politics. They did this by explaining to the climate negotiators how the Protocol works and why it was important that they stick to that plan (Interviewee #7).

Rebuilding trust

The trust of some Parties in the process and in their fellow Member States faded during the HFC negotiations. The Secretariat played a big part in rebuilding it by creating a space of trust. They did this by getting Parties not only to talk, but really communicate with each other (Interviewee #7).

Other, non-influential roles

Other roles of the Ozone Secretariat refer to the publishing or updating of website information, taking notes during meetings, involvement in financial matters, monitoring levels of ODSs, and paying tribute to key figures in the Ozone Family. These roles, although important, do not give the Secretariat influence on the negotiation processes.

The information on the website is produced by the Secretariat. Therefore, the Secretariat can exert influence through what it writes on the website. However, this influence is not expected to be tied together with influencing negotiations since the information written by the Secretariat is meant for the public visiting the website. The information for the Parties only refers to procedural aspects and the publication of documents and data.

The notes the Secretariat takes during meetings are turned into minutes and meeting reports, which are distributed to all participants afterwards. They only contain factual representations of what happened during the meetings and what was agreed upon.

The most common financial tasks are to draw down amounts of the Multilateral Fund's balance when agreed upon during COPs or MOPs. The Secretariat is also asked to manage the Trust Fund's finances. This management is referred to as "*excellent*" (ENB #3) and shows the responsibility of the Secretariat and the trust by the Parties in the Secretariat.

One of the main tasks of the Ozone Secretariat is to monitor consumption and production levels of ODSs by each Party. In cases of non-compliance, the meetings discuss the appropriate action.

Finally, during meetings, the Secretariat is often the body who pays tribute to key figures in the regime. For example, moments of silence are requested to honor the memory of late key figures, appreciation is voiced towards those who are retiring, or awards are presented to those who delivered exceptional work.

3.2b) How the Ozone Secretariat took on this role

In this section, the way how the Secretariat approached the negotiations is outlined. First, whether they wore the 'veil of legitimacy' during the negotiations is researched according to the three criteria developed earlier in the thesis. Second, an additional finding in the data is presented.

'Veil of legitimacy'

The results of the analysis are presented in Table 2. For the first criterion, one overarching observation from the data regarding how the Ozone Secretariat acts out its roles is that they do it mainly from

behind the scenes¹⁵. Interviewee #2 explains how a share of the Secretariat's roles cannot be acted out in the formal meetings because that would not be successful as Parties might oppose them. Instead, the Secretariat takes on a neutral stance in the formal meetings and facilitates through the cracks with the knowledge of everyone's positions in their mind. By using that knowledge and being active behind the scenes, the Secretariat can make sure all Parties get their heads faced in the same direction (Interviewee #2, #3).

Indeed, that the Secretariat works behind the scenes was also acknowledged in some OS documents, where the Secretariat was repeatedly thanked for its efforts, also those taking place behind the scenes (OS #6, #10, #14, #17, #20). It is also remarked in the ENB documents how some HFC negotiations were informal and took place behind closed doors (ENB #8, #11, #27). There was also a warning for how such closed-off discussions could make some delegates feel excluded, which would weaken the successful reputation of the Protocol (ENB #8).

One Interviewee points out how Executive Secretary Marco Gonzalez was very active behind the scenes and in doing so was very influential on the HFC negotiations (#3). Another Interviewee refers to how they and the consecutive Executive Secretary Tina Birmpili worked together on the language of the proposed Amendment. They discussed a lot one on one behind the scenes before the Interviewee would bring the language into the official meetings (#9). They also outline how they think it is appropriate for the Secretariat not to be seen showing a certain favoritism in public, but still work on a path forward behind the scenes.

The second criterion was more difficult to research, as it was often not explicitly mentioned that the Secretariat reframed their ideas or recommendations. Nevertheless, there is evidence that they did carry out crucial actions without taking credit for it. For example, Interviewee #2 explains how the Secretariat was a key factor in getting all Parties to agree, but when asking Interviewee #7 about this, they downplayed this instrumental role of the Secretariat. Another example is how the Secretariat was responsible for breaking through the deadlock in 2014 (see 3.1), but when discussing this issue one Interviewee downplayed this by immediately outlining that the Parties are the ones in charge of the negotiations (Interviewee #7). A last example is how the Secretariat sometimes framed their ideas through other people in the Ozone Regime. Tina Birmpili would suggest what language to use for the Kigali Amendment through one of the co-chairs of the negotiations (Interviewee #9).

For the last criterion, there is no evidence found of Parties objecting to any ideas and suggestions by the Secretariat. From ENB #8, it becomes clear how the Secretariat puts much effort into ensuring that all Parties feel heard in discussions where the Secretariat plays a role. Moreover, Interviewee #2 makes a reference to how they package the information for the Parties and how they advise them is very important for the success and acceptance of the advice. They also outline how it is important to frame recommendations in a certain way, so the Parties do not *"hit back by saying 'we don't want to discuss the issue'"*.

To varying extents, there is evidence found that confirms each criterion for proving the Secretariat operated from behind a veil of legitimacy (see Table 2). An additional finding that strengthens this conclusion is how one Interviewee elaborates on how the Secretariat had *"to straddle that fine line between being independent and not favoring one party over another, but still being able to keep something important, like the HFC phase down proposal, on the agenda"* (#9).

Table 2. Results of the operationalization of the concept 'veil of legitimacy'

¹⁵ Retrieved from the code 'Mentions of Criteria Veil Of Legitimacy' (see Appendix F.2).

Criteria	Operationalization	Conclusion
Working behind the scenes	The Secretariat should be working actively from behind the scenes	There is evidence found that the Secretariat worked actively behind the scenes, thus this criterion is accepted.
Downplaying ideas and recommendations	The Secretariat should reframe their ideas and recommendations to something more informal than they are	There is some evidence found that supports that the Secretariat downplayed its ideas and recommendations. Therefore, this criterion is accepted.
No challenging of those ideas by Parties	The Secretariat's proposed ideas and recommendations should not be challenged by the Parties	There is no evidence found that Parties reject Secretariat ideas. It is also outlined how the Secretariat tries to prevent this from happening. Therefore, this criterion is accepted.

Eagerness

An additional finding was also a theme that appeared from the analysis. It becomes clear from the interviews that the Secretariat took on its roles with much enthusiasm, passion and drive. Interviewee #1 describes how the people that work there *“really do care and work damn hard to drive change”*, and Interviewee #3 adds how the Secretariat was *“quite active”* in pursuing HFCs under the Protocol. Interviewee #11 describes how they can see from the Secretariat's actions that they are very positive and active and have a strong will to facilitate the HFC process. One illustrative example was painted by Interviewee #6, who explained what the office of the Secretariat looks like: *“when you get to the ozone door, it's like a sweatshop. It's a beehive. It's people that are just churning out stuff.”*

This passion and enthusiasm is largely credited to Marco Gonzalez. Multiple Interviewees explain how he was the driving force behind the Secretariat's enthusiasm to take on HFCs right from the start (Interviewee #6 & #9) and how he was quite active in trying to make sure the proposals did not die (Interviewee #9).

Conclusion

It can thus be concluded that the Secretariat operated to take on HFCs both eagerly and from behind a veil of legitimacy. However, the puzzle that was discussed in the theory also came back from the results, as it is pointed out by one Interviewee how Marco Gonzalez *“was also quite active in trying to make sure the proposals did not die [...] as there was more opposition to this in the very early days.”* (Interviewee #9). It is thus still unclear why the Secretariat was motivated to take on HFCs even with this much opposition.

Section 3.3 elaborates on where this eagerness comes from by analyzing whether the hypothesis that the motivation of the Secretariat is rooted in their drive for survival. This section attempts to solve the final piece of the puzzle that is still unclear now: why the Secretariat chose the side with those in favor of HFCs and eagerly facilitated that perspective.

3.3 WHY DID THE OZONE SECRETARIAT DECIDE TO PLAY THIS ROLE?

This section presents the results found in the two codes ‘Mentions of The Job Is Done’ and ‘Mentions of Survival’¹⁶. The most important fragments are presented in two tables, to provide a transparent overview of the findings. The remaining data categorized in these codes is outlined in the text.

