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**Putting Multilateral Environmental Agreements into Action: An Assessment of the  
Political Feasibility of an Energy Protocol to the Carpathian Convention**

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**ABSTRACT OF THESIS** submitted by:

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Environmental issues often cross borders and call for cooperation between nations. The current environmental governance system facilitating such cooperation is underpinned by multilateral environmental agreements (MEAs); the vast majority of which are regional, not global, in nature. Debate continues as to whether such a system makes governance more fragmented or more focused and effective, with researchers calling for more consideration of regional agreements. This study contributes to further understanding the capacity and limitations of regional MEAs through a case study on the political feasibility of enhancing the implementation of the Framework Convention on the Protection and Sustainable Use of the Carpathians. In particular, it examines the treatment of the subject of sustainable energy, which is addressed in the text of the Convention but has largely not been addressed in Convention activities to date. Given that the primary recognized method of implementing framework conventions is the development of protocols with substantive requirements, the feasibility of, and potential value in, developing an Energy Protocol to the Carpathian Convention serves as the guiding line of inquiry for this research. Data was collected from historical convention documents and semi-structured interviews and assessed to identify drivers and barriers to the development of a protocol. While it is determined that developing a protocol is likely feasible, such a policy path should be supported by other measures in order to meaningfully enhance implementation of the Convention's mandate. Implications of findings are reflected upon with respect to the role of regional MEAs and practitioners are provided with recommendations.

**Keywords:** Carpathian, energy, environment, governance, mountains, multilateral environmental agreements, policy, political feasibility, regional, regionalism, renewable energy, sustainable energy

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## List of Abbreviations

CBD: Convention on Biological Diversity

CMR: Carpathian Mountain Region

CCIC: Carpathian Convention Implementation Committee

CEE: Central and Eastern Europe

COP: Conference of the Parties

DRPC: Danube River Protection Convention

EU: European Union

EURAC: European Academy of Bozen-Bolzano

EUSDR: Macro-regional Strategy for the Danube Region

ICPDR: The International Commission for the Protection of the Danube River

IEA: International Energy Agency

GHG: Greenhouse Gases

MEA: Multilateral Environmental Agreement

MoC: Memorandum of Cooperation

MoU: Memorandum of Understanding

NGO: Non-Governmental Organization

S4C: Science for the Carpathians

SCC: Secretariat of the Carpathian Convention

UN: United Nations

UNDP: United Nations Development Programme

UNEP: United Nations Environment Programme

UNESCO: United Nations Educational, Scientific and Cultural Organization

UNIDO: United Nations Industrial Development Organization

WG: Working Group

WWF: World Wildlife Fund

# Chapter 1: Introduction

## Problem Statement

The planet's most pressing environmental issues are diverse in their underlying causes, resulting impacts, and required responses by all levels of government. They do, however, often share one feature: they cross national borders. Greenhouse-gas (GHG) emissions from the burning of fossil fuels and other human activities are accelerating climate change on a global scale (Houghton *et al.* 1991). At the same time, biodiversity loss resulting from deforestation and other stressors affects habitats and species whose ranges stretch across multiple countries (Atkinson 2014; Perrings and Halkos 2012). In order for interventions aimed at addressing such challenges to be successful, a coordinated response from nations is necessary (Karkkainen 2004; Badenoch 2002).

As recognition of the need for cooperation in addressing shared environmental issues has grown, so too has the number of institutional mechanisms intended to solve such issues. Multilateral environmental agreements (MEAs), which are treaties set up between three or more countries with the purpose of reaching an environmental goal, arguably represent the most important type of mechanism (Delreux 2018; Steiner *et al.* 2003). MEAs have been the backbone of the environmental governance system for decades (Sanwal 2007). The framework convention/protocol approach is the primary method of lawmaking in international environmental law—the advantage being that consensus is more easily achieved by parties since they first agree on general basic principles, while leaving open the possibility for further negotiation of detailed and targeted subsequent agreements called protocols (Bodansky 1999). The importance of MEAs and their protocols is often highlighted by landmark global agreements such as the Montreal Protocol (which addressed ozone pollution in 1989) and the Paris Agreement (which addressed greenhouse-gas-mitigation measures in 2015) (DeSombre 2000; Velders *et al.* 2007).

However, while global agreements are undeniably critical, the vast majority on MEAs are regional, not global, in nature. It is estimated that nearly two thirds of MEAs are regional, in that they have a limited number of signatories and have a specific geographic focus (Balsiger and Prys 2016). Despite the prevalence of regional and sub-regional MEAs, they are understudied in both the areas of environmental policy and international relations (Balsiger and Prys 2016; Balsiger *et al.* 2012; Balsiger and VanDeveer 2012). Many of the studies that do exist highlight fragmentation of the overall system and inconsistent implementation of

agreements (Liu and Middleton 2017). There is therefore a need to increase understanding of the impact of regional MEAs and identify conditions which lead to their successful implementation in order to have a clearer picture of the global environmental governance system. Researchers have called for more detailed consideration of specific agreements in order to generate insights into this theory-deficient subject area (Balsiger and Prys 2016).

This thesis seeks to contribute to the body of theory on regional MEAs through consideration of the Framework Convention on the Protection and Sustainable Development of the Carpathians, hereafter referred to as the Carpathian Convention.

Signed in 2003 and brought into force in 2006, the Carpathian Convention is a sub-regional treaty to foster the sustainable development and the protection of the Carpathian Mountain Region (CMR) in Central and Eastern Europe. It is a MEA that provides a framework for cooperation and multi-sectoral policy coordination. It also serves as a forum for dialogue between all stakeholders involved, ranging from non-governmental organizations (NGOs) and local communities to regional and national Governments, Institutions of the European Union, and the United Nations (Makino *et al.* 2019). As a framework agreement, it is an umbrella document which establishes broad commitments for parties in topics ranging from biodiversity to transport to energy. The establishment of specific targets is achieved through protocols or left to national legislation.

To date there is not a considerable amount of existing literature on the Carpathian Convention, signifying that there is a knowledge gap to be filled on the effectiveness of this tool in achieving its aims. As a relatively young agreement, many topics addressed in the text of the Convention do not yet have protocols and may not be therefore implemented in reality. The intent of this research is to explore the process of developing a new protocol and how to meaningfully implement the mandate of a regional MEA. The topic area of sustainable energy is chosen due to its limited treatment within the convention to date as well as its importance in the region as detailed in the following section.

## **Background: the Carpathian Mountain Region**

The CMR forms an arc between Central and Eastern Europe, stretching across the following countries: Czech Republic, Hungary, Poland, Romania, Serbia, Slovak Republic, and Ukraine (see fig. 1). With the exception of Serbia and Ukraine, all other countries are members of the European Union (EU). All seven countries are party to the Carpathian Convention, meaning that they have given explicit consent to be bound by the treaty.

The Carpathian region itself has been assessed from many different disciplinary perspectives. This section provides a high-level overview of identified social, economic, and environmental trends in the region from academic literature and data from the international energy agency (IEA).

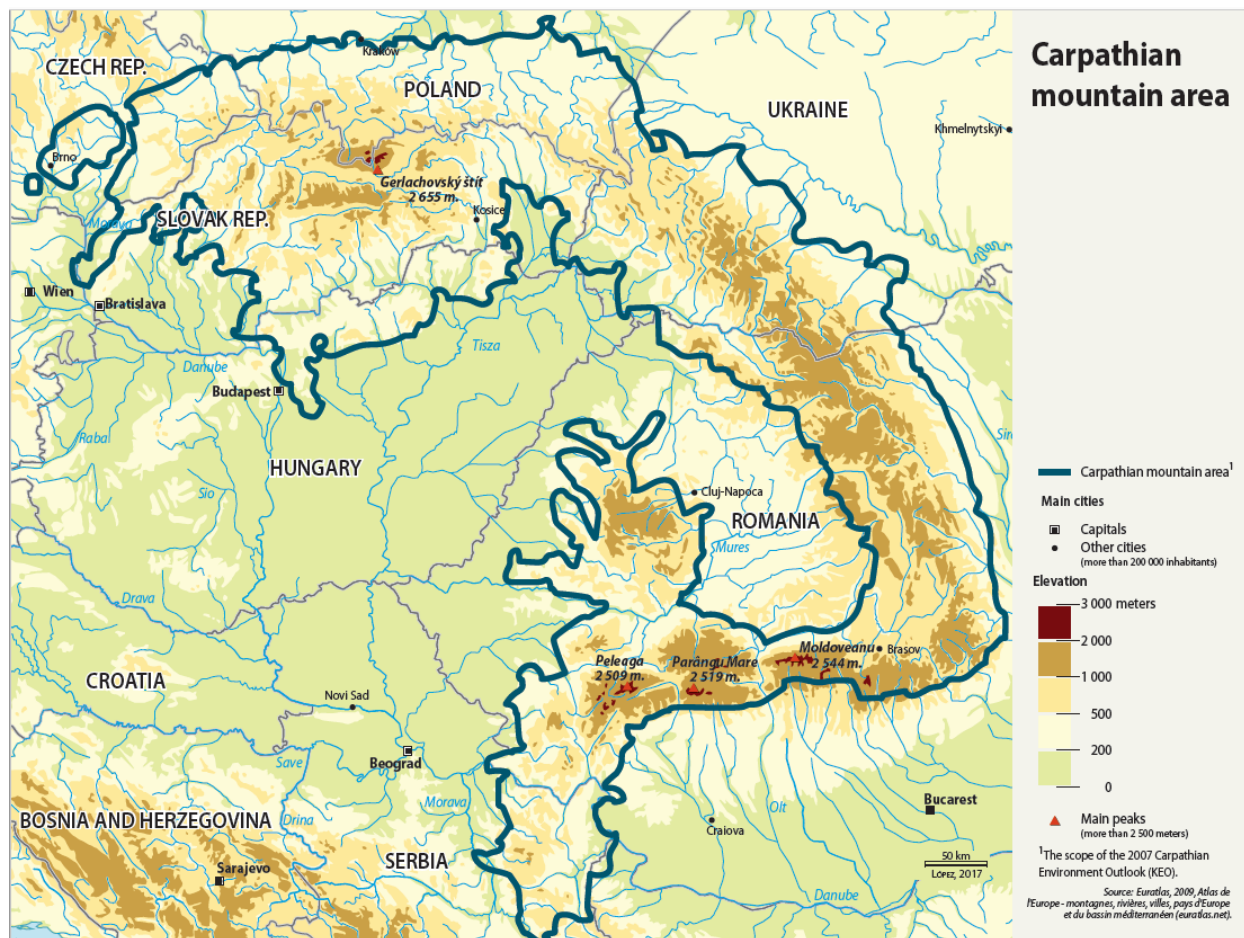


Fig. 1 Map of Carpathian Mountain Region.  
(Source: López Isquierdo 2017)

## Physical Characteristics

The Carpathians are located in the southeastern part of Central Europe and are one of Europe's largest mountain ranges. There is no unanimous consent regarding the geographic extent and margins of the CMR. By one estimate the mountains cover about 210,000 square kilometres, roughly the same area of the Alps. Spreading widely northwards and southwards, the mountains extend in an arc for ca. 1,450 kilometres from Bratislava in the Slovak Republic to the Iron Gate in the valley where the Danube breaks through in southern Romania (Ruffini *et al.* 2006).

The CMR has a temperate climate (Cheval *et al.* 2014). As a mountain region, the Carpathians are sensitive to climate change and are being affected at a faster rate than other terrestrial

habitats. Climate impacts present threats to mountain ecosystem services and can have considerable effects on water resources (Palomo 2017)

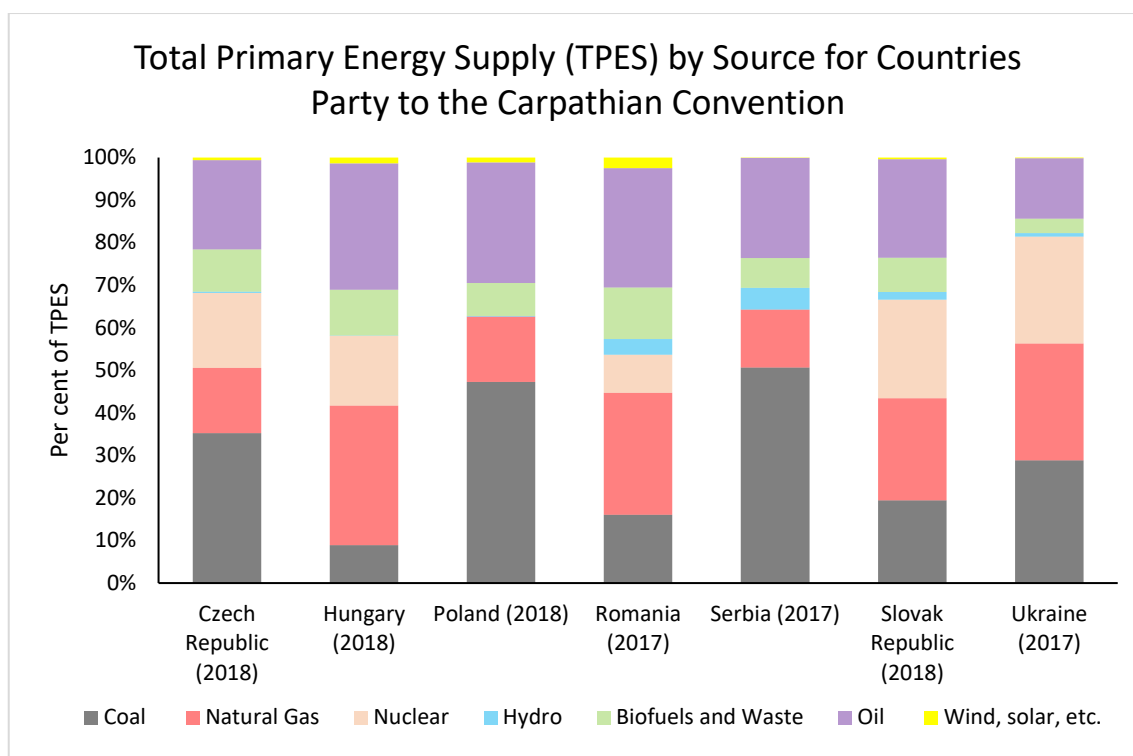
Approximately 60 per cent of the Carpathian Mountains are covered by forest, many of which are defined as virgin or semi-virgin forests (Egerer *et al.* 2016). The mountains also host high levels of biodiversity and important populations of large carnivores, including the brown bear, the grey wolf, and the Eurasian lynx (Rozyłowicz *et al.* 2011). In addition, European bison and rare bird species including the globally threatened Imperial Eagle are present in the region (Ruffini *et al.* 2006; Kuemmerle *et al.* 2010). The Carpathian Mountains are home to approximately one third of Europe's endemic plants (Oszlányi *et al.* 2004). The region also hosts many tributaries, many of which contribute to important rivers such as the Danube (Stagl and Hattermann 2015). Overall, the CMR and its natural resources are considered of high significance for biodiversity and for providing a wide range of ecosystem services, including climate regulation and water management.