3.3a) ‘Mentions of The Job Is Done’

In Appendix F.4, an overview of the total files and references from the coding is presented. In Table 3, the clearest fragments are presented. From this data, it can be concluded that indeed in the 2000s, notions began to emerge that the job and relevance of the Protocol, and thus the Secretariat might be finished. The strength of this evidence is considerable, as all three data sources have referred to it.

At the same time, many fragments already indicate how it would be a waste to lose the Protocol, and thus action needed to be taken.

Table 3. Overview of fragments from the data analysis that refer to how before taking up HFCs, the work of the Montreal Protocol was sometimes regarded as being finished

Mentions of The Job Is Done	Reference	Year
<i>“Despite its achievements, the Protocol is now starting to lose momentum.”</i>	ENB #1	1999
<i>“Some delegates privately argued that the regime should now move onto a biennial schedule, with a MOP and a preparatory OEWG only every two years, as there is not enough business to warrant the current annual round of meetings.”</i>	ENB #2	2000
<i>“However, this does not mean that the Protocol is home free, rather, it faces a daunting transition. While Parties congratulated themselves on a successful MOP-18, some warned that a redoubling of efforts to comply with the phaseout schedules is indispensable to the Ozone Regime’s continuous existence. One participant eloquently referred to the current stage of the Protocol as the “Edmund Hillary step,” i.e., the last push towards the peak of Mount Everest.”</i>	ENB #10	2006
<i>“At the end of the day, the new areas of substantial work, especially on HFCs, are the ones that will give the Protocol a new lease on life.”</i>	ENB #19	2012
<i>“In her opening remarks, Tina Birmpili, Executive Secretary, Ozone Secretariat, said that sometimes the successes of the Montreal Protocol (MP) have created the impression that its job is done, when in fact more work remains.”</i>	ENB #22	2014
<i>“She [Tina Birmpili] noted that the ozone community needs to change the narrative if the momentum is to be kept alive. To be part of an emerging agenda or an agenda that continues to be relevant to the decision makers, including and in particular those who decide on funds, on policy, and research priorities, there is a need to shift the notion that the ozone layer protection is already achieved, and thus the job is done.”</i>	OS #21	2014
<i>“The success of the Protocol raised the question of whether it had come to the end of its useful life. It was clear, however, that that was not the case, and the Montreal Protocol would continue to be an important instrument into the future. First, it would be a waste to lose such a highly effective and proven instrument and platform, underpinned by science and working in harmony with many agencies in the United</i>	OS #34	2015

¹⁶ For the code ‘Secretariat’s voice’, there were no subcategories defined that were directly helpful for answering the subquestions. Instead, the findings under this code have been redistributed under the other two codes. The results for the amount of data under this code is in Appendix F.3.

<i>Nations system and offering great opportunities as a vehicle for future collaboration. Second, the Montreal Protocol was embedded in a far larger set of challenges, including climate change."</i>		
<i>"Yeah, I heard that, I'm not sure if that's true, the Protocol was mostly finished business. So the CFCs were phased out in 2010. They were forbidden and HCFCs should be phased out. After that, there will be nothing for the Protocol anymore. So if you're not having active meetings and something to negotiate it dies out. "</i>	#3	NA
In 2006, both President George W. Bush and Canadian Prime Minister Harper were opting: <i>"Why don't we shut down the Protocol. This treaty has done its job, we don't need it anymore."</i> This group of conservatives wanted to <i>"take credit for dismantling a treaty"</i> by sunseting the Protocol because it did its job.	#5	2006
This Interviewee added to explaining why HFCs were taken up under the Protocol that the Protocol would be finished with HCFCs in 2030, <i>"which is the previous generation. So, it is a continuation of work as well, right?"</i> .	#7	NA
Around 2010, it was quite common in the ozone community that parties would talk about how the Montreal Protocol had <i>"reached its ending point."</i> Peers would discuss the Protocol and talk about how it did a great job in protecting the ozone layer, but that there is nothing new to be explored.	#11	2010
<i>"And I remember even in 2008 or 2006, it was only an idea, a decision, how to get to retire the Montreal Protocol. It never flew as a proposal. It was a proposal by an article-2 party, not a very big one. But the proposal was already raised. This could be the end game of the Montreal Protocol."</i>	#12	2006 or 2008
In 2010, the phase-out of CFCs and HCFCs - the heavy ozone depleting substances - <i>"were finished and this was really the end of an era."</i> <i>"It was perceived that this would be more or less the end of the Montreal Protocol as we knew it before."</i> This made it clear in the regime that the Ozone Secretariat for the next 20 years was still necessary with regards to implementation but would not be important anymore. <i>"In the understanding of the Secretariat, there was also some fear that they could be ranked back also within the international community, not only in the ozone."</i> There was a fear that the meetings would be scaled back to once every couple years, and the Secretariat's main tasks would thus become obsolete.	#12	2010

3.3b) 'Mentions of Survival'

Results from the coding

Actions to keep the Protocol and Secretariat relevant and alive resulted in turning the Protocol into a climate treaty by amending HFCs. From the results it appears that the Secretariat's motivation to amend these HFCs is rooted in their goal to survive. The code 'Mentions of Survival' found five subcategories (see Appendix F.5).

The first category, 'Continuing the relevance of the Protocol', is the most referenced one. This code relates to survival as in that the fragments under this code stress how it is important for the Protocol and Secretariat to ensure continuous relevance to survive. Many references are made to how the continued leadership of the Protocol will determine its future (e.g., OS #21, OS #30, ENB #15, ENB #18). It is also emphasized staying relevant as an institution makes a solid case for the continuation of that institution (e.g., OS #24, Interviewee #7). Lastly, it adds how the HFC Amendment has established the future relevance of the Protocol (e.g., ENB #27, ENB #30)

The second category, 'Expanding to a climate treaty', has the second the greatest number of references. This code outlines how the life of the treaty is extended if it is turned into a climate treaty. The benefits for climate of the Protocol's past actions make a good precedent to officially turn it into

a climate treaty by amending HFCs (e.g., OS #10, OS #20, OS #24, ENB #18, ENB #20, ENB #29, Interviewee #5, Interviewee #10). But also, turning into a climate treaty was seen as the best chance to have the Protocol survive (Interviewee #5, Interviewee #6).

Both ‘Facing new challenges’ and ‘Preserving the legacy’ yield similar amounts of references. The results emphasize how the Protocol and Secretariat should face new challenges to stay alive and relevant in the future (e.g., OS #17, ENB #18, ENB #25, Interviewee #6), and how the Secretariat how the Secretariat *“ought to be shopping for the next topic”* (Interviewee #6). But it is also how they are well suited to overcome new challenges such as HFCs (e.g., OS #21, ENB #13, ENB #29).

Preserving the legacy refers to how the success of the Protocol and its institutions should be preserved into the future, because it is a waste to lose them (e.g., OS #34, OS #37, ENB #30), but also how not amending HFCs would undermine the legacy (e.g., Interviewee #1, Interviewee #4). However, this argument is also used to defend why HFCs should not be amended, with one actor pointing out how the Protocol should preserve its legacy by maintaining a sole focus on ozone (OS #27).

The subcode that was the least referenced is ‘Rebuilding trust’. Trust is seen as a crucial factor that has contributed to the success of the Protocol and it should not be taken for granted (OS #12, OS #23, ENB #21, ENB #25, Interviewee #7). The trust in the institutions of the Ozone Regime took a hit during the whole process of amending HFCs (ENB #27, Interviewee #7). This needed to be rebuilt to protect the future success of the Protocol and Secretariat (OS #30, ENB #27, Interviewee #7).

Reviewing the hypothesis

So, how can these results be linked to reflecting on the hypothesis of this research? Table 4 outlines all perspectives of the Interviewees on what they think motivated the Secretariat in the end to amend HFCs right from the start.

From this Table 4, it can be confirmed that the drive of the Secretariat to take on a proactive role to negotiate HFCs stems from their need to survive. This evidence is closely linked to and overlaps with the evidence in Table 3 (see Interviewees #5, #7, #11, #12). This thus means that the feeling that the job of the Secretariat might be done and how the Secretariat wanted to survive rather than put down its work need to be regarded in unison in the argumentation.

Interviewees #3, #5, #7 & #12 initiated talking about the concerns of the Secretariat about its future and how HFCs were a strategy to take away these concerns. They either started the topic themselves or as a response to the question if they knew why the Secretariat was so eager to push for HFCs right at the beginning when many States were still against it.

Interviewees #6, #8 & #11 confirmed that concerns for the future was a motivation for the Secretariat when they were asked if they knew whether future relevance played a role.

When asking this question to Interviewee #8, they responded that instead of being motivated by a drive for survival, the motivations of the Secretariat were purely altruistic.

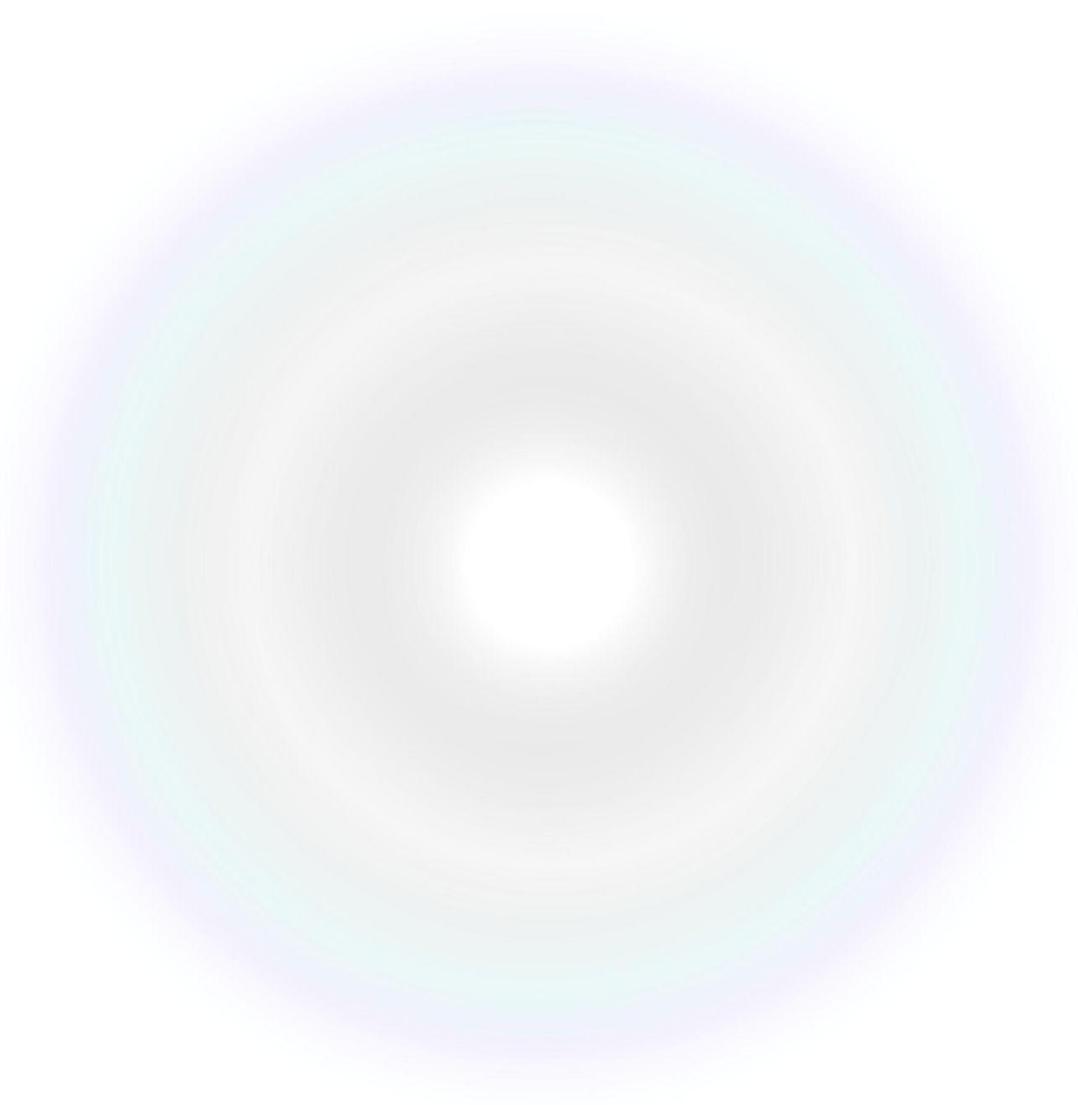
Table 4. An overview of the perspectives of all Interviewees regarding the hypothesis

Interviewee	Occupation	Perspective	Confirmation
#1	Co-chair/senior expert	N/A	N/A
#2	Secretariat employee	N/A	N/A

Interviewee	Occupation	Perspective	Confirmation
#3	Lead expert and author	They heard that the reason why the Secretariat was eager to facilitate the negotiations was because it was a way to keep the entire Protocol and its institutions active and alive. <i>"If you are not having active meetings and something to negotiate it [Montreal Protocol] dies out."</i>	Yes
#4	Independent consultant	N/A	N/A
#5	Lead expert and author	They observed how Tina Birmipili especially saw the importance of keeping the institutions alive. <i>"Tina [Executive Secretary Tina Birmipili] was not timid. She's very strong in her talents and her vision. And so, I believe she could see immediately why this was good for the world? Why this was good for the treaty? So, the treaty, these agreements can wither on the vine."</i> Then they explain how President Bush and Prime Minister Harper wanted to dismantle the treaty, what would happen if they did and why that motivated the Secretariat to act: <i>"and that would have lost the world one of the greatest governance approaches we've ever created. And so, I think Tina [Executive Secretary Tina Birmipili] could see the future importance of turning the Protocol into a climate treaty while it also still did Ozone protection."</i>	Yes
#6	Lead expert and author	They heard about the concerns of what the next stage for the Protocol would be and argued how it is healthy for an organization to find ways to stay relevant and alive. <i>"Was there a benefit for the Protocol? I think it's a healthy thing for an organization to look to its own future. And that it it's a you know what, you just described it's a place with self-pride and success and it knows how to work with people and and so if they're, if they're running out of all these ozone depleting substances, and they have this, they built this wonderful organization that consult problems, they ought to be shopping for the next topic. And that they should be competitive with other places in the United Nations. Healthy competition and created tension. I mean what's better than to have the Montreal Protocol take on the HFCs?"</i>	Yes
#7	Secretariat employee	They refer to how jumping on HFCs is a continuation of the work which would otherwise end in 2030. <i>"In a way, it was also because the Montreal Protocol ends in 2030. Now it's finished with the HFCs, which is the previous generation. So, it is a continuation of work as well, right? It's a continuation of an institution that means a lot. And there is a sense of belonging in this institution. There is a sense of, you know, being part of something that works. It's very important and I think this also gives us a bit of an identity, you know, and it's very nice to be part of something, which works."</i>	Yes
#8	Co-chair/senior expert	They confirm how the concern for the future of the Secretariat played a role in moving towards HFCs and how they had heard this in informal settings more than once within the Ozone Family. <i>"It indeed played a role."</i> <i>"It is a way to artificially, so to speak, extend the life of the Montreal Protocol."</i> But they also highlight how they think there are more motivations than one <i>"I do think that there are other arguments that are also important."</i>	Yes
#9	Co-chair/senior expert	This Interviewee denies that concerns for the future were important. <i>"I certainly wouldn't say it was the motivation to</i>	No

Interviewee	Occupation	Perspective	Confirmation
		<i>prolong the life of the Secretariat. I think the motives within their secretariat were very altruistic and I think the motivation there was there is a problem. Montreal Protocol is ideally placed to deal with it. And Montreal Protocol can deal with it, probably more quickly than going through another process. So, my way of thinking was that the motives were always pure and for the good of the environment.</i> They also go one to explain how the motives of the staff also matter. <i>“Ultimately, she’s [Executive Secretary Tina Birmpili] not doing it for any personal gain. That she’s very much for what she can do to improve the planet.”</i>	
#10	Co-chair/senior expert	N/A	N/A
#11	Co-chair/senior expert	They confirmed the impression that it was a concern that the work of the Protocol was finished and how Parties <i>“would talk that the Montreal Protocol has reached its ending point.”</i> They consequently explain how the political will to continue turned into the long-term strategy to take up HFCs so the relevance of the Protocol could continue.	Yes
#12	Co-chair/senior expert	They started by explaining how the work of the Secretariat appeared to become abundant soon: <i>“So for the next 20 years, the Ozone Secretariat in fact was necessary but not anymore important.”</i> Then, they outline how the decision to phase down HFCs created a new “important task” for the Secretariat, which would make it relevant again: <i>“Taking on board HFCs offered completely different perspectives.”</i> In their opinion, this is what motivated the Secretariat to join the Member States who were immediately for taking up HFCs instead of siding with the states who were still against in 2009. They also speak of how there was a proposal to retire the Protocol and that the Secretariat, because of their fear of this proposal, made an idea to stay relevant. Otherwise, it would be <i>“the end game of the Montreal Protocol”</i> .	Yes

CHAPTER 4: DISCUSSION



4.1 IMPLICATIONS AND LIMITATIONS

At the start of this thesis, the following research problem was outlined. It was a puzzle why the Secretariat of one of the most successful MEAs decided to facilitate the amending of HFCs under the Montreal Protocol, especially since HFCs are not an ODS. At first glance, this does not look so puzzling, as Secretariats are expected to serve the Member States and thus have autonomy on their own. However, as was established in the theory, Secretariats do have autonomy and with it also the ability to influence. With this in mind, the answer to the puzzle becomes less straightforward. If the Secretariat had a motive for facilitating the HFC negotiations, then what was this motive?