### **Socio-economic Characteristics**

Communities in the CMR are primarily rural, remote, and peripheral. The main economic activities are resource-based and include farming, forestry, and mining (Pomázi and Szabó 2010). While the situation varies between regions and countries, the economy in the CMR is generally less developed than in neighbouring lowlands (Egerer *et al.* 2016). The Carpathian region is an area of borders which can represent an additional hindrance to economic cooperation and integration. The Carpathians face a number of pressures including climate change, illegal harvesting of resources, rapid emigration, and diminishing traditional agricultural practices to name a few (Munteanu *et al.* 2014; Schlingemann *et al.* 2017). Due to the rural nature of communities in the Carpathians, citizens often face less access to heating and electricity and unreliable infrastructure services (Hopkowicz and Rybicki 2014).

### **Background: Energy Landscape**

While each of the seven countries which are parties to the Carpathian Convention have unique energy landscapes, there are some identifiable regional trends. The share of primary energy supply in the Carpathian countries is dominated by fossil fuels (coal, oil, and natural gas), followed by nuclear (except in Poland and Serbia), biofuels and waste, then hydropower and finally other forms of renewable energy sources including wind and solar (see fig. 2 and appendix A). While some Carpathian countries hold important fossil fuel reserves, total proven oil and natural gas reserves are limited (Górka *et al.* 2007).



*Fig. 2 Total Primary Energy Supply (TPES) by Source in countries which are party to the Carpathian Convention.*  
(Data Source: International Energy Agency 2020)

The Carpathian countries are still highly dependant on imported oil and natural gas arriving mainly from Russia (Ostrowski and Butler 2018). The Carpathian region is deemed geo-strategically important in that oil and natural gas pipelines cross through many of these countries en route to Western Europe. Central and Eastern European countries have been viewed as laggards in adopting renewable energy (Ćetković and Buzogány 2019).

Researchers focusing on the connection between energy consumption, environmental pollution, and economic growth in Central and Eastern European (CEE) countries have called for more cooperation and joint enforcement of energy and macroeconomic policies, stating that “energy policies intended to increase the production and use of renewable energy will lower the current energy dependence of CEE countries on energy-supplying states. Not least, implementing renewable energy resources in the analyzed region may contribute to the reduction of greenhouse gases emissions” (Armeanu *et al.* 2019). The European Commission has also called for the implementation of regional energy policy cooperation initiatives in order to achieve its energy and climate goals (Maltby 2013). More broadly, research on energy policy mixes advocates for a mix of strategies and instruments at different levels of governance along with coordination across several policy fields (Rogge *et al.* 2017).

Rogge and colleagues (2017) highlight the challenges of ensuring horizontal and vertical policy coherence due to the dispersed institutional responsibilities for resource efficiency. There has been increasing attention paid to the importance of geography in energy transition studies and to regional policy strategies/instruments directed towards a specific geographical region (Calvert 2016).

The Carpathian Mountains have fairly high physical potential for development of energy types deemed renewable by the IEA including bioenergy, wind, solar, and other sources (UNIDO 2010; IEA 2020). Despite the physical potential of renewable sources, the development of renewable energy projects is still limited in the Carpathian countries. This has been attributed to non-unified and non-transparent supporting mechanisms across the countries (UNIDO 2010). It is important to note that the development of renewable energy sources can have potential trade-offs and negative environmental impacts. Furthermore, sustainable energy is an extremely broad subject area, a full consideration of which is beyond the scope of this research. As such, the sources of renewable energy with the most potential for development in the CMR are briefly addressed in order to provide contextual background for this study.

**Bioenergy** is renewable energy made from materials derived from biological sources, known as biomass. Biomass may include wood, wood waste, crop residues and many other by-products from agricultural processes. According to the IEA (2020), “Robust sustainability frameworks are key to bioenergy growth. Only bioenergy that reduces lifecycle GHG emissions while avoiding unacceptable social, environmental and economic impacts can contribute to energy system decarbonisation. Robust sustainability governance and enforcement must therefore be a central pillar of any bioenergy support policy.” Previous studies have indicated that biomass appears to have the greatest potential for both heat and electricity production in the CMR (Pajtić *et al.* 2018; UNIDO 2010). While bioenergy can be produced from a range of sources including residues and waste from crops, wood is a much denser source of energy. Concern has been expressed that if the EU’s renewable energy targets are to be met then up to 16 million hectares of energy crops will be required, which could pose a threat to the ancient forests of the Carpathian Mountains (Jefferson 2018). Jefferson (2018) cites examples of ancient woodlands being felled throughout Europe supposedly protected by law.

**Hydro-electric power** has experienced a fairly high level of development in the CMR dating back several decades (Dragomirescu 1993). As host to a number of tributaries, the CMR has hydropower capacity which has yet to be developed. However, there has been controversy over

micro-hydropower in the CMR, particularly in Romania and Ukraine, due to the risks dams present to aquatic biodiversity levels and other potentially negative environmental impacts (Năstase *et al.* 2017).

At present, there has been limited development of **wind** energy in the CMR. There are some wind farms in the Ukrainian portion of the Carpathian Mountains, however frequent storms in the region can limit the capacity of wind plants (Lyutskanov *et al.* 2013). There has been growing interest in wind energy and assessing potential trade-offs of its development in the Carpathian Mountains, particularly in Romania (Fang *et al.* 2018). Fang and colleagues (2018) developed a model to predict wind energy potential in complex mountain terrain by using Romania as an example. The model has the potential to quantitatively identify the trade-offs between renewable energy production and biodiversity under different land use scenarios.

Assessments have been undertaken on the potential for the development of **solar** in the CMR, particularly in Ukraine (Mandryk *et al.* 2020). While solar radiation depends on altitude, slope orientation and other factors, according to one assessment solar radiation in the Carpathian region will exceed 1,000 kWh per 1 m<sup>2</sup> of a year (Arkhipova *et al.* 2015). A number of studies have also indicated the potential for solar energy to contribute to further development of sustainable tourism in the Carpathian Mountains in Romania (Mandryk *et al.* 2016; Pobigun and Iuras 2019).

Several Carpathian countries have the potential for **geothermal** development. Ukraine has some potential in the Carpathian Mountains (Blinnikov 2011). Studies have also been conducted in Poland on the possibility of reconfiguring abandoned boreholes for fossil fuel exploration/development in the Carpathians into sources of geothermal energy (Sliwa *et al.* 2014; Hajto 2015). However, the greatest potential for development of geothermal energy in the Carpathian countries lies in the Pannonian Basin, which is a lowland region surrounded by the Carpathians on the East, the Alps on the West, and the Dinarides to the South.

## Summary

- The Carpathian region as whole is highly reliant on imported fossil fuels for its primary energy production.
- There is growing political will among several Carpathian countries to move towards energy independency.
- There have been calls for regional energy policy cooperation initiatives in the EU.



- Energy policy research calls for a mix of activities at different levels of governance.
- There is physical potential for further development of energy sources which are considered renewable. Further mapping is required for quantitative figures.
- Development of renewable energy projects is still limited in the Carpathian region.
- Development of micro-hydropower has been a point of controversy in recent years.
- Biomass has the highest potential in the Carpathian mountain region. There is debate surrounding whether biomass should truly be considered a renewable source of energy.

## **Aims and Objectives**

With regional energy challenges and opportunities in mind, the aim of this thesis is to determine the capacity of the Carpathian Convention to enhance the implementation of its mandate in the area of sustainable energy. This will be accomplished through the identification of political drivers of, and barriers to, the development of an Energy Protocol to the Carpathian Convention. More broadly, this thesis also aims to contribute to an enhanced understanding of regional governance mechanisms— what they are, what they could be, and what they can realistically accomplish. With these aims in mind, research is centred around two main research questions:

### **1. What is the political feasibility of developing an Energy Protocol within the Carpathian Convention?**

This question will be addressed by determining what stakeholders would expect and desire to see in an Energy Protocol along with their perception of its added value and likelihood of development. It will be assessed through identification of drivers and barriers to the process of developing, negotiating, and implementing a new protocol through the use of a political feasibility conceptual framework.

### **2. How, if at all, would the development of a new protocol meaningfully impact the implementation of the Carpathian Convention?**

This question will be addressed through reflection on what impact an Energy Protocol could have, what steps can be taken to overcoming barriers to its development, and whether this is the best path forward. It will also involve reflection on what factors can be identified for the successful implementation of regional MEAs. Finally, the current role of this regional MEA will be considered with a view towards understanding what role such governance mechanisms should serve going forward.

## **Audience**

Given the scope of this research, one of the main target audiences is decision- and policy-makers working for the governments of the Carpathian countries. Governmental authorities at all levels within the region, the Secretariat of the Carpathian Convention (SCC), and other practitioners involved with the convention are also envisioned to be key audiences. International organizations such as the United Nations Environment Programme (UNEP) and other MEAs constitute other key target audiences. NGOs in the region may also benefit from this research. In addition, academia constitutes an audience as this research pertains to those focused on broad trends in environmental governance, as well as scientists focused on the Carpathian region. Finally, members of the public with an interest in environmental trends, policies, and solutions which could potentially affect them represent an audience.

## **Outline**

In order to achieve the research objectives, this thesis is organized in the following manner:

Chapter 1 (introduction) has presented the nature of the research problem and the specific problem elements which are to be addressed.

Chapter 2 (literature review) substantiates the research gap and addresses relevant topics. First, current academic trends in the understanding of MEAs, how they are elaborated, and the regionalization of environmental governance are outlined. Previous academic consideration of the Alpine Convention, upon which the Carpathian Convention was modelled, as well as existing research on the Carpathian Convention is synthesized.

Chapter 3 (conceptual framework) presents key concepts surrounding political feasibility which inform the research design.

Chapter 4 (methodology) outlines the research design and methodology for empirical data collection and analysis. The research process is described and justified, including the parameters of the content analysis performed on Convention documents as well as the approach taken to interviewing subjects along with limitations and ethical considerations.

Chapter 5 (findings and analysis) presents findings from the research alongside analysis which is structured according to the conceptual framework.

Chapter 6 (discussion) presents further consideration of, and reflection on, findings. It contextualizes their meaning within what was previously known academically and identifies potential paths forward for practitioners.

Finally, chapter 7 (conclusions and recommendations) highlights the main conclusions of the work and provides recommendations for the principle audiences and outlines suggested areas for future research.

## Chapter 2: Literature Review

### Overview

This focused literature review summarizes the state of the art in the assessment of regional environmental governance mechanisms. First, it outlines the current academic understanding in this area of research as well as trends and knowledge gaps, with particular focus on MEAs and how they are elaborated. The second section provides an overview of previous academic consideration of the Alpine Convention. The intent of this section is to identify the types and value of findings which have emerged from studies in a similar, yet distinct, context. Finally, previous research on the Carpathian Convention itself is synthesized with a view towards building upon what is already established in academic literature.

### Multilateral Environmental Agreements

As the main instruments for countries to collaborate on environmental challenges, MEAs have been assessed from many angles in the academic literature. MEAs are complex multi-level governance systems that frequently face implementation challenges. Environmental policy is fairly unique in centring itself around multiple MEAs and their institutions (secretariats and conference of the parties)—other international policy areas such as trade and health have comparatively streamlined international institutions (Kanie 2014).

Some researchers argue that environmental governance would be more effective with an alternate system (Biermann *et al.* 2009). Others argue that the complexity of environmental issues calls for more regionally specific agreements and that the overall institutional structure is not fragmented (Cowie *et al.* 2007; Gomar 2016). Research using network analysis found that the MEA system has self-organized into a complex interlocking structure that has effectively responded to increasing connectivity and complexity of environmental issues (Kim 2013). Other researchers have theorized that there is an emerging order within institutional complexes and that competition among regulatory international institutions leads to institutional adaptation and effective division of labor (Gehring and Faude 2014). Gomar (2016) argued that the MEA system has been de-fragmenting, and that environmental policy integration and balancing different environmental objectives and consideration is determined by effective management of institutional interplay.