Therefore, this research set out to answer the following research questions. By first answering *what role the Ozone Secretariat played in facilitating the negotiations and how that role influenced the negotiations*, and consequently *why the Ozone Secretariat decided to play this role*, the answer to the research question can be found:

Why did the Ozone Secretariat facilitate the Kigali Amendment negotiations?

The hypothesis developed to answer this question established that the motivation was driven by the Secretariats need for survival.

Answering the first subquestion sees that the Secretariat took on many roles which gave them varying influence. Generally, their role was quite proactive. The Secretariat appeared eager to jump on HFCs, even though at the start of the negotiations a large share of Parties were not on board yet. Most of the Secretariat's actions to facilitate and influence the negotiations did take place behind the scenes, leading to the conclusions that the Secretariat operated from behind a veil of legitimacy.

The second question why the Secretariat took on this role in that specific way was researched to confirm the survival-hypothesis. First, the results established that right before HFCs were amended, there were concerns for the future of the Protocol and Secretariat. From the 8 Interviewees who had knowledge about the topic, 7 confirmed the hypothesis that the Secretariat's motivation was driven by a need to survive (see Table 4). This thesis finds 7 confirmations out of 8 to be a strong evidence base to accept the hypothesis. Extra value is given to some of the Interviewees who confirmed (#3, #5, #6 & #7), based on their position within the Ozone Regime.

In the next paragraph, the results are discussed. The most important results leading up to confirming the hypothesis are how the Secretariat behaved and influenced the negotiations and whether the motivation for the Secretariat to take on this role was motivated by the drive for survival of the Secretariat. Here, the results are reflected upon and their contribution to the research problem, the theory, practice and society is elaborated upon.

4.1a) Implications of the most important results

Ozone Secretariat's behavior, influence and approach

The results present an extensive list with roles the Secretariat took on during the HFC negotiation phase, which is a new contribution to the academic knowledge for the Ozone Secretariat. As was established, the Secretariat can draw influence through (a.o) coordinating and administrative functions (De Wit et al., 2020). The former concerns how the Ozone Secretariat supported other institutions within the Ozone Regime, supported Parties or helped new actors in the Regime navigate the ways of the Protocol. The latter covers the two major functions: planning and organizing meetings

and preparing information. But also providing advice during meetings and setting and introducing the agenda are administrative functions.

An important finding is that the Secretariat had a significant influence in the HFC negotiation process. They retrieved influence from certain roles they took on, as the theory expected. The most significant roles the Secretariat played for a successful outcome of the negotiations were preparing information in favor of an HFC take up, the planning of meetings to smooth out issues between Parties, contacting Parties and pursuing them to get on board, and reaching out to other institutions (specifically the UNFCCC) to collaborate on getting HFCs under the Protocol¹⁷.

Another important result is that the Secretariat operated from behind a veil of legitimacy. As Jinnah (2012) already noticed, Secretariats indeed tend to function from behind a veil of legitimacy. This finding does not stipulate that all of the Ozone Secretariat's functions were carried out behind this veil, or even all elements of one specific function. Rather, there have been some instances where the Ozone Secretariat operated a part of their role from behind the scenes, such as when they helped Parties with the drafting of the Amendment text to break through the deadlock (Interviewee #7).

An additional finding to how the Secretariat operated is that they took on HFCs with much eagerness. From the data, it became apparent that the Ozone Secretariat right from the start was very eager to jump on board the HFC-train.

Another interesting complementary result that stood out links back to the theory on regime overlap. According to some Interviewees (#2, #6, #7), besides collaboration between the UNFCCC and the Montreal Protocol, there was also some tension as to in which basket HFCs would fall. The Ozone Secretariat had to manage the overlap between the two regimes so that the frame would shift to helping each other instead of stealing substances from each other.

These findings thus confirm what the theory already suggested: that Secretariats can manage regime overlap, and they can do that partly from behind a veil of legitimacy, simultaneously giving them a substantial role in the decision-making process (Jinnah, 2014a)

One of the major contributions of answering the question of what role the Ozone Secretariat took on is that it provides a detailed case study to the field of Secretariat behavior studies. The body of literature that studies Secretariat behavior and influence remains rather limited, especially more recent studies are missing. The most prominent studies are by Biermann & Siebenhüner, 2013 ; Bauer, 2006 ; Bauer et al., 2007 ; Depledge, 2007 ; Bauer, 2009 ; and Jinnah, 2014a. The value of an in-depth case study into the behavior of the Ozone Secretariat is twofold: it confirms the existing theory on how Secretariats are expected to behave and influence & it can serve as a theoretical foundation for future research into the Ozone Secretariat or similar other Secretariats.

Another important aspect that more recent studies are missing is that the role of a Secretariat is also changing and evolving. A first example is how Biermann & Siebenhüner (2013) describe the Ozone Secretariat as an environmentalist secretariat, which stipulates it has significant autonomy and influence on negotiations by helping the drafting of decisions and supporting States where compromises need to be made. From the roles of the Secretariat, this description seems fitting. However, one Interviewee explains how they feel the Ozone Secretariat is an *“activist Secretariat in that it doesn't stand by to organize meetings and take instructions from the Parties, but it sorts out*

¹⁷ These are the most significant based on their number of references from the coding. The codes providing advice during meetings and involving in financial matters were left out, as their fragments did not contain information specific to the HFC negotiation process.

what is needed" (#6). And based on how other Interviewees describe the proactive attitude by the Executive Secretaries, it might be the case that the Secretariat has moved from being environmentalist towards being more activist.

One more example is what Interviewee #11 clearly explained. They saw the role of the Secretariat evolving in three phases. The first phase was the set-up phase. In this phase, the Secretariat had the crucial role to be the focal point for all Parties, as the institutional structure was still being developed. In the second phase, which is the phase the Secretariat was in during the HFC negotiations, the Secretariat talks to Parties about implementation and other issues, organizes events and meetings and proposes initiatives. In the third stage, the Secretariat has become more mature. The Interviewee felt that at the time of the interview, the Secretariat had reached that stage. This phase involves mainly housekeeping of the Protocol.

It would be a suitable and valuable topic for future research to investigate the evolving roles of Secretariats, both in terms of their functions and their motives. A conceptualization of different phases a bureaucracy goes through would be an interesting addition to the existing body of literature on Secretariat behavior.

Answering this question also generates a practical contribution. Multiple Interviewees indicated how they had not really reflected specifically on all the roles of the Secretariat, how they influence through those roles and what motivations underlie their behavior. They also indicated how important thinking about these questions is (e.g., #1, #6, #7, #8, #9). By asking these questions, research can stimulate practitioners to think about the impact the behavior of their institution has, and how they could and should deal with that influence.

Motivation of the Secretariat

The real novel result in this thesis is an answer to the question what motivated the Secretariat to eagerly facilitate HFCs, because there is hardly any existing research on what drives a Secretariat. To answer this question, the research researched two aspects. First, whether there was indeed an atmosphere within the political arena of feeling that the job of the Protocol was finished right before HFCs were brought to the table. Second, whether the motivation of the Secretariat was a counterreaction to this feeling, linked to a drive for survival. Both aspects were confirmed by the results.