Compounding the complexity of the overall MEA governance system is the need to balance the competing needs and priorities of different sectors within specific MEAs (Chambers 2008). Integrated approaches are sought after, but in reality it can be difficult to foster cross-sectoral

interaction (Jordan and Lenschow 2010). There is a growing interest and need to understand regional governance mechanisms (Balsiger *et al.* 2012).

MEAs number at over 500, each reflecting a process of negotiation, national-level acceptance, implementation, and reporting to Secretariats (Kopnina and Shoreman-Ouimet 2015). The MEA system is often criticized because of the lack of synergies among MEAs due to different reporting requirements and inadequate coordination (Kanie 2014; Kopnina and Shoreman-Ouimet 2015). The weak capacity to implement and enforce agreements due to inadequate funding as well as a lack of performance indicators to measure their effectiveness have been raised as issues (Young 2018). Young (2018) argues that “The world of environmental governance is littered with institutional designs that seem attractive on paper but fail to make the transition from paper to practice.” Furthermore, the location of institutional focal points within specific ministries with different mandates or technical expertise can present a challenge in implementation as activities may be skewed towards one subject area (UNEP 2009).

The impact of the involvement of the United Nations (UN) in the development and administration of MEAs has also been addressed in academic literature (Mee 2005). Mee (2005) assessed the role of UNEP and the United Nations Development Programme (UNDP) in generating and implementing MEAs and found fragmentation among institutions and called for the need to enhance support, address problems at their root causes, and increase global governance at the regional level. Furthermore, it has been found that fragmentation of MEAs has challenged implementation because of inconsistencies and disconnects between regimes, resulting in duplication of efforts, inefficiencies, and overlapping norms (Liu and Middleton 2017).

It has been argued that those seeking policy reform should embrace the complexity of the current system and design incremental additions to the existing regime mix which can contribute to overcoming fragmentation and a lack of policy coordination (Howlett *et al.* 2010).

## **The Regionalization of Environmental Governance**

There has been a contemporary trend towards regionalizing environmental policy (Debarbieux *et al.* 2015). The regionalisation of international environmental law is seen as one of the most important legal trends of the last decades (Rochette and Billé 2012). However, there is debate as to the implications of this trend. Some argue that it facilitates polycentric systems of governance, meaning that there are multiple centres of semi-autonomous decision making.

Certain researchers argue that there are advantages to such a system including enhanced adaptive capacity, good institutional fit for specific natural resource systems, and mitigation of risk due to the existence of redundant governance institutions and actors (Carlisle and Gruby 2019). One study using game theory determined that two regional agreements can sustain a larger number of cooperating parties than a single global treaty (Asheim *et al.* 2006). Those researchers recommended that regional cooperation is a good alternative, or at the very least an effective supplement, to global environmental agreements.

In contrast, other researchers argue that the regionalization of environmental governance results in institutional fragmentation. The term fragmentation is debated in international law and international relations, but broadly refers to a lack of coherence in governance architecture. It can be seen as an effect of proliferation and specialization of institutions, their actors, as well as the discourses and norms in a given issue area (Pattberg *et al.* 2014). The result to some researchers is “a patchwork of international institutions that are different in their character (organizations, regimes, and implicit norms), their constituencies (public and private), their spatial scope (from bilateral to global), and their subject matter (from specify policy fields to universal concerns)” (Biermann *et al.* 2009). Debarbieux and colleagues (2015) argue that growing scientific cooperation in the context of the institutionalization of mountain regions in Europe, such as seen in the Alpine Convention and the Carpathian Convention, is an example of the successful application of regionalism.

In addition to MEAs, macro-regional strategies merit consideration as they are of growing importance in the trend of regionalizing environmental governance. Since macro-regional strategies emerged as a policy strategy in the EU in 2009, researchers from the fields of political science and geography have taken interest, but often from very different theoretical standpoints (Pagliacci *et al.* 2019; Gänzle and Kern 2015; Chilla *et al.* 2017). The strategic ambition of macro-regions is considered more comprehensive than international conventions. Conventions offer a contractual framework in relation to environmental goals, whereas macro-regional strategies are not legally binding but often have a wider scope.

## **The Elaboration of MEAs**

MEAs, particularly framework agreements, are often designed to be elaborated through protocols. This process is comprised of three successive stages: (1) elaboration and signature, (2) ratification, and (3) entry into force. The first stage involves agreeing on the content of the protocol which may include agreeing on targets, commitments, and rules surrounding its entry

into force. In the second stage national authorities endorse the protocol and legally commit to abide by its contents once it enters into force. In the third stage, once rules surrounding the protocol's entry into force are fulfilled, commitments come into legal effect in countries (Courtois and Haeringer 2005).

According to Rochette and Billé (2012), "...the international mood is rather unfavourable to developing new international environmental agreements when the overall rationality and efficiency of the existing legal system raises concerns". Indeed, there have been very few international agreements developed since the 2000's. The elaboration of existing MEAs may therefore be of growing importance moving forward as this offers an avenue for the development of international environmental law.

With this in mind, Rochette and Billé (2012) assessed the process of developing Integrated Coastal Zone Management protocols to existing regional seas conventions. They reviewed the expected benefits of protocols, such as their potential to fill gaps in national legal frameworks, rationalize efforts in sustainable coastal management, and strengthen existing institutions.

The authors identified critical conditions for success and found that anticipated support to implementation was particularly essential. This was especially the case in developing countries where "...the density of the legal system is often inversely proportional to its effectiveness." They stress that protocols are not silver-bullets to implementation issues, and that their development is time- and resource-intensive with potentially significant cost. The nature of problems aiming to be solved as well as the context should be carefully considered before embarking on the development of a new protocol. They state that "The age of innocence regarding international law and its actual potential has come to an end: ever more justification will be deemed necessary for each new piece to the system, so as to overcome growing scepticism. This is definitely a constraint to action, but a positive one if used to develop more strategic instruments " (Rochette and Billé 2012).

Other research underscores the importance of consensual scientific knowledge on the development, evolution and outcome of international environmental negotiations (Kailis 2017). NGOs have been identified as key actors in the elaboration of environmental agreements (Betsill and Corell 2001). With academic consideration of regionalism, MEAs, and the elaboration of environmental agreements in mind, attention is now turned to previous research on the Alpine and Carpathian Conventions.

## The Alpine Convention

The Alpine Convention represents the world's earliest international legal instrument for the protection of mountains. It is the first international treaty covering a transnational mountain area in its geographic entirety (Caldwell 2003). It was signed by the EU and the eight Alpine countries: Austria, France, Germany, Italy, Switzerland, Liechtenstein, Slovenia, and Monaco. It opened for signature in 1991 and entered into force on March 6, 1995. Decades of discussion of such a convention led up to the negotiations and eventual signing (Price 1999).

The stated aim of the Alpine Convention is the protection and sustainable development of the Alps. It was intended to address shared challenges and develop common mountain policies through international coordination of spatial planning, transport, energy, tourism policy and other topics.

The Alpine Convention is designed as a framework setting out basic principles of the activities of the treaty and containing general measures for the sustainable development of the Alpine region. Protocols to the Alpine Convention contain more concrete regulations and actions on specific topics to implement the principles laid down in the framework Convention. To implement the protocols, working groups and platforms are established with specific mandates for specific periods of time.

According to Angelini (2009), "The Framework Convention only provides for general obligations, however, it is the Protocols that impose specific obligations on the Parties and create the legal framework necessary for the Convention's implementation." The Alpine Convention underwent an intensive legislative phase from 1996-2000, during which eight thematic protocols were passed. Focus was from then on placed on implementation of existing protocols rather than on the development of new ones (Onida 2009). It has been argued that the status of ratification of protocols did not necessarily impact the level of Convention implementation (Angelini 2009). He points out that when Italy had not ratified any protocols due to slow institutional processes, the country was still taking most of the underlying mandates of the Convention into account. Even when Italy did take issue with the content of a Protocol on Transport, it was already de facto enforceable in Italy since the EU had ratified all protocols.

Overall, the Convention has seen the development of ten protocols; eight on issue specific areas, and two additional ones on "solution of litigations" and on the "adherence of the Principality



of Monaco to the Alpine Convention.” The eight existing issue-specific Protocols are in the following technical areas: spatial planning and sustainable development; mountain farming; nature protection and landscape conservation; mountain forests; tourism; energy; soil conservation; and transport.

The Alpine Convention has been fairly well-studied in academic literature, oftentimes through the lens of policy coherence and harmonization (Caldwell 2003; Price 1999). Price (1999) found that the sequence of preparation of protocols is of great importance in their development as efforts are required to harmonize their content. Early on it was noted that cooperation between countries was limited and there was a lack of political will needed for the Convention as a whole to function as intended (Price 2000).

Nevertheless, the Alpine Convention has been seen as a model for other mountain regions, being deemed an exemplary model for cooperative efforts with regard to natural resources shared or impacted by groups of nations (Caldwell 2003). It is seen as noteworthy since prior regional environmental issues often focused on narrow issues such as water quality and fisheries, whereas the Alpine Convention takes a broad approach to sustainable development (Balsiger 2007). Balsiger (2007) also expressed optimism surrounding the Alpine Convention’s establishment of a large number of transalpine organizations as well as a nascent alpine identity. The soil protocol itself has even been described as a model regime with research highlighting the added value of the international regulatory approach to soil conservation (Markus 2017). At the same time, the Alpine Convention has faced some criticism for a lack of meaningful implementation (Del Biaggio 2013).

The Alpine region along with some of the goals of the Alpine Convention were also assessed through the lens of trade-off analysis (Hastik *et al.* 2016). Hastik and colleagues (2016) assessed the conflicts between renewable energy goals and local nature conservation goals due to the space required for renewable energy systems. They found that conflicts are particularly likely to emerge in biodiversity-rich ecosystems and call for investing effort into characterising conflicting priorities.

## **The Carpathian Convention**

The Carpathian Convention was developed in order to promote and facilitate the sustainable development of the Carpathian Mountains. Since its establishment, there has been a modest amount of literature written on the subject especially when compared to the Alpine Convention

on which it was modelled. The negotiations leading to its formation have been assessed (Fall and Egerer 2004). Fall and Egerer (2004) highlight that though the Convention relies on biophysical justification, it is fundamentally a political project.

Consideration of the Convention is not consistently positive. It has been argued that some actor groups remain excluded and that implementation of the Convention has been slow and unable to keep pace with increasing deforestation, hunting, erosion, temperature extremes, and changes in species behaviour (Taggart-Hodge and Schoon 2016). Taggart-Hodge and Schoon (2016) also note that the loss of cultural links and traditional knowledge has also been significant, but that the Carpathians remain a highly biodiverse area. Their assessment focuses on identifying challenges and opportunities for transboundary governance in the region. They call for the removal of political barriers and institutional blockages to ensure that the region fulfils its role as a model for international collaboration and capacity building. Research has also been carried out on the transferability of the Carpathian Convention's policy design and implementation with a view towards applying lessons to a possible convention in the Balkan context (Ramčilović and Shannon 2008). Such a convention has not yet taken form.

Five protocols to the Carpathian Convention have been developed to date: the Protocol on Biodiversity; the Protocol on Sustainable Forest Management; the Protocol on Sustainable Tourism; the Protocol on Sustainable Transport; and the Protocol on Sustainable Agriculture and Rural Development. However, the Convention addresses many other subject areas in its Articles, including sustainable energy and cultural heritage.

A recent study found that proposed efforts to carry out the Convention's mandate in the area of cultural heritage were ill-considered and caused significant overlap with other initiatives (Głowacki *et al.* 2018). The authors argued that: "Creating one more inventory in addition to the existing international (UNESCO list), national, regional or local heritage inventories makes little sense. If the Carpathian inventory is implemented, it should only cover carefully selected heritage items that are not included in other inventories (e.g. selected sorts of intangible heritage)."

They also criticized the lack of consideration of the link between spatial planning and the preservation of cultural heritage. They called for further revision of the activities which are already taking place in countries and enhanced links between subject areas in order to implement its goals in the field of cultural heritage. They stressed the importance because at the time of writing the Parties were working toward a common cultural heritage protocol.

Indeed, a protocol on cultural heritage has not yet been passed and the Parties are still working towards this goal.

Recently published research assessed the Carpathian Convention through the use of social network analysis, which involves investigating social structures through the use of networks and graph theory (Vetier 2020). Vetier's (2020) analysis assessed the internal network of actors of the Convention as well as the network of regimes with which the Convention interacts. She determined that the Secretariat and Parties represent core actors of the regime as would be expected. More notable was the central role of NGOs and organizations without legal entities, which is atypical for MEA networks. She found that organizations whose legally defined roles are coordinating or observing are in fact perceived as leaders by actors.

Vetier (2020) saw potential in using the Carpathian Convention as a framework to implement obligations that the countries have under other conventions and noted that the Carpathian Convention as a regional regime makes positive contributions to global regimes. However, she also found that while the Convention drives cross-sectoral interactions at the national level in many countries, such interaction is less apparent at the international level.

## Summary

- The proliferation of regional MEAs has resulted in a complex system of environmental governance which is often criticized as fragmented and lacking in implementation.
- Regionalization of environmental governance is an emerging area of academic importance. Macro-regional strategies are of growing importance.
- The international mood is generally unfavourable to the development of new MEAs.
- The elaboration of existing environmental agreements through protocols takes place in three stages: (1) elaboration and signature, (2) ratification, and (3) entry into force.
- Anticipated support of implementation, consensual science, and the interest of civil society have been identified of drivers to the elaboration of environmental agreements.
- Previous studies on the Alpine Convention have found that the order in which protocols are developed impacts their content.
- Researchers focused on trade-off analysis in the Alpine region found that conflicts between renewable energy goals and local nature conservation goals can occur due to the space required for renewable energy systems, with particular likelihood to emerge in biodiversity-rich ecosystems.

- The Carpathian Convention has been criticized regarding its slow implementation. A recent study also found that proposed efforts to carry out activities in the area of cultural heritage caused illogical overlap with other reporting processes and did not adequately consider the mandates of other working areas such as spatial planning.
- Social network analysis on the Carpathian Convention has shown that the leadership dynamics of the Convention are unique. It was also found that cross-sectoral interaction is seen more at the national level than at the international level.
- The Carpathian Convention is largely understudied to date.

## Chapter 3: Conceptual Framework

This section delineates the core elements of political feasibility and presents the conceptual framework which is used in this research. Political feasibility is a measure of how well a solution to a policy problem will be accepted by a set of decision makers and the general public. It addresses constraints that make agreement on policies difficult or prohibit the effective implementation of agreed-upon policies (Dellas and Pattberg 2013). Political feasibility is generally determined through an assessment of three factors: actors, events, and environment. An extended political feasibility analytical framework tailored for assessing policy paths for environmental issues will be described and its use in this study justified.

### Description

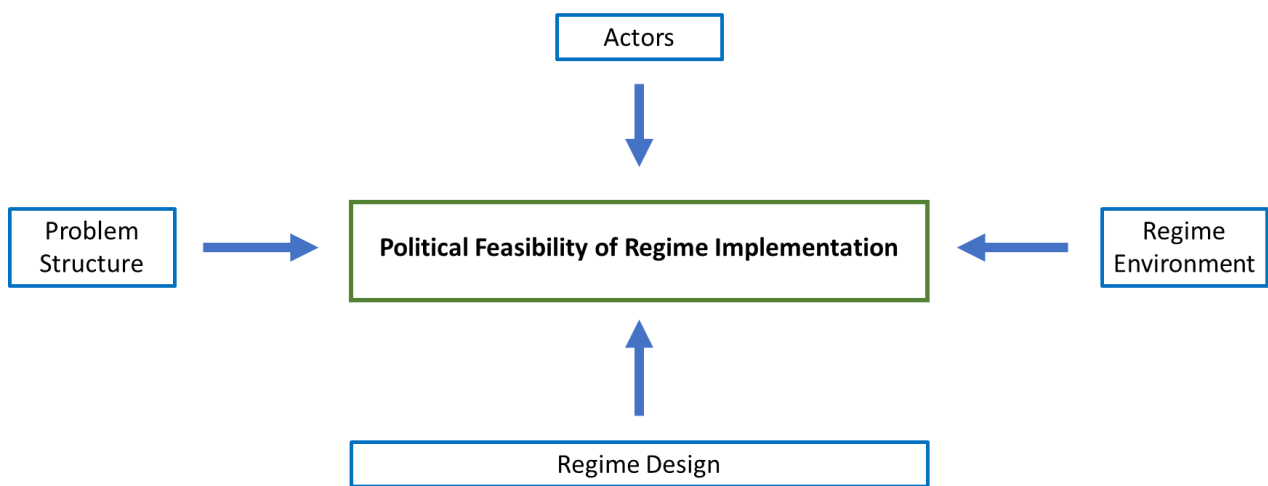
An analytical framework developed by de Vos and colleagues (2013) and modified by Dellas and Pattberg (2013) expands upon these basic factors. Their formalized framework assesses the political feasibility of the formation and implementation of policy options by assessing the following factors: **regime design**, **problem structure**, **actors** and **regime environment** (see fig. 3). The framework builds on political science and international relations literature to differentiate between factors which are barriers to regime formation and implementation, ambiguous factors (due to insufficient data or could work in multiple ways), and drivers to regime formation and implementation. They have tested the framework with multiple subject areas and potential policy solutions, arguing that a trade-off generally exists between transnational approaches that have few barriers to effective implementation but a lower level ambition, and international approaches which have a higher potential impact but more barriers to implementation.

**Regime design** relates to the components of the institutional structure under consideration. **Actors** refers to factors such as autonomy surrounding the negotiating parties and addressees of the regulation such as economic sectors. **Problem structure** refers to characteristics of the environmental problem aiming to be addressed. Finally, **regime environment** refers to other organizations, institutions, and norms in the wider international systems which influence the preference of actors. According to the framework, the feasibility of forming and implementing an effective regime is more likely under specific conditions which are deemed favourable (see Appendix B for the full list of factors).

In the original conceptual framework, a panel of experts rated a number of global regimes on how they met certain characteristics (de Vos *et al.* 2013). This effectively validated the

framework in a quantitative manner by using the model to compare existing regimes. The framework was subsequently applied to specific policy options in the area of biodiversity. Variables were qualitatively assessed by the authors (i.e. present/not present, low, medium, or strong) to determine the relative likelihood of successful implementation of the policies.

The conceptual framework will be applied in a modified format wherein the variables related to regime formation and implementation are qualitatively assessed by the author in relation to the possibility of forming and implementing an energy protocol to the Carpathian Convention. This is in line with traditional political feasibility analysis which is used to predict the outcome of a proposed solution to a policy problem.



*Fig. 3 Conceptual Framework.*

*Contextual variables (problem structure, actors, and regime environment) and design variables (regime design) impact the likelihood of regime formation and implementation.*

## Justification

This modified conceptual framework is considered suitable for the research at hand due to a number of factors. First, it offers a holistic lens through which to examine governance dynamics surrounding the Carpathian Convention. Second, it allows for the systematic study of political barriers to, and opportunities for, successful formation and implementation of new regimes (in this case, an Energy Protocol).

Studies on political feasibility and implementation are somewhat limited as compared to studies that focus on the technological and economic feasibility of policy paths. Since determining the political feasibility of the development of a new protocol is key in achieving the objectives of

this research, this conceptual framework fills this need. Furthermore, it has previously been applied to a range of environmental policy issues (Dellas and Pattberg 2013).

Use of the conceptual framework also ensures that robust theoretical learnings are incorporated when analyzing data. This framework will therefore be applied in a modified manner to (1) organize assessment of data and (2) enhance the generalizability of barriers and drivers identified by interview subjects to other policy processes. Within this conceptual understanding, drivers and barriers to implementation in the area of sustainable energy will ultimately be identified with a view towards providing recommendations for future action. This process will allow the setting of priorities and identifying how to overcome barriers to implementation.

## **Limitations**

This assessment framework is fairly novel, meaning it has perhaps not been as robustly tested as traditional political feasibility frameworks. Furthermore, the framework has normally been used for comparison between regimes and policy paths which will not be the case in this research. As such, in this study the determination of whether the policy path is politically feasible will not be reliant on a clear ‘winner’, but rather on careful consideration of all the factors which have been identified through the assessment. While this is in line with traditional political feasibility analyses and will be made robust through the incorporation of theory-backed success factors, it differs from the manner in which the conceptual framework has been applied in the past which could be considered a limitation. The application of the framework has previously been conducted on global regimes; however, the authors indicate that it can also be applied to regional levels as is done in this study (Dellas and Pattberg 2013).

It is recognized that there is some degree of subjectivity and interpretation involved in this conceptual framework as it is applied in this research. The identified factors are not exhaustive or necessarily authoritative, but offer tools for a preliminary understanding of political feasibility of implementation within a given type of regional governance initiative. Furthermore, in early application of this framework, the authors made use of a panel of experts to rate how specific subject areas related to specific factors. This element is necessarily not applied here, but the theoretical basis is considered sufficient for applicability as the framework has been tested in a number of studies with valuable findings.

## Chapter 4: Methodology

### Study Design

This research study is qualitative and takes the form of a case study incorporating political feasibility analysis. The advantage of a case study is that it allows for focused consideration of a specific MEA, allowing for deeper and more contextualized understanding of how and why they face certain challenges in their implementation and elaboration. A political feasibility analysis was chosen due to the inherently political nature of elaborating environmental agreements. Research is designed in order to allow for the primary research questions to be answered: namely, how politically feasible is the development of an energy protocol to the Carpathian Convention, and how would this meaningfully impact the implementation of the Convention? By limiting the scope of research on one sector and centering research around the possibility of enhanced implementation in this area, results are expected to be more focused and meaningful.

Given the main findings from the literature review and the need for theory generation regarding regional agreements, this research initially relied on an inductive approach. Data collection and analysis were undertaken concurrently as the study was an iterative and reflexive process. The research design was informed by being immersed in the daily activities and realities of the SCC. Research was designed in a manner that strove to make results forward-looking and useful to both practitioners and academics.

### Data Collection

Qualitative data was collected through three methods: content analysis of historical documentation, semi-structured interviews with key actors, and, to a lesser extent, observation. It has been established that content analysis combined with semi-structured interviews is a valid and useful method in understanding institutional context which is key in achieving the stated aims and objectives of this research (Heslinga *et al.* 2018).

A content analysis of publicly available documents on the convention website was conducted in the earliest stages. First, the text of the Convention itself along with existing Protocols were analyzed. The process then sought to identify gaps in the implementation of the text of the convention by assessing the frequency of meetings, programs, projects, and events related to specific Articles, Protocols, and Working Groups (WGs) through the consideration of historical



documents. At the same time, it yielded a deeper understanding of the regime design of the Carpathian Convention as a whole.

Once the topic of energy was identified as an area undergoing minimal treatment, a more focused content analysis was conducted on documents connected to the Carpathian Convention related to the subject of energy. There is a wealth of publicly available documentation on the Carpathian Convention website, so a systematic approach was taken in identifying which to prioritize in the assessment.

Agendas and reports from meetings of the Conference of the Parties (COP) were analyzed first since high level decisions are made at these meetings. Subsequently, agendas and reports from Carpathian Convention Implementation Committee (CCIC) meetings were assessed since this body of the Convention is responsible for its implementation. WG terms of reference, meeting presentations, strategies, and action plans were also assessed. These documents were systematically scanned and coded for the key words of ‘energy’ and ‘sustainable energy.’ The aim of this analysis was to identify what initiatives on the subject of energy in the context of the Convention had previously taken place. It also sought to identify relevant topics, findings, and themes presented in said activities. This process was important and valuable in understanding the regime context. Documents related to ongoing efforts to develop a cultural heritage protocol were also assessed in order to identify attitudes and themes related to the development of new protocols to the Convention.

With an understanding of previous treatment of the subject of energy within the Carpathian, potential interviewees were identified. In order to address the research questions most effectively, it was necessary to generate data from targeted discussions with actors who were familiar with the Carpathian Convention. Purposive sampling was therefore chosen as the sampling method to identify relevant stakeholders. Purposive sampling, also referred to as judgment sampling, is a nonprobability sampling technique involving the deliberate selection of participants for the qualities they possess. The technique does not require underlying theories or a set number of participants (Etikan *et al.* 2016). According to Etikan and colleagues (2016), “Simply put, the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experience...This involves identification and selection of individuals or groups of individuals that are proficient and well-informed with a phenomenon of interest.”

Availability and willingness to participate along with the ability to effectively communicate experiences and opinions are also important considerations in the selection of participants. This sampling method is often used in qualitative research which requires information-rich interviews and does not seek to make generalizations to an entire population, as is the case in this study design (Etikan *et al.* 2016).

The individuals most proficient and well-informed with the phenomenon under consideration, namely, the feasibility of developing a new protocol to the Carpathian Convention, are necessarily those with close ties to the Convention. This includes Secretariat staff and national convention points in the countries which are party to the Convention.

Four of the seven national focal points were interviewed in this research as the remaining three were not available for interview. One interview was conducted with a staff member of the SCC. An interview was conducted with an actor involved with the priority area of energy in the macro-regional Strategy for the Danube Region in order to gather additional data on the broader regime environment (see table 1)

*Table 1 Respondent Codes and Organizational Affiliations of Interview Subjects*

| <b>Respondent Code</b> | <b>Role and Affiliation to Carpathian Convention</b>  |
|------------------------|---|
| Respondent 1           | Secretariat staff member (International Organization) |
| Respondent 2           | Convention focal point (government)                   |
| Respondent 3           | Convention focal point (government)                   |
| Respondent 4           | Convention focal point (government)                   |
| Respondent 5           | Convention focal point (government)                   |
| Respondent 6           | Macro-regional strategy priority area coordinator     |

The six interviews were conducted with a mix of open-ended and more specific questions. Semi-structured, one-on-one interviews were conducted over video in most cases. Input was provided over email in one case when a call was not possible due to language barriers. While efforts were made for consistency, questions were adapted depending on the subject's relationship to the Convention. Subjects were asked what drivers and barriers they could imagine to developing, negotiating, and implementing a Energy Protocol to the Carpathian

Convention. They were also asked what added value they could imagine from such a protocol and what they would see as important for inclusion.

Finally, since this research was carried out in the context of an internship with the SCC, some degree of observation of the functioning of the Secretariat is acknowledged to have informed this research. The author also attended several WG meetings and witnessed interactions between the Secretariat, national focal points, representatives from NGOs, and other interested parties. While the author's involvement in such processes undoubtedly generated insights, any data included in this research is triangulated and substantiated through analysis of publicly available documents and interviews.

## **Data Analysis**

The earliest stage of data analysis entailed coding documents for the key words of energy and sustainable energy. Appearances were noted in order to develop an inventory of previous activities and understand how emphasis on the subject had changed over time.

Recordings from interviews were manually transcribed. Whenever possible, stated facts that appeared in transcripts were triangulated with Convention documentation in order to enhance reliability. Transcripts were inductively coded, a process which allowed for themes to emerge from the data itself. Themes were largely conceptualized as drivers and barriers to implementation. As themes emerged from this process, relevant documents which were inventoried in earlier stages of research were reassessed and coded accordingly. Relevant quotes and sections of text were organized according to identified themes.