It was surprising to find clear references to the feeling that the work of the Protocol was finished considering the difficulty with finding supporting evidence in the theory. When speaking to the Interviewees about this, they mentioned how this was a feeling that was in the minds of people during get-togethers in the 2000s. Most Interviewees who heard or knew about such talks heard it in unofficial moments, such as walking through the halls of the convention or discussions in back rooms. However, that such thoughts were often not voiced during official meetings does not mean they are not powerful in the political arena. That the Executive Secretary must remind the Ozone Family to *"change the narrative if the momentum is to be kept alive"* (OS #21) and to shift the notion that *"the job is done"* (OS #21) in an official meeting shows how strong the feeling was. Also, that the observers who wrote the ENB reported noticed this narrative four times is also an indication that it was indeed discussed repeatedly.

It was expected that managing HFCs was driven by a need to survive, which is in turn a response to this feeling of the job being done. The results confirm that the Secretariat was indeed motivated to facilitate HFCs by a drive for survival. The results also confirm that this drive for survival was why the Secretariat was eager to jump on HFCs right when they were first discussed. The results

also cover that the feeling that the job was done is the direct causal link to this motivation, as is pointed out by all the interviews who confirmed the hypothesis. The results do not necessitate that this was the sole motivation for the Secretariat. Even more, one Interviewee pointed out that there was a whole different motivator: altruism.

Important to note is that this drive for survival does not necessitate that the Secretariat acted on pure self-interest, as a rational approach would argue. From the literature research, it appeared there were only two options for why the Secretariat took on this specific role: self-interest or altruism. However, the results suggest that there is something in between. Although the drive for survival can be seen as pure self-interest, the Secretariat was concerned not only about the survival of the bureaucracy, but of the entire continued relevance of the Protocol. This is further explored in section 4.2.

The most important contribution to answering the research problem are ultimately these results. The puzzle of why the Ozone Secretariat behaved as they did is completed and the picture is clear now. The results also enrich the existing knowledge on the Ozone Secretariat and the Kigali Amendment. This knowledge is still limited and focuses mainly on either the time before 2009 or on what the Kigali Amendment means for environmental governance, sustainable development goals, climate change and temperature targets (see for example Höglund-Isaksson et al., 2017 ; Polonara et al., 2017 ; Ripley, 2017 ; Mahfoodh et al., 2021 ; Purohit et al., 2022). If researchers and policymakers want to learn from existing examples in earth system governance, it is not only important to learn from failures but also from successes.

This case-study can serve as a starting point for insights into crucial factors, like the power of Secretariats, for a successful governance approach to global problems. Ultimately, this knowledge can contribute to solving such problems and paving the way to a better future for all. But, before that is possible, it is important to study these phenomena in more detail and across more diverse cases.

Moreover, very few elaborate studies on what motivates Secretariats exist in general, which is likely due to the scientific community only in the last decade accepting that they are autonomous actors with a will on their own (Jinnah, 2014a). This research can thus also contribute to raising attention for these types of studies and seeing what can be discovered more.

Lastly, this thesis is embedded in the PROBLEMSHIFTING project¹⁸ that sets out to discover why problem-shifts occur and what effects they have. As outlined in the introduction, this research regards the uptake of HFCs by the Montreal Protocol as a reversed problem-shift. By answering why the Secretariat was motivated to do so, this research contributes to the project. It gives insights in that a problem-shift (here: the development of HFCs) can cause the problem-shifting regime to take back the problem it created. The motivation is also interesting for the project, because it gives a possible solution to why institutions would reverse problem-shift. In short, the contribution is two-fold: it gives a theoretical suggestion to the concept of 'reversed problem-shifting', and it presents a possible motivation for an institution to reverse problem-shift.

Naturally, as the project is still in its first year, these observations need to be researched further before any claims can be made. Suggestions for future research are to see whether this case can serve as a precedent for reversed problem-shifting in global governance. It would also be

¹⁸ The PROBLEMSHIFTING project is directed by Assistant Professor Rakhyun Kim and hosted at the Copernicus Institute of Sustainable Development at Utrecht University (Grant agreement No. 949252): <https://problemshifting.org/>

interesting to take on reversed problem-shifting and conceptualize this phenomenon. Specific suggestions are researching what the drivers are, whether there are other cases and if/how it can benefit earth system governance.

4.1b) Limitations of the research

Limitations of the methods

Document analysis and interviews are both established research methods and have been used for decades (Bowen, 2009 ; Whiting, 2008). They are thus not the most original methods to use. Nevertheless, this is beneficial to the researcher, as it is clearly described in the literature how to use these methods in an academically sound manner. However, there are also some confirmed limitations to both.

The limitation a document analysis has that it cannot be used as a stand-alone method (Bowen, 2009) was overcome by combining the approach with interviews. Bowen (2009) also outlines 3 other disadvantages of using this method: insufficient detail, low retrievability and biased selectivity. Low retrievability, which refers to the access to documents, was not an issue as the Ozone Secretariat's website and the Earth Negotiations Bulletin website both had full open access to all official meeting documents from the timespan 2009-2016. Biased selectivity was neither an issue, as the documents reviewed were either factual minutes of the meetings (Ozone Secretariat) or the product of an independent observer (Earth Negotiations Bulletin). The only potential flaw left was then insufficient detail in the documents because they were not written for the purpose of conducting research. It turned out that indeed the document analysis alone could not provide answers to all the research questions but conducting interviews could.

The goal of the thesis was to interview at least 15 people. In the end, 12 people were interviewed. The responses of people that were approached came in waves, and from the respondents in the final wave three eventually stopped replying or canceled the interview after all. A sample of 12 is not very large, which poses a risk for missing important data. However, in this case, the sample is still regarded as appropriate and representable, as the sample contains all but one of the central figures in the HFC negotiations.

The bias that is inherent to these methods are acknowledged here. First, the coding and analysis is always prone to bias of the researcher. Second, the bias of the researcher and the Interviewees when asking and answering interview questions should also be considered. This bias is partly overcome by being transparent about the approach, coding scheme and interview questions.

In the end, the research approach used here is deemed appropriate, as the methods yielded the results needed to answer the questions.

Limitations of the results

There is a limit as to what the results say. The research is confident that the answer to the 'what' question provides an accurate overview of the roles of the Secretariat and how they could have influenced the negotiations. However, the role has only been researched within the timespan of 2009-2016, so the findings cannot be applied to cover the whole existence of the Secretariat. As Interviewee #11 indicated, the role can evolve over time, so these results should not be taken out of their chronological context.

For the conclusion that the Secretariat operated from behind a veil of legitimacy, it can be argued that the data presented as evidence is a bare minimum of what is needed to make these

conclusions. Especially for the subcode 'Downplaying ideas and recommendations', the data was limited. Besides the evidence that was found, there is also another item that strengthens this argument. The Secretariat can be regarded as a 'knowledge broker' with a good institutional memory (Birmpili, 2018 ; Interviewee #2, #5 & #6). Therefore, there might be less of a need for the Secretariat to reframe as much because their ideas are more easily accepted.

Also, it is important to remember that for the subcode 'No challenging of those ideas by Parties', that there is no evidence found of Parties that reject ideas does not mean that automatically there has been no rejection. However, because there is evidence found on how the Secretariat actively tries to avoid such rejection, this criterion was still accepted.

The answer to the 'why' question appears more straightforward. The conclusion for the motivation of the Secretariat is more certain, as enough confirmed the hypothesis, although it is always hard to quantify this. It is also important to keep in mind that the question does not ask for the sole reason the Secretariat behaved in the way they did. There are some indications that other motivations also played a role mentioned in the results, with the most obvious one the rejection of the hypothesis by Interviewee #9. In section 4.2 this is elaborated upon.

A more general limitation is that many of the results regard elements that are not as concrete or situations that have taken place behind closed doors. It is therefore always difficult for a researcher to pinpoint the exact situation. This might even be impossible, as each person who was present has their own worldview of the situation. As Interviewee #5 also remarked, to solve this problem the best thing you can do is talk to as many people as possible.

For the answer to the first subquestion, the method triangulation of having three sources of data (OS, ENB, interviews) confirmed the roles of the Secretariat. The document analysis came to the same list of roles, and the interviews confirmed the most referenced of those roles and added a few more roles that are less obvious to mention in the meeting reports (see Appendix F.1). For the answer to the second question, triangulation between documents and Interviewees proved more difficult at times, which is reflected in the results. In hindsight, this is not surprising as the document analysis mainly answered the first question, and the interviews the latter. However, the sample of Interviewees was quite diverse, with people from different backgrounds and positions within the Ozone Regime. In terms of data source triangulation, this diversity thus still gives the results credibility.