Once this initial stage of inductive data analysis was undertaken, a more deductive stage of coding was undertaken. The conceptual framework was applied to identify which, if any, of the coded themes from transcripts and documents related to design and context variables (regime design, problem structure, actors, and regime environment) in the framework. This phase was deductive in that it tested whether potential drivers and barriers to implementation identified in academic theory were present in this particular case (the full list of factors in the conceptual framework is available in Appendix B). The process resulted in a list of barriers, neutral factors, and drivers to the development of an energy protocol based on a hybrid approach of inductive and deductive coding and theme development (Fereday and Muir-Cochrane 2006).

## Limitations

While the research design is deemed appropriate for meeting the aims and objectives at hand, there are a number of limitations which must be addressed. First is the use of secondary data in the form of documents related to the Convention. It is important to note that not all of the nuance of political meetings and negotiations always makes its way into a meeting report. Reliance on such documentation may therefore result in gaps in understanding the true institutional context surrounding the subject of energy. This limitation is partially mitigated through the combination of data collection methods.

While semi-structured interviews serve to round out potential limitations of relying on secondary data, this method of data collection also presents its own limitation. Specifically, purposive sampling is subjective. Since the focus of this research is on political feasibility, input from a selective sample of key actors from governments and international organizations is largely justified. However, political feasibility should ideally also incorporate direct input from the private sector, civil society, and academia. While views from civil society and academia on energy in the CMR are somewhat discernible from academic literature, the lack of representation in interviews is considered a potential limitation that merits consideration.

Since this research takes the form of a case study there are some inherent limitations. The possibility of case studies carrying bias towards verification is acknowledged and efforts are made to mitigate this tendency by taking a reflective approach to research. The generalizability of case studies is also broadly considered in academia to be limited, as is the potential for theory building. However, as Flyvberg (2006) has pointed out, many of the cited drawbacks to case study research are overstated. The view that one cannot generalize from a single case study is not entirely accurate. In addition, “formal generalization is overvalued as a source of scientific development, whereas ‘the force of example’ is underestimated” (Flyvbjerg 2006). No illusions are held that findings will be completely generalizable to other MEAs since each one has a unique history, design, and context. However, the specific exploration of drivers and barriers to policy elaboration in this instance, and the value the process may offer, may yield illuminating findings which merit consideration in other contextual settings.

It is acknowledged that as time progresses, collected data from interviews may decrease in relevance as governance situations are dynamic and the development of a protocol is a long-term process. However, it is anticipated that findings will be of use to practitioners going forward as many drivers and barriers in the conceptual framework are related to structural

factors. More general academic findings resulting from this case study could possibly remain relevant for the foreseeable future.

Finally, while every attempt was made to eliminate researcher bias, it is acknowledged that being immersed in the operations of the SCC may have impacted the research design and process. While this may represent a strength in some ways it could reduce replicability of the study. The ethical considerations of the circumstances under which research was carried out are considered in the following section.

## **Ethical Considerations**

This research has been undertaken in combination with an internship with the SCC. While the position was not funded, it is acknowledged that training and support was received and that working relationships were developed with SCC staff. Every effort was made to remain cognizant of the impacts of being immersed in the office and ensure that this did not influence the nature of conclusions and that integrity and honesty of research results were maintained.

Interviews were conducted in the context of the internship which may have somewhat encouraged participation in interviews. However, interviewees had a high degree of voluntariness of participation as they were not required to offer their time. Permission was acquired for recording interviews for transcription purposes and anonymity was offered if requested. As the main goal was to determine general themes, barriers, and drivers, names are not deemed necessary for inclusion in this thesis.

While areas of improvement may be identified to implement the mandates of the convention, research results are not anticipated to be harmful to the reputation, dignity, or privacy of the subjects. The research project has also been designed in such a way that it aims to offer constructive insights. The scope of the project was clearly communicated so as to limit the risk of raising the expectations of research subjects or harming their relationships with other people. It was also made clear that subjects should not expect an immediate solution to identified issues or put themselves at undue risk.

## Chapter 5: Findings and Analysis

This section is organized according to the four types of input variables to political feasibility presented in previous chapters: regime design, problem structure, actors, and regime environment. Findings from the analysis of documentation and interviews are presented within each category. The conceptual framework is then applied to identify barriers, neutral factors, and drivers to the process of developing and implementing an Energy Protocol.

### Regime Design

#### Convention Setup

As a framework convention, the Carpathian Convention is intentionally designed in a broad manner with the intention of elaboration through protocols and other means. Decisions are made by the COP, a body of the Carpathian Convention where all Parties to the Convention are represented. Meetings are normally held every three years. The COP is responsible for the adoption of protocols and amendments as well as for the establishment of subsidiary bodies to the Convention. Overall, it steers the political direction, decides on the programme of work and budget, and reviews and supports the implementation of the Convention along with its Protocols. The Convention is administered by UNEP and the Secretariat is based in Vienna, Austria. The working language of the convention is English, with all official documentation written in English. The EU is not a Party to the Carpathian Convention as it is for the Alpine Convention and many other regional governance mechanisms.

Subsidiary bodies are established by the COP in order to provide technical inputs, advice, and information on specific issues. Subsidiary bodies include thematic WGs and the CCIC. The CCIC consists of representatives of the Parties to the Carpathian Convention and meets at least once a year. The CCIC is charged with preparing the political decisions of the COP, including consideration, development, and ultimately recommendation for adoption of additional Protocols or other measures for the achievement of the objectives of the Convention. The CCIC is also tasked with monitoring the compliance of the contracting Parties with the Convention and its Protocols.

Carpathian Convention COP meetings take place every three years, which is relatively infrequent as compared to the Alpine Convention which has meetings every second year. On this subject, respondent 1 expressed the following:

I believe more frequent meetings perhaps could give us a little bit more flexibility and help us to quickly redesign or redirect the approaches. I think it's a sad fact, that we need to have this official approval from the COP only with a three year cycle. At the same time I believe it gives us a good time span to really focus on what we need to do and have a step by step approach which is necessary in bigger activities...So in my view the setup that we have right now where every three years we're having the COP which takes the high level decisions, but in the meantime we have regular meetings of the implementation committee that can actually give us some more mandates, is good enough.

Having regular COP meetings as opposed to an autonomous standing decision-body is considered to decrease the likelihood of effective regime implementation according to the conceptual framework. It may therefore represent a barrier to the elaboration of the Convention.

Decisions made in the Carpathian Convention are achieved by consensus. The potential barrier of consensus was raised by respondents 2, 3, and 4 in the context of failed efforts to develop a Protocol on Cultural Heritage and Traditional Knowledge. The protocol experienced support among most Parties, but has not yet achieved consensus and has therefore been blocked from moving forward. As such, this design element can be seen as a potential barrier to the development of a new protocol. Indeed, according to the conceptual framework, voting systems based on consensus or unanimity often lead to weaker or blocked decisions, which in turn decreases the level of implementation.

### **Convention Implementation**

The convention has produced a number of non-binding and binding instruments. Non-binding instruments include action plans, guidelines, and recommendations whereas binding instruments include protocols and other formal legally binding agreements. Though reporting is required, compliance to the Convention is largely based on goodwill of the countries as no sanctions can be undertaken.

The general path in implementing the Carpathian Convention has been developing protocols to further clarify the ideas of the articles of the Convention. Respondent 1 underscored the importance of protocols in the following manner:

I think that protocols are crucial for supporting the implementation of the Carpathian Convention. They give much more of an idea as to what are the main issues, activities, problems, challenges, and opportunities that we need to focus on within the Carpathian Convention. And also protocols as such are legally binding documents that are adopted and signed by the Parties, so it is quite a strong document, especially when it comes to fundraising.

The importance placed by the Secretariat on protocols is also underscored in documentation related to efforts to develop a protocol on heritage:

From the legal point of view - the binding force of all Articles of the Convention is equal. As the Parties decided on enhancing the implementation of several other Articles of the Convention by adopting corresponding thematic protocols (on biological and landscape diversity, on sustainable forestry, tourism, transport, agriculture and rural development), the implementation of Article 11 on cultural heritage probably deserves the same methodological and legislative approach as in the case of other Articles (Secretariat of the Carpathian Convention 2018).

According to Article 18 of the Convention, any Party may propose protocols to the Convention. Draft protocols must be circulated to all Parties through the Secretariat at least six months prior to conference session at which they are considered. Previous protocols have taken anywhere from one to five years to go from signature to entry into force (Secretariat of the Carpathian Convention 2020).

On this subject, respondent 2 noted that activities related to subject areas can be seen to take place without a protocol in place: “Of course it’s been the general way forward that we have the Convention and that we’ve been developing protocols to somehow develop the ideas of some of the articles of the convention. But at the same time, there’s also work going on for other areas.”

One such area is climate change. A WG on Adaptation to Climate Change has been in place since 2012, with meetings being held every one or two years since then. It was only in 2017 that an additional Article (Article 12b is on Climate Change) was adopted to the Convention on the subject. Despite the fact that it has yet to be ratified by most countries, meeting reports display effort being placed in elevating the mandate of the WG in the Convention.

Respondents 2 and 3 noted that the importance of design surrounding WG leadership, with respondent 2 saying:

Importantly, it’s the Secretariat influencing because of how the work is being done. So it’s slightly similar but also different from the Alpine Convention where there are like leaders for specific topics by different countries. Whereas in the Carpathian Convention it’s always the Secretariat who kind of knows what’s happening and who’s involved in all the issues that are going on. So of course their capacity is limited.



The Alpine Convention's governance structure is such that specific countries are primarily responsible for driving forward activities within different topics. This stands in contrast to the Carpathian Convention where WGs are not driven by specific countries, but primarily by the Secretariat which has implications on how topics such as energy are elaborated and implemented.

## **Energy in the Convention**

The subject of energy is addressed in Article 10 of the Carpathian Convention which reads as follows:

1. The Parties shall promote cleaner production technologies, in order to adequately prevent, respond to and remediate industrial accidents and their consequences, as well as to preserve human health and mountain ecosystems.
2. The Parties shall pursue policies aiming at introducing environmentally sound methods for the production, distribution and use of energy, which minimize adverse effects on the biodiversity and landscapes, including wider use of renewable energy sources and energy-saving measures, as appropriate.
3. Parties shall aim at reducing adverse impacts of mineral exploitation on the environment and ensuring adequate environmental surveillance on mining technologies and practices.

(Parties to the Carpathian Convention 2003)

In the past, the subject of energy has been addressed in the WG on Sustainable Industry, Energy, Transport, and Infrastructure. Over time, the working group has become increasingly focused solely on the subject of sustainable transport to the point that WG meeting titles have gradually dropped the term energy and now only relate to sustainable transport. This shift occurred in parallel with the development of the Protocol on Sustainable Transport which was signed by the majority of countries in 2014 and entered into force in 2019.

An Action Plan for a Regional Framework Approach for Promotion of Renewable Energies in the Carpathian Region was developed in 2008 after a regional workshop on renewable energy was held in Lyiv, Ukraine (UNIDO and UNEP 2008). The Action Plan has not since been updated. It aims to provide guidelines for the development and implementation of policy solutions, financial instruments, and capacity building measures to support and promote the use of renewable energy. It was intended to serve as the basis for further discussion among the countries of the Carpathian Convention and other stakeholders.

Past meeting reports from CCIC meetings show sporadic efforts to pursue projects related to renewable energy. Many of these were ultimately rejected by funding agencies and did not take place.

A commonly identified theme in interviews was capacity. Human and financial capacity was seen as the single greatest barrier to the development of new protocols, as well as general implementation of the mandate of the Carpathian Convention. Interviewees felt this was the case for both the Secretariat and the Ministries at the national level as expressed by respondent 2: “And we can see that in all the ministries that are involved, it’s only like one person. Or maybe several people, but only part of their agenda concerns the Carpathians.”

It was expressed that the region is heavily reliant on outside funding and support which often comes in the form of projects with set end dates. While the Secretariat is highly independent in that it is hosted by UNEP in a country which is not party to the Convention, it has a small staff and funding is often tied to specific projects. As such, according to the conceptual framework the Secretariat cannot be defined as strong, with respondent 1 stating that “Sometimes activities are limited due to this simple but essential factor: human or financial capacity.”

The framework convention design is seen as a driver to regime formation in cases where there are high transaction costs and scientific uncertainty, as is arguably the case with the concept of sustainable development as whole. Allowing for the development of more precise agreements certainly opens the door to implementation when sufficient resources and political will exist. Furthermore, according to the conceptual framework regimes with broad issue coverage are more likely to be implemented. However, it was expressed in interviews that the broad nature of the Convention requires choices to be made regarding what to focus on as a result of, again, limited capacity. Respondent 2 expressed this as follows:

The project as such, it was very ambitious in the very beginning. And it’s of course a great idea to really work together on sustainable development of the Carpathians. But in reality what we can see is that of course the resources are limited. So we always have to somehow choose our priorities- what we can work on. Not only within the Carpathians, but also the ministries that are responsible for the convention.

A commonly expressed theme in interviews was a lack of faith in the implementation of policies. It was expressed that the Convention proceeds quite well in paperwork but not as well in practice. The level of perceived implementation was highly dependant on the topic at hand.

Respondent 5 stated that “We do not have particular problems in policy development, but we have significant problems in policy implementation.”

Based on consideration of the Convention’s regime design from analysis of documents and interviews, factors impacting the political feasibility of the development of an Energy Protocol related to regime design are as follows:

***Barriers***

- Voting by consensus
- Weak compliance mechanisms
- Infrequent COP meetings

***Neutral Factors***

- Secretariat is highly independent but not strong in the sense of funding/human resources

***Drivers***

- Legally binding rules
- Framework convention design
- Broad issue coverage

## **Problem Structure**

With identified limitations and opportunities of the regime design in mind, consideration is turned to the problem structure at hand. The Carpathian Convention covers a wide range of problem types which have been addressed to varying degrees as explained by respondent 3: “The main issue and the most developed is biodiversity under the convention. Also we have some in middle stages of development, including transport, tourism, agriculture. And some others, including, unfortunately, energy, are at the very, very beginning. So in order to reach that balance between thematic areas, for sure we have to do something.”

Energy is an extremely broad subject area undergoing rapid developments. Since different energy sources have unique environmental impacts, it can be considered both a systemic and a cumulative problem. Systemic problems relate to environmental change at the level of global geosphere-biosphere systems; for instance, atmospheric and marine systems which are impacted by greenhouse gas emissions from the burning of fossil fuels. Cumulative problems refer to issues such as biodiversity loss or deforestation.

Consensual scientific information is a potential barrier to the development of an Energy Protocol. As briefly touched upon in the introduction, the trade-offs resulting from different forms of renewable energy can be complex, especially in areas with high levels of biodiversity.

This is especially the case with hydropower and biomass which have been identified as the most relevant for the CMR through this research and in the 2008 Action Plan. Respondent 5 highlighted the need for knowledge development and sharing in the process of protocol development, stating that “Knowledge about existing types of power plants and access to technology, especially renewable ones with minimal environmental impacts, are very important.”

While the situation varies between countries, the public demand for action on climate change is generally not as strong in Central and Eastern Europe than in Western Europe (Poortinga *et al.* 2018). However, according to public opinion polls the vast majority of citizens are at a minimum convinced that climate change is occurring and that it is at least partially caused by humans (Poortinga *et al.* 2018). There are also a number of active NGOs which have developed statements on the parameters renewable energy systems should fit in order to be sustainable. It was raised during interviews that a Ukrainian NGO suggested the possibility of the development of an Energy Protocol in 2019— such interest from civil society is seen as a major driver to the development of a protocol. In addition, recent political shifts such as Poland’s creation of a new Ministry of Climate and increased interest in renewable energy may also signify increased political will in certain countries. This could be especially relevant given that Poland will succeed Hungary’s Presidency of the Carpathian Convention at the next COP meeting set to take place within the next year.

While interview subjects were not experts in the field of energy, both the importance of systemic and cumulative impacts of the problem were emphasized. The connection between sustainable energy and climate change was deemed key, with respondent 3 saying that “In general the connection to climate I think is very crucial. Because now we have the article on climate, so I think at the same time if there is anything going on with energy there will always be this connection to climate change.”

At the same time, the potential trade-offs between reduced emissions and cumulative impacts of certain types of renewable energy such as decreased biodiversity and deforestation were deemed highly relevant. The subject of environmental trade-offs in relation to hydropower was raised on several occasions. Respondent 5 particularly highlighted the importance of this subject given that “...there is virtually no opportunity for fish to pass through our hydroelectric power plants upstream to spawn.”

Interview subjects expressed different opinions regarding whether a protocol should take a broad issue coverage approach as is seen in the Energy Protocol to the Alpine Convention or whether it should be more specific as is seen in the majority of protocols to the Carpathian Convention. Overall, interview subjects highlighted that the added value of a protocol would be to address shared issues which are not already addressed in national policies. What this would look like varied between countries, especially for non-EU member states such as Ukraine which largely have less stringent policies surrounding, and incentives for the promotion of, renewable energy. For respondent 2 it was felt that:

Of course, I think especially with regards to energy, there are already a lot of policy papers, strategies, or legislation on a national level. So of course if we develop a protocol we might need to ensure that not only is it in line with national legislation, with what's going on at the national level, but also that it has some added value, bring something new that is not already being done on a national level.

Respondent 1 echoed the need for added value in stating that “we should keep in mind for developing future protocols, that we should definitely try to at least avoid duplications or giving additional burdens to the countries if this is not something of special added value for the region and for our activities.” Respondent 1 went on to explain as follows:

I know the protocol will be successful if the parties are standing behind it and supporting it. And of course it needs to make sense, and we need to consider to what level of detail we can go for. But considering different protocols, most of them were going quite specifically into the details, at the same time we already now see that protocols that were designed several years ago are not necessarily following the current policy frameworks, or are maybe not even supporting enough what we would like to achieve in the region, or are giving us some provisions that may be considered as overlap or burden.

In light of this, the careful selection of what to focus on in the broader subject of sustainable energy would greatly impact the development of a protocol. According to the conceptual framework, regimes dealing with systemic issues are more likely to be successful than those dealing with cumulative issues. For cumulative issues, the lack of immediate cross-border implications may make the detection of noncompliance less likely. In contrast, noncompliance with the provisions of regimes tackling systemic environmental problems has global impacts. However, since the previous work of the Carpathian Convention has largely been based on addressing cumulative issues this is not anticipated to be a substantial barrier to the development of a protocol. Actions taken in the area of sustainable energy would likely involve both cooperation and collaboration. Cooperation would entail taking action at the national level,

keeping other countries informed of processes, and sharing knowledge. Collaboration, in contrast, would involve actively working with one another on outcomes. According to the framework, cooperation problems are more likely to be successful than collaboration problems. Since sustainable energy does not clearly fall into one category or the other as a whole, these factors are considered neutral. Based on this assessment, relevant factors for the development of an energy protocol related to the problem structure are summarized as follows:

### ***Barriers***

- Scientific uncertainty is present to the breadth of the subject, particularly regarding the sustainability of biomass

### ***Neutral Factors***

- Sustainable energy is both a systemic and cumulative problem
- Sustainable energy is both a cooperation and a collaboration problem

### ***Drivers***

- Growing public concern in areas of climate change and sustainable energy

## **Actors**

While the Secretariat plays a leading role in facilitating the elaboration of the Carpathian Convention, respondent 1 emphasized that their “primary role is to follow the interests and the needs of the countries.” However, these interests and needs are not always uniform.

The Carpathian Convention involves both EU and non-EU member states. A theme that emerged is that the Convention offers a mechanism for non-EU parties to reach environmental regulatory levels similar to those of the EU, which are generally more stringent than those seen in Serbia and Ukraine. However, it was also pointed out that for EU member states, a protocol would need to deliver added value beyond reaffirming existing policies on the EU and national levels. Respondent 2 stated that “Many of the protocols can help non-EU members of the Carpathian Convention to somehow get closer to the legislation of the EU. So this is kind of another issue, but I think that at the same time that if we have a protocol that it doesn’t need to repeat what is already being done. Especially concerning the EU.” In contrast, respondent 5 expressed that they would look forward to recommendations for the sustainable development of energy based on the existing principles and methods inherent in the European Union and stated that “Adoption of the Protocol will encourage Ukraine and Serbia aspiring EU members to approximate EU legislation and practice.” Based on this, there is a certain degree of asymmetry of interests is present as Parties to the Convention which are non-EU member states may have different priorities and motivations.

The focal points to the Carpathian Convention are situated in the Ministries of Environment in each country. The intent is for these permanent figures to liaise with relevant agencies as necessary. A theme that arose in interviews was administrative hurdles at the national level. In the energy sector, the institutional structure in the Carpathian countries is complex.

Renewable energy is currently outside the purview of the ministries in which focal points are based in most of the Carpathian countries (see Table 2). While the intention is that focal points liaise with other relevant agencies, there are often limitations to this process in reality which can represent a barrier to holistic implementation. For example, with changing governments and institutional settings, contacts of focal points may shift significantly over relatively short periods of time. Respondent 4 saw such internal barriers as potentially important, and even cited the possibility of negative interplay between ministries: “Because finally we build on what we have, and if all relations are not good it’s difficult to find a good communication and to move things along.”

*Table 2 Ministerial Context for Carpathian Countries*

| <b>Country</b>  | <b>Ministry in which Carpathian Convention Focal Point is Based</b> | <b>Ministry Primarily Responsible for Energy</b>         |
|-----------------|---|--|
| Czech Republic  | Ministry of the Environment   | Ministry of Industry and Trade                           |
| Hungary         | Ministry of the Environment   | Ministry of National Development                         |
| Romania         | Ministry of Environment, Water and Forests                          | Ministry of Economy, Energy and the Business Environment |
| Serbia          | Ministry of Agriculture and Environmental Protection                | Ministry of Mining and Energy                            |
| Slovak Republic | Ministry of the Environment   | Ministry of Economy                                      |
| Poland          | Ministry of Environment   | Ministry of National Assets<br>Ministry of Climate       |
| Ukraine         | Ministry of Energy and Environmental Protection                     | Ministry of Energy and Environmental Protection          |

When it comes to energy as it is described in Article 10, there are a number of economic sectors which need to be regulated. From heating and cooling to different forms of energy production and distribution, energy is a trans sectoral issue requiring vertical and horizontal policy action. As such, multiple agencies and ministries must coordinate amongst each other along with those of other countries. An energy protocol would arguably affect a larger number of sectors to be regulated than seen in other protocols, save for biodiversity. Tourism, agriculture, forestry, and

transport are arguably more specific. This could represent a significant barrier to the development of a protocol as it would require a high degree of coordination between actors in different ministries, agencies, and industries.

Respondent 1 stressed that lack of active engagement from the ministries of foreign affairs in the countries represented a barrier to certain efforts such as EU accession to the Convention, stating: “I believe all of our focal points are very much behind and supportive of this idea, however it’s not in their capacity to push it forward at the ministerial/governmental level.” The lack of EU participation in the Carpathian Convention is seen by some as a barrier to implementation of the Convention as a whole and efforts are still being made to achieve EU accession.

One potential driver to the development of a protocol with regards to actors is the participation of ministers in COP meetings. According to the conceptual framework, participation of high-level ministerial representatives from the negotiating countries rather than lower-level delegates at conferences of the parties (COPs) means that political pressure on decision-makers is more likely to be maintained. As such, the relevant factors for the development of an energy protocol related to actors are summarized as follows:

#### ***Barriers***

- Large number of sectors related to energy complicates coordination between Ministries as well as other actors

#### ***Neutral Factors***

- Asymmetry of interest between EU and non-EU members

#### ***Drivers***

- Participation of high-level government representation in COPs

### **Regime Environment**

The overall regime environment is important in determining the feasibility of developing an Energy Protocol. There are a number of regional governance mechanisms with nearly identical geographic coverage in CEE, but which have different mandates and areas of focus. At the same time, global environmental agreements such the Convention on Biological Diversity (CBD) address many of the same subjects which are addressed in the Carpathian Convention. Consideration is now turned to the interplay of the Convention with other institutions.



The Carpathian Convention has Memoranda of Understanding (MoUs) and Memoranda of Cooperation (MoC) with several different organizations. The use of Memoranda is a well-established and highly valued practice in the field of international cooperation to consolidate and enhance existing partnerships. Two entities with which the Convention has partnerships are of particular importance when considering sustainable energy in the CMR: the International Commission for the Protection of the Danube River (ICPDR) and the Macro-regional Strategy for the Danube Region (EUSDR).

ICPDR aims to ensure the equitable and sustainable use of waters in the Danube basin. Its work is based on the Danube River Protection Convention (DRPC), which represents the major legal instrument for cooperation and transboundary water management in the Danube River Basin. Given ICPDR's focus on riverine issues, it has been active for several years in initiating a dialogue with representatives from the hydropower sector. ICPDR developed detailed guidelines regarding hydropower with recommendations in five areas: (1) General principles for sustainable hydropower development, (2) Technical upgrade of existing hydropower plants and ecological restoration, (3) Strategic planning approach for new hydropower development, (4) Strategic planning approach for new hydropower development, and (5) Mitigation of negative impacts of hydropower (ICPDR 2010). Any efforts to develop an Energy Protocol to the Carpathian Convention would likely need to consider existing policies and recommendations to promote ensure any action is mutually beneficial.

EUSDR addresses a range of issues falling into twelve priority areas— one of which is sustainable energy. Currently, work in the priority area is heavily focused on geothermal energy, particularly in the Pannonian basin. It is also currently engaged in work in the hydrogen sector. A biomass action plan was put forward in 2014 which provides a detailed assessment of the biomass energy landscape in the Danube region. The main findings at the time were that the forestry sector represented the main biomass supplier, but that the agriculture and waste sector was increasing rapidly in significance. Most biomass is consumed in the form of heat and the biomass supply is increasing. They also found that there is a lack of biomass related data in the region (EUSDR 2014).

Respondent 6 noted EUSDR has a stated aim of limiting duplication of work and enhancing cooperation with the Carpathian Convention and other regional mechanisms. The aim of EUSDR as a macro-regional strategy is broader than that of the Carpathian Convention and it is not legally binding.

Poland, notably the only country which is not subject to EUSDR, has been in the process of proposing a macro-regional strategy for the Carpathians since 2019. Such a development would suggest that there is perceived added value of macro-regional strategies not offered by the Carpathian Convention. A macro-regional strategy, while not binding or funded in and of itself, could offer an additional forum for cooperation with EU support.

There is a growing level of institutional interplay between the Carpathian Convention and global institutions, especially regarding biodiversity. The Carpathian Convention has been highlighting its place as a regional implementation mechanism of the CBD and contributing inputs to the post-2020 Global Framework for Biodiversity currently being developed. This is seen as a way in which to increase visibility of the Convention while at the same time increasing involvement with a synergistic policy process which will impact the Carpathian Convention. Respondent 1 noted that “I have a feeling from the experience I’ve been having, that until now those little conventions are just overlooked even though the impact in the region sometimes can be much stronger than that of the global environmental agreements.”