A last limitation is that the people working for the Climate Secretariat during the negotiations or those who were from the UNFCCC and were present during the HFC negotiations could not be included. Their perspective was deemed important too as the Climate Regime was the official entity in charge of HFCs. However, after several attempts to reach out no replies were received. The results did establish that there was some tension between the regimes and their Secretariats, as the Climate Regime felt maybe cheated out of a gas belonging to their basket. But simultaneously, the UNFCCC and Protocol regulate different things: emissions vs. production & consumption. This was also emphasized in a final collaboration between the two Secretariats, which is a common paper on legal issues.

Future research that is needed considering the limitations

To guide future research into either the political process surrounding the Kigali Amendment or into the, more general, motivations of Secretariats in global governance, a few guidelines are given. First, a larger sample of Interviewees is suggested, especially when studying the motives of a Secretariat that is larger than this one or one that has a broader mandate. As briefly mentioned above, the larger

the sample, the more likely you get a representative summary of all people's perspectives and worldviews.

Second, an analysis of documents other than official meeting reports and minutes could give more nuanced insights. News articles, Executive Secretary comments or website statements might contain less official information that could contain knowledge on what moves a Secretariat.

It would also be interesting to see more research on this link between the Ozone and Climate Secretariat, and how such collaboration should and would look like.

4.2 RIVAL FINDINGS

There are two findings from the results that are important to elaborate upon. The first item is both referred to as a role of the Secretariat and as a subcode for 'Mentions of Survival'. The second item elaborates on the notions presented earlier how there might be more motivations than the drive for survival.

4.2a) Issues of trust

In the theory, it is elaborated upon how the legitimacy of the Secretariat is enhanced or impacted. The general findings would suggest that the Secretariat successfully managed HFCs, as the Kigali Amendment eventually was agreed upon. Therefore, both the continuous survival of the Ozone Regime and Secretariat is established and the issue of HFCs is reversed problem-shifted. From the theory, both instances would lead to enhanced legitimacy of the Secretariat.

However, one important finding that came up from the results is that by pushing for HFCs, some Parties (mainly developing countries) lost trust in the Protocol, Secretariat and Ozone Family as a whole: *"Some felt misled by being pushed into HFCs in order to accelerate the HCFC phase-out, only to be told to shift away from HFCs just after they had invested heavily into converting to HFCs."* (ENB #27). Interviewee #7 also repeatedly emphasized during the interview how trust is a key factor to the success of the Protocol and the Kigali process, due to the close-knit culture within the Regime. And this trust should not be taken for granted.

Thus, the findings that indicate that this trust has not been always upheld during the HFC negotiations, it would lead to assume that from that perspective, the legitimacy of the Secretariat was also momentarily negatively impacted. There are also other examples of such a situation happening. Jinnah (2014a) outlines through a study by Jawara & Kwa (2003) how the proactive WTO Secretariat lost some Parties' trust when pushing for a certain issue.

What this finding means is that in terms of reversed problem-shifting and the survival of the institute, the Secretariat enhanced its legitimacy. But that does not necessitate that its total 'amount' of legitimacy is high. Factors that have not been researched in this study, like the one described here, could very well have other impacts on legitimacy. This is important to consider.

4.2b) Self-interest vs. altruism

The second item heads in a slightly different direction. As established before, it is not certain that the Secretariat was solely moved by a drive for survival, because this would then also mean that the Secretariat behaved purely out of self-interest. It is most likely that the drive for survival is one of more motivations, as was also sometimes remarked by the Interviewees. Interviewee #9 specifically says the Secretariat was only motivated by altruistic reasons. However, here it is argued that there are multiple motivations ranging from pure self-interest to pure altruism (see Figure 3).

The behavior of an organization like the Ozone Secretariat or the Protocol is not always 100 percent rational, as neither are human beings (Reinalda, 2013 ; Biermann & Siebenhüner, 2009). Whereas the rational approach would be to focus on maximizing power, Secretariats in practice are often more interested in using their autonomous influence to resolve problems that occur in their regimes (Biermann & Siebenhüner, 2009). Buchanan & Keohane (2006) outline how it is not only common that institutions act not only based on self-interest, but also advantageous. First, moral

reasons to act on a certain matter can help define the right policy approach that is fair and just for all affected by the approach. Second, acting on moral reasons besides self-interest makes an institution more stable, because moral commitments can uphold the support for an institution when changing circumstances alter the self-interest.

A sense of altruistic behavior appears to be not unfamiliar to the Ozone Regime, although it originates from an unexpected source. Before the Protocol could implement their control measures, the industry already started developing and implementing ozone-safe technology and their leadership has driven governments to act faster (Andersen, 2015). The efforts to make the Protocol's agreements entered into force is also described as altruism (Sandler, 2017). Another source of altruism is the staff. The staff's intrinsic motivations matter (Well et al., 2020), and as multiple Interviewees point out the staff of the Secretariat is extraordinarily motivated to protect the planet. As one pointed out, the staff is not doing it for any personal gain (Interviewee #9).

According to Birmpili (2018), the Ozone Secretariat has also applied their autonomous influence as knowledge broker to facilitate the negotiation process. She outlines how the Secretariat has taken on a role as an honest broker to help decision-makers to be informed of political problems, identify policy options for those problems and consequently agree on the right course of action for those problems. This example shows how the Ozone Secretariat also is motivated by altruistic reasons to solve political problems, rather than only being concerned with themselves.

Thus, to conclude, it appears that the motivation of the Secretariat was at least two-fold: one part of self-interest to protect the future of the Secretariat and the Protocol and one part of altruism to protect the future of the people and the planet. Moreover, a feeling of responsibility for causing HFCs in the first place was also mentioned by some Interviewees. To visualize the motivation, the items addressed above are placed on a scale depicted in Figure 3.

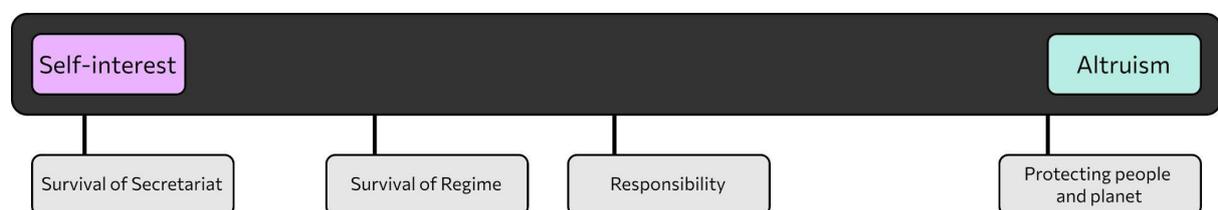


Figure 3. Visual interpretation of the results: from pure self-interest to pure altruism

4.3 POLICY AND SCIENCE RECOMMENDATIONS

This research recommends two items for both policy and science. The first recommendation is to use the blueprint of this case for successful policymaking for climate action. The second is to shop for topics that can be included in a treaty. For both recommendations, there is also additional research needed, which is why recommendations for the scientific community are included too.

4.3a) 'Blueprint for success'

The Montreal Protocol and its institutions are well-known for their success. The Kigali Amendment only adds to their legacy. So, it might be worthwhile for other regimes to look at the Protocol and take-on this blueprint for success.

A first item is to look how the Kigali Amendment can serve as an inspiration to make legally binding agreements for action on climate change. It is often thought that because the Protocol has been so successful, the issues they dealt with must have been easy to fix. It is true that climate protection will require more, but that does not mean that ozone protection was an easy task (Andersen, 2015). The same study (2015) also points out what made the Protocol a success: the start and strengthen approach, learning by doing, adapting to the special circumstances that vary per Party, flexibility, trust and safety valves. Moreover, the Multilateral Fund and its Secretariat, the Assessment Panels and the Ozone Secretariat are indicated by many Interviewees as key players for the success. Other institutions are thus recommended to see where their approach to decision-making can incorporate some of these crucial ingredients. Research could provide this blueprint for success by researching the different success and failure stories in global environmental governance.

Another item is a recommendation for the Protocol itself. The trust within the Regime is not self-evident. It is therefore recommended to the Protocol that they continue to be critical of their mechanisms of success and continue to work on those mechanisms.