There are a number of scientific advisory bodies and a wide range of experts involved with the Carpathian Convention. The European Academy of Bozen-Bolzano (EURAC Research) has played an important role in supporting the Convention since its inception. There is a scientific body called Science for the Carpathians (S4C) which has the following three aims: scientifically support actions leading towards sustainability in the Carpathian region; increase the visibility of the Carpathian region in the global change research agendas; and link research and practice regarding human-environmental systems in mountain regions. An open meeting of the S4C called The Forum Carpaticum is held every two years. The most recent iteration in 2018 included a session theme on renewable energy titled “Green energy transformation in the Carpathians: opportunities and risks.” It primarily focused on woody and non-woody biomass energy and the entailed policies and transition processes relevant for mountainous regions. It underscored the importance of sound knowledge and information on the required resource base, available potentials and the anticipated impacts of altered management practices and regulatory systems. The occurrence of this session speaks to the capability of S4C to serve as a scientific advisory body if continued interest is displayed in the area of energy.

However, S4C represents in some ways a loose association of scientists and practitioners. If knowledge is to be mobilized in the area of energy a more proactive approach to stakeholder

engagement may be necessary. Respondent 3 illustrated this sentiment in stating that “An important issue would be to find relevant stakeholders. Not just ministries, but also experts and also agencies, organizations involved in this process.”

One of the stated aims of the Carpathian Convention is to provide a forum for dialogue, and it is notable for its high level of interaction with NGOs such as World Wildlife Fund (WWF). As such, participation by stakeholders in decision-making in the Convention can be considered a driver to the development of new protocols.

Despite the fact that the Energy Protocol to the Alpine Convention was developed in 1991 for a different context, its existence sets a precedent and it could serve as a potential model for consideration. The three basic commitments of the protocol are to (1) reduce energy needs through the use of more efficient technologies; (2) make wider use of renewable energy sources to meet remaining energy needs; and (3) optimise existing plants which produce energy from non-renewable sources. In Article 6 it defines renewable energy sources as solar, wind, and biomass. Article 6.4 goes on to state: “The Contracting Parties shall particularly encourage energy produced through the rational use of water and wood from sustainably managed mountain forests.” It does not provide specific definitions regarding sustainably managed mountain forests. Particular attention is paid to hydropower in the Protocol and recommendations are made to control its use as to minimize impacts on aquatic life. Article 7.4 calls for countries to re-open disused hydropower plants rather than develop new ones.

The Protocol also specifically addresses nuclear energy but is limited to calling for knowledge sharing among countries and harmonized environmental radioactivity monitoring procedures. Energy from fossil fuels is addressed in Article 8. It calls for the use of best available techniques in new thermal plants using fossil fuels to produce electricity or heat and to limit emissions through the use of appropriate technologies and fuel types. It states that Parties will examine the technical and economic feasibility and environmental capability of replacing thermal plants with ones using renewable energy sources. It also calls for cogeneration, which is the process of producing electricity from steam (or other hot gases) and using the waste heat as steam in chemical processes to use energy more efficiently.

An understanding of this Protocol is important since the existence of a preceding agreement dealing with similar subject matter is a driver to the process of developing a new protocol. Overall, a precedent has been set for a protocol with wide issue coverage covering that takes

into account the need to carefully consider the development of hydropower. However, it provides minimal guidance as to the potential environmental trade-offs of bioenergy.

Negative institutional interplay, meaning contradicting mandates and/or requirements with other governance mechanisms, is not an identified factor in this case. However, interaction with other regional governance mechanisms is lacking in some regards. One theme that arose during interviews was the overlapping sphere of influence of the Carpathian Convention and the other regional governance mechanisms which operate in the same space. Some interviewees expressed a desire to see more interaction between these governance mechanisms given their geographic and subject overlap. Respondent 2 stated that:

Of course the Carpathian convention is focused mainly on mountains and the Danube strategy is focused mainly on river issues. At the same time, it is more or less the same region and they focus on very similar topics. So there is also biodiversity and transport and energy. So it would also be important to see what's happening there and not double the work.

There have been indications of this beginning to occur— from 29-31 May, 2019 the ninth WG on Biodiversity meeting was held back-to-back with an EUSDR priority area 2 energy workshop in the Czech Republic. The workshop was centred on minimizing the negative impact of power lines on birds. However, it was expressed by some that there is an opportunity for enhanced interplay with other regional governance mechanisms. Based on this assessment, the relevant factors for the development of an Energy Protocol related to the regime environment are summarized as follows:

### ***Barriers***

- Limited interplay with other regimes

### ***Neutral Factors***

- Consensual scientific information by scientific advisory bodies

### ***Drivers***

- The regime is embedded in a larger institutional framework
- Participation by stakeholders in decision-making
- The existence of a preceding international agreement dealing with the same or a similar problem

## **Summary**

Based on this assessment, it is clear that there are a range of barriers and drivers to enhancing implementation of the Carpathian Convention in the area of energy. Table 3 provides a

summary of the identified barriers and drivers to the development of an Energy Protocol along with neutral factors which could possibly serve as either drivers or barriers pending other factors. Many barriers related to regime design have been proven to be easily overcome in the past given enough interest and will (e.g. voting by consensus and infrequent COP meetings). However, many contextual variables may present more significant challenges (eg. scientific uncertainty, large number of sectors, and limited institutional interplay).

*Table 3 Barriers, Neutral Factors, and Drivers to the Development and Implementation of an Energy Protocol to the Carpathian Convention.*

| <b>Input Variable Type</b> | <b>Barriers</b>   | <b>Neutral</b>   | <b>Drivers</b>   |
|----------------------------|---|--|--|
| <b>Regime Design</b>       | -Voting by consensus<br>-Infrequent COP meetings<br>-Weak compliance mechanisms | -Secretariat is highly independent but lacks financial and human capacity                                    | -Legally binding<br>-Framework convention design<br>-Broad issue coverage  |
| <b>Problem Structure</b>   | -Scientific uncertainty   | -Energy is both a systemic and cumulative problem<br>-Energy is both a cooperative and collaborative problem | - Growing public concern in areas of climate change and sustainable energy   |
| <b>Actors</b>              | -Large number of economic sectors   | -Asymmetry of interests between EU and non-EU member states  | -Participation of high-level government representation in COPs   |
| <b>Regime Environment</b>  | -Limited interplay with other regional governance regimes                       | -Consensual scientific information by scientific advisory bodies   | -Embedded in larger institutional framework<br>-Participation by stakeholders in decision-making<br>-The existence of a preceding international agreement dealing with the same or a similar problem |

While some interview subjects felt that a protocol would contribute to balanced implementation of the Convention, others were wary that it might only serve as a policy paper if is not supported by activities. Human and financial capacity was universally identified as an overarching barrier to implementation of Article 10.

It was emphasized that political will would be a major driver to the implementation of a protocol. As such, it was recommended by some that a protocol should seek to address shared

concerns of the Carpathian countries and focus on areas it is uniquely qualified to address rather than duplicate national or EU-level policy. Treatment of the subject of energy faces the added challenge of the large number of sectors involved. Renewable energy is outside the purview of the ministries in which focal points are based in most of the Carpathian countries. In general, the overall political feasibility of developing an energy protocol is high, however it is anticipated that it would be a lengthy process and that implementation of a protocol may be limited. The next chapter will discuss these findings in further depth and identify potential paths forward for the Carpathian Convention.

## Chapter 6: Discussion

*So far we can see that protocols were developed in the Convention and somehow it happened, so I don't think there would really be any barriers that would stop the protocol from being developed. But of course what we have to take into account are the limited resources. Not only financial but also human resources, which is also the same thing for the development of the protocol and then the implementation. -Respondent 2*

Based on this assessment, the political feasibility of eventually developing an energy protocol in some form to the Carpathian Convention is reasonably high. However, while the barriers to the development of a protocol could likely be overcome given enough time, whether this step would truly enhance implementation of the Convention's mandate is still in question. This section reflects on findings with the aim of addressing the question of how, if at all, the development of a new protocol would meaningfully impact the implementation of the Carpathian Convention.

### Validity of Findings

While it is recognized that there are limitations to the research including the limited sample size and lack of representation of certain sectors, themes identified through the research offer a starting point in understanding how those who are closely involved with the convention perceive dynamics surrounding its implementation.

As discussed in chapter four, the generalizability of findings is somewhat limited since the intent was to assess a single MEA in a focused manner. However, given the large number of regional MEAs and common criticisms of the overall system in academic literature, some barriers and proposed solutions may resonate in others MEA contexts.

The conceptual framework accurately reflected many of the drivers and barriers independently raised by interview subjects. As such, the validity of this framework, albeit in a modified form, is strengthened by its application in this research. However, certain themes identified through inductive analysis were not strongly represented in the conceptual framework, including human and financial capacity and political will. The only factor related to this theme is strength of Secretariat within the area of regime design. Capacity at the national level in the form of human and financial resources devoted to the Convention was not reflected.

However, capacity and political will are overarching concepts which are difficult to define and do permeate through many of the factors which are present in the framework. The framework therefore, on the whole, represents a flexible approach for identifying factors for successful development and implementation of environmental regimes. It therefore offers a robust, theory-driven framework for conducting political feasibility analyses on environmental policy paths.

## Paths to a Protocol

*Yes we can write a protocol— it's a very easy thing and it can be done very easily. And I suppose with my experience that I have had in the convention that it might go through quite easily through the parliaments and the ratification on the national level. But in the end we want to see that it's also useful. -Respondent 2*

As outlined in the literature review, the path to new protocols to MEAs involves the following steps: (1) elaboration and signature, (2) ratification, and (3) entry into force. As alluded to in the quotations introducing this chapter, some respondents felt that there would be no issues with the second step but expressed doubts about the first and third.

In order for elaboration to occur in the first place, the barriers of limited political will and capacity must be overcome. A number of existing drivers identified in this assessment are anticipated to lay the groundwork for a protocol, including: the framework design of the convention and its intended broad issue coverage; growing public concern surrounding climate change and sustainable energy; the permeability of the Convention to NGO actors; and the existence of the protocol on energy to the Alpine Convention.

The most crucial factors for elaboration, though, may face barriers related to political will and capacity. Sufficient buy-in from Parties, sustained interest from civil society/NGOs, and leadership from the SCC represent key factors the advancement of activities in the Convention and are anticipated to be instrumental for the development of a protocol. Meeting these factors is likely possible given that the barriers identified in this assessment are addressed and overcome.

The main barriers identified were: lack of human and financial capacity; lack of consensual science; trans sectoral nature of energy; asymmetry of interests of EU and non-EU member states; and limited institutional interplay. In order to overcome these barriers a number of steps are proposed.



Low-cost strategies to develop human and financial capacities should be considered. Concrete steps that could facilitate this would be to delegate leadership of WGs to specific countries on a rotating basis which may be able to devote more attention. Granting more decision-making power to the CCIC could also allow for more flexible reactions to emerging areas of interest and opportunities. Increased remote conferencing capacities developed as a result of Covid-19 could lower costs of meetings and allow experts who may not traditionally have been able to attend to contribute to implementation. Respondent 3 suggested as much, stating:

I think that the coronavirus helped us a little bit because now we know that it is possible to have internet meetings, we already had one under the convention a few weeks ago and it was a great success I dare say. So costs of meetings, virtual meetings, are of course not high. They're not at all costly compared to normal meetings. So maybe in such a situation it may even be easier to develop a protocol.

Beyond these actions, additional protocols should make every effort not to add additional reporting/implementation burdens to countries when possible. Efforts should also be made to streamline inter-agency engagement at the national level where necessary.

The generation and sharing of knowledge in the area of sustainable energy should be mobilized. The capacity to mobilize experts from S4C could be further developed, and capacity building and technology transfer more coordinated. Furthermore, increased cooperation and decreased siloes between the WG of the Carpathian Convention would likely yield valuable insight into knowledge, policy, and implementation gaps. Continued efforts should be made to identify concerns of countries that are not addressed through existing national and EU policy mechanisms.

Asymmetry of interests may represent somewhat of a barrier to the development of an energy protocol, but it is a key feature of the Convention itself and this factor is navigated on a regular basis. The most fruitful path forward would be further consultation and exchange to achieve a compromise which neither overburdens parties with redundant commitments, nor ignores the regulatory opportunities afforded to non-EU member states by the Convention. At the same time, needs of non-EU member states should be recognized and incorporated. The likely level of support of implementation is a major driver to the development of new protocols and buy-in from Parties is therefore required.

In order to decrease institutional fragmentation, it is recommended that further cooperation and interaction is carried out with other regional and multi-level governance mechanisms. Overlaps

in commitments should be avoided or strategically developed to be reinforcing and promote synergies. The ongoing process of seeking EU accession to the Carpathian Convention could also greatly contribute to decreasing institutional fragmentation. Cooperation between global and regional levels in the area of energy could also be further pursued in order to enhance visibility and decrease fragmentation.

Despite challenges that may be associated with putting a protocol into action, developing an energy protocol could offer benefits in and of itself. As a legally binding document it demonstrates political will which can, in turn, encourage investment from donors in the subject area which would allow for concrete activities to take place. Furthermore, taking steps to overcome barriers identified here would contribute to enhanced implementation of the Convention's mandate as a whole. The question of whether a protocol is the best way in which to implement the mandate of the Carpathian is an open subject and requires wider consideration of the role of regional MEAs in the global environmental governance system.