4.3b) 'Shopping for topics'

Interviewee #5 and #6 outlined how the Protocol and Secretariat, by taking on HFCs, shopped for a topic that was not within the direct goal of the treaty, but did fit perfectly with the mechanisms in place within the treaty. It is recommended to other institutions that they do the same, as some treaties might have the perfect mechanism to take on problems outside its own Regime.

Again, this recommendation also holds for the Protocol itself. As indicated by Interviewee #6 and Andersen (2015), the Protocol would be well suited to take on issues like plastics or coal.

It is important to stress here that instead of feeling resentment that treaties take-on each other's problems, they should cheer each other on. This is also an important area of future research, what are the mechanisms to overcome resentment and a lack of trust between Regimes? Interviewee #6 discussed this too, mentioning how they think Universities have a crucial role to play. They could be the ultimate actor in bringing the treaties and the successful governance approaches together.

CONCLUSION

To summarize, this research started with a research problem: it was puzzling why the Ozone Secretariat decided to actively pursue HFCs under the Protocol. This was a puzzle, because secretariats are often not expected to have the autonomy to do so. Even if they did, it remained unclear what motivated the Secretariat.

The first piece of this puzzle was solved by establishing in the theory that Secretariats can have autonomy, and the results proving that the role of the Secretariat was indeed autonomous and influential for the HFC negotiation process. The second piece of the puzzle was solved after the results from the document analysis and interviews concluded that the Secretariat was motivated due to a need to survive. This drive emerged after rumors surfaced within the Ozone Regime that the job of the Protocol might be over after CFCs and HCFCs were phased out.

Besides these findings, which were expected as they answer the subquestions, some additional findings came from the data analysis. There is an overview of the contextual background for how HFCs came onto the Treaty's agenda and what drove the acceptance of the Kigali Amendment. There is also data on how the Secretariat approached the negotiations: eagerly and from behind a veil of legitimacy.

There are important implications of the results. The most important one is that there was likely more than one motivation of the Secretariat to take on HFCs. It is likely that the Secretariat was not only motivated purely for their own survival, but also for the survival of the Regime. Moreover, a sense of responsibility for developing HFCs in the first place and an altruistic motivation to protect the people and the planet emerged as additional motivations.

Thus, the answer to the research question why the Secretariat facilitated the Kigali Amendment is that they were motivated in part because of their drive to survive. What became clear from the research is that, regardless of what motivated the Secretariat, they have made great and impressive efforts to take on some of the world's problems, and that they serve as an outstanding example of how to successfully collaborate on a global level.

By amending the Kigali Amendment, the Secretariat not only became a facilitator for the future of the institution and Protocol, but also for the future of the people and this planet. How long the Secretariat and the Protocol will survive in the future is not certain yet, as eventually the phase-down of HFCs will be reached. One thing that is apparent from the research is that the passion, drive and institutional memory of the Secretariat will be crucial elements to determine their future direction.

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APPENDIX

APPENDIX A - SOURCES FOR THE DOCUMENT ANALYSIS

A.1 Earth Negotiations Bulletin

All documents were retrieved from: <https://enb.iisd.org/negotiations/vienna-convention-and-montreal-protocol-substances-deplete-ozone-layer>

#	Meeting date	Report title
1	29-11-1999	Vienna Convention COP 5 and Montreal Protocol MOP 11
2	11-07-2000	20th Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol
3	16-10-2001	Montreal Protocol MOP 13
4	23-07-2002	22nd Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol
5	25-11-2002	Vienna Convention COP 6 and Montreal Protocol MOP 14
6	24-03-2004	1st Extraordinary Meeting of the Parties to the Montreal Protocol (ExMOP-1)
7	07-07-2005	25th Meeting of the Open-ended Working Group of the Parties and 2nd Extraordinary Meeting of the Parties to the Montreal Protocol (ExMOP-2)
8	12-12-2005	Vienna Convention COP 7 and Montreal Protocol MOP 17
9	03-07-2006	26th Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol
10	03-11-2006	Montreal Protocol MOP 18
11	17-09-2007	Montreal Protocol MOP 19
12	16-11-2008	Viena Convention COP 8 and Montreal Protocol MOP 20 Convention
13	15/07/2009 - 18/07/2009	29th Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol
14	04/11/2009 - 08/11/2009	Montreal Protocol MOP 21

15	08/11/2010 - 12/11/2010	Montreal Protocol MOP 22
		31st Meeting of the Open-Ended Working Group
16	01/08/2011 - 05/08/2011	of the Parties to the Montreal Protocol
		Vienna Convention COP 9 and Montreal Protocol
17	21/11/2011 - 25/11/2011	MOP 23
		32nd Meeting of the Open-Ended Working Group
18	23/07/2012 - 27/07/2012	of the Parties to the Montreal Protocol
19	12/11/2012 - 16/11/2012	Montreal Protocol MOP 24
		33rd Meeting of the Open-Ended Working Group
20	24/06/2013 - 28/06/2013	of the Parties to the Montreal Protocol
21	21/10/2013 - 25/10/2013	Montreal Protocol MOP 25
		34th Meeting of the Open-Ended Working Group
22	14/07/2014 - 18/07/2014	of the Parties to the Montreal Protocol
		Vienna Convention COP 10 and Montreal Protocol
23	17/11/2014 - 21/11/2014	MOP 26
		Workshop on Hydrofluorocarbon Management
		and 35th Meeting of the Open-ended Working
24	20/04/2015 - 24/04/2015	Group of the Parties to the Montreal Protocol
		36th Meeting of the Open-Ended Working Group
25	20/07/2015 - 24/07/2015	of the Parties to the Montreal Protocol
		Resumed 36th Meeting of the Open-ended
		Working Group of the Parties to the Montreal
26	29/10/2015 - 30/10/2015	Protocol
27	01/11/2015 - 05/11/2015	Montreal Protocol MOP 27
		37th Meeting of the Open-Ended Working Group
28	04/04/2016 - 08/04/2016	of the Parties to the Montreal Protocol
		3rd Extraordinary Meeting of the Parties to the
		Montreal Protocol (ExMOP 3) and Associated
29	15/07/2016 - 23/07/2016	Meetings
30	10/10/2016 - 14/10/2016	Montreal Protocol MOP 28

A.2 Ozone Secretariat meeting reports

All documents were retrieved from: <https://ozone.unep.org/meetings>

#	Meeting date	Report title
1	13-07-2009	Workshop on ODS banks
2	14-07-2009	Workshop on high-GWP alternatives
3	15-07-2009	29th OEWG
4	02-11-2009	20th MOP bureau (MP)
5	03-11-2009	Workshop on methyl bromide for QPS
6	04-11-2009	21st MOP
7	14-06-2010	Seminar on management of ODS banks
8	15-06-2010	30th OEWG
9	05-11-2010	21st MOP bureau (MP)
10	08-11-2010	22nd MOP
11	02-05-2011	8th ORM
12	01-08-2011	31st OEWG
13	19-11-2011	8th COP - 22nd MOP Bureau
14	21-11-2011	9th COP - 23rd MOP.
15	23-07-2012	32nd OEWG
16	10-11-2012	23rd MOP Bureau (MP)
17	12-11-2012	24th MOP
18	24-06-2013	33rd OEWG
19	20-10-2013	24th MOP Bureau (MP)
20	21-10-2013	25th MOP
21	14-05-2014	9th ORM
22	15-05-2014	9th COP Bureau (VC)
23	11-07-2014	Workshop on HFCs
24	14-07-2014	34th OEWG
25	16-11-2014	9th COP - 25th MOP Bureau
26	17-11-2014	10th COP - 26th MOP (decisions)

27	17-11-2014	10th COP - 26th MOP
28	20-04-2015	Workshop on HFCs
29	22-04-2015	35th OEWG
30	20-07-2015	36th OEWG
31	29-10-2015	36th OEWG resumed
32	31-10-2015	26th MOP Bureau (MP)
33	01-11-2015	27th MOP (decisions)
34	01-11-2015	27th MOP
35	04-04-2016	37th OEWG
36	15-07-2016	37th OEWG resumed
37	18-07-2016	38th OEWG
38	22-07-2016	3rd ExMOP
39	08-10-2016	38th OEWG resumed
40	09-10-2016	27th MOP Bureau (MP)
41	10-10-2016	28th MOP decisions
42	10-10-2016	28th MOP

APPENDIX B - CODING SCHEMES

B.1 Predetermined codes based on the literature

1st subquestion
Secretariat functions
Mentions of Criteria Veil Of Legitimacy
2nd subquestion
Mentions of The Job Is Done
Secretariat's voice
Mentions of Survival

B.2 Codes retrieved from the data analysis

1st subquestion	
<i>General codes from literature</i>	<i>Specific codes from data</i>
Secretariat functions	Planning and organizing meetings or workshops
	Drafting, preparing, or reporting of information
	Involving in financial matters
	Monitoring consumption and production levels of ODSs
	Paying tribute to key figures and Parties
	Taking notes during meetings
	Introducing the agenda
	Reaching out to or collaborating with other institutions
	Contacting and assisting the Parties to the MP
	Providing advice during the meetings

	Publishing or updating website information
	Supporting other OR (Ozone Regime) institutions
2nd subquestion	
<i>Code from literature</i>	<i>Code from data</i>
Secretariat's voice	Recommendations and advice
	Compliments
	Statements regarding ratification
	Support for the HFC Amendment
Mentions of Survival	Continuing the relevance of the MP
	Expanding to a climate treaty
	Preserving and building on the legacy
	Facing new challenges
	Rebuilding trust

APPENDIX C - KEY INTERVIEW QUESTIONS

1. Could you tell me more about what you do in your professional career?
2. Could you elaborate on your relationship with the Ozone Regime?
3. Could you describe your experience regarding the drafting of the Kigali Amendment?
 - a. What was, in your opinion, the main driver for the drafting of the Kigali Amendment, and who/what initiated the drafting?
4. How do you perceive the role of the Ozone Secretariat within the Ozone Regime and specifically during the Kigali Amendment negotiations?
5. What is your take on the underlying motivation of the Ozone Secretariat to facilitate the negotiations of the Kigali Amendment?
 - a. Do you know why the Secretariat was eager to take up HFCs?
 - b. Do you know whether the future existence was of any concern of the Ozone Secretariat or within the Ozone Regime at the start of the Kigali drafting process?

APPENDIX D - INFORMED CONSENT FORM



Utrecht University

INFORMED CONSENT FORM for participation in:

MSc thesis interview with Jannah Wijermars regarding the Ozone Secretariat and the Kigali Amendment

To be completed by the participant:

I confirm that:

- I am satisfied with the received information about the research;
- I have been given opportunity to ask questions about the research and that any questions that have been risen have been answered satisfactorily;
- I had the opportunity to think carefully about participating in the study;
- I will give an honest answer to the questions asked.

I agree that:

- the data to be collected will be obtained and stored for scientific purposes;
- the collected, completely anonymous, research data can be shared and re-used by scientists to answer other research questions;
- video and/or audio recordings may also be used for scientific purposes.

I understand that:

- I have the right to withdraw my consent to use the data;
- I have the right to see the research report afterwards.

Name of participant: _____

Signature: _____ Date, place: ___ / ___ / ___, _____

To be completed by the investigator:

I declare that I have explained the above mentioned participant what participation means and the reasons for data collection. I guarantee the privacy of the data.

Name:

Date:

Signature:

APPENDIX E - OZONE SECRETARIAT'S MANDATE

Montreal Protocol: Article 12 ¹⁹	Vienna Convention: Article 7 ²⁰
<p>For the purposes of this Protocol, the Secretariat shall:</p> <p>(a) arrange for and service meetings of the Parties as provided for in Article 11;</p> <p>(b) receive and make available, upon request by a Party, data provided pursuant to Article 7;</p> <p>(c) prepare and distribute regularly to the Parties reports based on information received pursuant to Articles 7 and 9;</p> <p>(d) notify the Parties of any request for technical assistance received pursuant to Article 10 so as to facilitate the provision of such assistance;</p> <p>(e) encourage non-Parties to attend the meetings of the Parties as observers and to act in accordance with the provisions of this Protocol;</p> <p>(f) provide, as appropriate, the information and requests referred to in subparagraphs (c) and (d) to such non-party observers; and</p> <p>(g) perform such other functions for the achievement of the purposes of this Protocol as may be assigned to it by the Parties.</p>	<p>1. The functions of the secretariat shall be:</p> <p>(a) To arrange for and service meetings provided for in articles 6, 8, 9 and 10;</p> <p>(b) To prepare and transmit reports based upon information received in accordance with articles 4 and 5, as well as upon information derived from meetings of subsidiary bodies established under article 6;</p> <p>(c) To perform the functions assigned to it by any protocol;</p> <p>(d) To prepare reports on its activities carried out in implementation of its functions under this Convention and present them to the Conference of the Parties;</p> <p>(e) To ensure the necessary coordination with other relevant international bodies, and in particular to enter into such administrative and contractual arrangements as may be required for the effective discharge of its functions;</p> <p>(f) To perform such other functions as may be determined by the Conference of the Parties.</p> <p>2. The secretariat functions will be carried out on an interim basis by the United Nations Environment Programme until the completion of the first ordinary meeting of the Conference of the Parties held pursuant to article 6. At its first ordinary meeting, the Conference of the Parties shall designate the secretariat from amongst those existing competent international organizations which have signified their willingness to carry out the secretariat functions under this Convention.</p>

¹⁹ UNEP (n.d.-d). *The Montreal Protocol on substances that deplete the ozone layer*.
<https://ozone.unep.org/treaties/montreal-protocol-substances-deplete-ozone-layer/text>

²⁰ UNEP (n.d.-e). *The Vienna Convention for the protection of the ozone layer*.
<https://ozone.unep.org/treaties/vienna-convention>

APPENDIX F - NUMBER OF REFERENCES AND FILES PER CODE AND SUBCODE

F.1 Code 'Secretariat functions'

	OS documents		ENB documents		Interviews	
	References	Files	References	Files	References	Files
Secretariat functions	x	x	x	x	x	x
Planning and organizing meetings or workshops	9	8	15	10	14	6
Drafting, preparing, or reporting of information	28	17	60	24	14	5
Involving in financial matters	2	2	19	10	1	1
Monitoring consumption and production levels of ODSs	2	2	4	3	3	2
Paying tribute to key figures and Parties	3	2	3	3	0	0
Taking notes during meetings	0	0	1	1	0	0
Introducing the agenda	9	4	4	4	0	0
Reaching out to or collaborating with other institutions	14	12	22	12	7	5
Contacting and assisting the Parties to the MP	10	7	7	5	9	6
Providing advice during the meetings	15	9	10	8	3	3
Publishing or updating website information	3	3	5	5	3	3
Supporting other OR institutions	3	3	2	2	8	6
Approaching outside experts	0	0	0	0	3	3
Channeling questions from Parties to the Assessment Panels	0	0	0	0	2	2
Organizing the writing of reports by experts	0	0	0	0	2	1
Rebuilding trust	0	0	0	0	1	1
Setting the agenda	0	0	0	0	4	2
Smoothing out and balancing contrasting demands of Parties or issues	0	0	0	0	12	6
Teaching new actors to the Protocol's ways	0	0	0	0	1	1

F.2 Code 'Mentions of Criteria Veil Of Legitimacy'

	OS documents		ENB documents		Interviews	
	References	Files	References	Files	References	Files
Mentions of Criteria Veil Of Legitimacy	x	x	x	x	x	x
Working behind the scenes	5	5	3	3	7	4
Downplaying ideas and recommendations	0	0	0	0	3	3
No challenging of those ideas by Parties	0	0	1	1	4	2

F.3 Code 'Secretariat's voice'

	OS documents		ENB documents		Interviews	
	References	Files	References	Files	References	Files
Secretariat's voice	x	x	x	x	x	x
Compliments	16	12	20	16	x	x
Recommendations and advice	34	20	45	25	x	x
Statements regarding ratification	12	10	8	5	x	x
Support for the HFC Amendment	11	8	17	12	x	x

F.4 Code 'Mentions of The Job Is Done'

	OS documents		ENB documents		Interviews	
	References	Files	References	Files	References	Files
Mentions of The Job Is Done	2	2	7	7	6	5

F.5 Code 'Mentions of Survival'

	OS documents		ENB documents		Interviews	
	References	Files	References	Files	References	Files
Mentions of Survival	x	x	x	x	x	x
Continuing the relevance of the MP	9	5	16	12	7	6
Expanding to a climate treaty	6	6	13	9	15	9

Facing new challenges	6	5	10	7	2	2
Preserving the legacy	13	9	9	9	8	5
Rebuilding trust	4	4	4	3	1	1