## Alternative Paths

*[Writing a protocol] doesn't have to necessarily be the best way forward for all of the issues. So maybe for some issues maybe it would be the project cooperation that's more relevant. Or let's say another sort of international cooperation. So maybe two steps back is maybe not so much what would be in a protocol, but if this is really the best way forward with regards to the sustainable energy issue. And maybe a step even before is to see how best to implement the article to the convention. -Respondent 2*

*So I think in paperwork we can proceed pretty well, but I don't know in practice, well, I have some ... I don't know. In practice it's not so well that's for sure. -Respondent 4*

At present, the Carpathian Convention serves in many ways as a mechanism for the creation of aspirational "soft-law." It could be argued that this is the main purpose of regional MEAs; they offer a forum in which countries can come together to formalize lofty environmental goals. On the other hand, policy papers alone can be seen as insufficient in carrying out the Convention's overall mandate of sustainable development of the region.

Should the Convention, then, focus on passing more binding "soft law," or focus on implementing the many commitments which are already in place? As was raised by several interview subjects, there are other ways besides a protocol to carry out activities as displayed by the WG on Climate Change and workshops related to Articles without protocols. Alternative options to the pursuit of a protocol might include updating the strategic action plan on renewable energy to include more concrete goals and activities and reflect the current policy

landscape surrounding sustainable energy. Another path would be to focus enhancing knowledge generation, mobilization, and sharing in the area of sustainable energy through renewed attention to the subject in activities and meetings of the WG on sustainable industry, energy, transport, and infrastructure.

At the same time, within the subject area of energy such actions have not been occurring in recent years and a catalyst is likely required to change this. If there is not momentum and motivation, non-binding action plans and strategies can easily fall to the wayside. The value of a protocol, beyond creating binding requirements and facilitating EU policy integration, could be in building momentum and displaying political will. This could, in turn, contribute to securing funding to make concrete activities come to fruition. As such, the traditional method of implementing framework conventions through detailed protocols may indeed still be a valid way towards enhanced implementation despite the existence of alternative paths forward.

In considering whether the development of an energy protocol would meaningfully enhance implementation, the following statement by Rochette and Billé (2012) presented in the literature review bears reconsideration: “The age of innocence regarding international law and its actual potential has come to an end: ever more justification will be deemed necessary for each new piece to the system, so as to overcome growing scepticism. This is definitely a constraint to action, but a positive one if used to develop more strategic instruments.”

Based on the interviews conducted in this research, there is indeed some skepticism surrounding the added value of an energy protocol and strong justification would be necessary for its development. But as Rochette and Billé (2012) argue, such constraints to action may also result in more strategic and useful instruments, be they binding or non-binding, for the Parties going forward.

Overall, it can be said that regional environmental agreements, especially framework conventions, have more to offer in terms of advancing and implementing environmental policy than is seen at present. Specific recommendations to enhance the implementation of the Carpathian Convention in the area of energy, through a protocol or otherwise, will be delivered in the conclusion. Finally, the outcomes of this research in relation to the global environmental governance system as well as future directions for research in this area will be reflected upon.

## Chapter 7: Conclusion and Recommendations

The aim of this study was to determine how the Carpathian Convention could enhance the implementation of its mandate in the area of sustainable energy. This aim was broken down into two objectives: (1) determine the political feasibility of the development of an energy protocol and (2) determine whether the development of a new protocol would meaningfully impact the implementation of the Carpathian Convention. In order to meet these objectives, a political feasibility assessment was carried out on the policy path of developing a new energy protocol. Research was designed according to a conceptual framework which sought to identify drivers and barriers to the process related to the regime design, problem structure, actors, and regime environment. Qualitative data was strategically collected from historical convention documents and semi-structured interviews with six key actors. Data was analyzed through a hybrid approach of inductive and deductive coding and theme development.

The main identified drivers were: the framework design of the convention and its intended broad issue coverage; growing public concern surrounding climate change and sustainable energy; the participation of stakeholders (ie. permeability of the Convention to NGO actors); and the existence of the protocol on energy to the Alpine Convention. The main identified barriers to the development of a protocol were: lack of human and financial capacity; the trans sectoral nature of energy issues; asymmetry of interests of EU and non-EU member states; and limited institutional interplay.

Based on this analysis it was determined that yes, despite identified barriers an energy protocol could feasibly be developed given enough time and sustained interest, but it is unlikely that the action of developing an energy protocol alone would singlehandedly enhance implementation of the Convention in this area. Paths to overcoming barriers to the development of a protocol as well as alternative paths forward were reflected upon in the discussion. The significance of the study was then placed in the context of the existing academic understanding of MEAs.

Overall, it can be said that the Carpathian Convention is an ambitious regional governance initiative with the potential to guide sustainable development in CEE. However, implementation has been undeniably slow and limited in a number of subject areas including energy. Its multi-sectoral nature is both an opportunity and a possible impediment; limited capacities of countries and the SCC means that concerted effort is required to maintain efforts and programming in a wide range of sectors.

It is clear that the Carpathian Convention is not exempt from many of the common criticisms of MEAs delineated in the academic literature. Researchers have cited a lack of coordination and weak capacity to implement and enforce agreements due to inadequate funding and human resources as among the largest drawbacks of an environmental governance system based on many MEAs. Lack of capacity, limited implementation, and institutional fragmentation have indeed been identified as important factors during this case study. Kim's (2013) assessment that MEAs have developed into an interlocking network system applies to an extent in the case of the Carpathian Convention, as exemplified by growing connections between the regional and global levels. However, interlinkages are not consistent and institutional interplay could be enhanced with respect to other regional governance mechanisms.

In order to enhance implementation of the Carpathian Convention in the area of energy, and more broadly, it is recommended that focal points, the SCC, and other interested actors engage in the following actions:

- Develop low-cost strategies to increase capacities (human and financial)
  - Leverage increased remote conferencing capacities developed as a result of Covid-19 to host more frequent, lower cost meetings with academia and NGOs
  - Develop strategies for efficient use of national budgets/resources
  - Consider delegating leadership of WGs to specific countries
  - Grant more decision-making power to the CCIC
- Reduce institutional fragmentation/overlaps and promote synergies
  - Foster increased interactions with other regional and multi-level governance mechanisms
  - Further enhance cooperation between global and regional levels
  - Avoid increasing reporting burdens and/or develop strategically reinforcing commitments when developing future Protocols
  - Streamline inter-agency engagement at the national level
  - Explore linkages with global conventions related to energy and climate change
- Mobilize knowledge generation/sharing in the area of sustainable energy
  - Continue to identify common concerns of countries that are not addressed through existing national and European policy mechanisms
  - Increase cooperation, decrease siloes between WGs
  - Coordinate capacity building and technology transfer
  - Increase capacity to mobilize expertise at national levels

Beyond these recommendations for practitioners, it is also recommended that further academic studies are undertaken on regional MEAs. The Carpathian Convention is only one of many environmental agreements, and further case studies are necessary to understand their intricacies and role in the global environmental governance landscape.

Even though this study represents only one case, it has broader implications regarding the current challenges and opportunities of regional MEAs and their potential place in environmental governance. The question of what role regional MEAs should serve is best answered by those who such agreements aim to serve. There is no single answer as each agreement has different contextual and design variables. However, this case study has highlighted and reaffirmed the implementation challenges that can arise when the level of capacity does not match the level of ambition of regional MEAs.

Regional cooperation is increasingly being seen as an alternative, or at least a supplement, to global environmental agreements. The regionalization of environmental governance is set to continue and the many existing regional MEAs are not going to disappear. There are undoubtedly challenges and drawbacks to a regional governance approach, but it also represents an opportunity for focused consideration of an area's shared needs and opportunities which may be missed at national or global levels. Continued stock-taking of the level of implementation of existing mechanisms such as the Carpathian Convention is required to ensure that such agreements are effectively put into action to solve the planet's most pressing environmental issues.

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## Appendix A: Total Primary Energy Supply (TPES) by Source in countries which are party to the Carpathian Convention

Data from International Energy Agency (2020)

Units KTOE

| Energy Source      | Czech Republic (2018) | Hungary (2018) | Poland (2018) | Romania (2017) | Serbia (2017) | Slovakia (2018) | Ukraine (2017) |
|--------------------|-----------------------|----------------|---------------|----------------|---------------|-----------------|----------------|
| Coal               | 15666                 | 2234           | 49629         | 5400           | 7874          | 3309            | 25757          |
| Natural Gas        | 6819                  | 8261           | 16078         | 9620           | 2117          | 4077            | 24554          |
| Nuclear            | 7817                  | 4114           | 0             | 2999           | 0             | 3936            | 22449          |
| Hydro              | 140                   | 19             | 169           | 1246           | 787           | 309             | 769            |
| Biofuels and Waste | 4392                  | 2699           | 8173          | 4048           | 1087          | 1369            | 2989           |
| Oil                | 9333                  | 7489           | 29703         | 9428           | 3662          | 3937            | 12696          |
| Wind, solar, etc.  | 274                   | 333            | 1210          | 839            | 11            | 66              | 149            |
| <b>Total</b>       | <b>44441</b>          | <b>25149</b>   | <b>104962</b> | <b>33580</b>   | <b>15538</b>  | <b>17003</b>    | <b>89363</b>   |

| Energy Source      | Czech Republic (2018) | Hungary (2018) | Poland (2018) | Romania (2017) | Serbia (2017) | Slovak Republic (2018) | Ukraine (2017) |
|--------------------|-----------------------|----------------|---------------|----------------|---------------|------------------------|----------------|
| Coal               | 35.2512%              | 8.8831%        | 47.2828%      | 16.0810%       | 50.6758%      | 19.4613%               | 28.8229%       |
| Natural Gas        | 15.3439%              | 32.8482%       | 15.3179%      | 28.6480%       | 13.6247%      | 23.9781%               | 27.4767%       |
| Nuclear            | 17.5896%              | 16.3585%       | 0.0000%       | 8.9309%        | 0.0000%       | 23.1489%               | 25.1211%       |
| Hydro              | 0.3150%               | 0.0755%        | 0.1610%       | 3.7105%        | 5.0650%       | 1.8173%                | 0.8605%        |
| Biofuels and Waste | 9.8828%               | 10.7320%       | 7.7866%       | 12.0548%       | 6.9958%       | 8.0515%                | 3.3448%        |
| Oil                | 21.0009%              | 29.7785%       | 28.2988%      | 28.0762%       | 23.5680%      | 23.1547%               | 14.2072%       |
| Wind, solar, etc.  | 0.6165%               | 1.3241%        | 1.1528%       | 2.4985%        | 0.0708%       | 0.3882%                | 0.1667%        |
| <b>Total</b>       | <b>100%</b>           | <b>100%</b>    | <b>100%</b>   | <b>100%</b>    | <b>100%</b>   | <b>100%</b>            | <b>100%</b>    |

## **Appendix B. Full List of Rules on the Likelihood of Regime Formation and Implementation as Applied in the Conceptual Framework**

**Adapted from (Dellas and Pattberg 2013; de Vos *et al.* 2013)**

### **Regime formation**

#### **A Problem Structure**

- A1: The higher the regulation costs, the less likely is regime formation.
- A2: High public concern for the problem increases likelihood of regime formation.
- A3: Systemic problems increase the likelihood of regime formation.
- A4: Cumulative problems decrease the likelihood of regime formation.
- A5: Scientific uncertainty decreases the likelihood of regime formation.
- A6: In case of a collaboration problem, regime formation is less likely.

#### **B Negotiation Process/Regime Design**

- B1: The higher the negotiation costs, the less likely is regime formation
- B2: If a problem is marked with great asymmetry of powerful states interests, differentiation of rules increases likelihood of regime formation.
- B3: If a problem is marked with great asymmetry of interest between important states within the issue area, differentiation of rules increases likelihood of regime formation.
- B4: In case of a collaboration problem, the more side-payments are made available, the more likely is regime formation.
- B5: In case of high transaction costs and scientific uncertainty, an initial framework treaty followed by more precise agreements increases likelihood of regime formation.
- B6: If the environmental problem is considered urgent by a majority of actors, an initial informal agreement increases likelihood of regime formation
- B7: In case of cumulative cleavages, regime formation is more likely if there are positive or negative incentives.
- B8: In case of a collaboration problem, regime formation is more likely if there are positive issue-linkages.
- B9: In case of cumulative cleavages, regime formation is less likely.

#### **C Actors**

- C1: In case of a systemic environmental problem, non-support of one or more important states within the issue area, decreases likelihood of regime formation.
- C2: In case of a cumulative environmental problem, the more of the important states within the issue area support a regime, the more likely is regime formation.
- C3: Great asymmetry of powerful states interests decreases likelihood of regime formation.
- C4: Great asymmetry of interest between important states within the issue area decreases likelihood of regime formation.
- C5: If almost all powerful states support regime formation, then regime formation is more likely.
- C6: If almost all important states within the issue area support regime formation, then regime formation is more likely.
- C7: The fewer economic sectors are needed to regulate an environmentally harmful activity, the more likely is regime formation.



- C8: If the states needed to regulate a harmful activity are homogeneous, then regime formation is more likely.
- C9: If the environmental problem is considered urgent by the majority of states, then regime formation is more likely.
- C10: If the coalition of “pushers” is more powerful than the rest, regime formation is more likely.
- C11: If the coalition of “laggards” within a regime is more powerful than the rest, regime formation is less likely.

#### **D Regime Environment**

- D1: The existence of a preceding international agreement dealing with the same or a similar problem enhances the likelihood of regime formation.
- D2: Consensual scientific information by scientific advisory bodies increases the likelihood of regime formation.
- D3: Participation by stakeholders in decision-making increases the likelihood of regime formation.

### **Regime implementation**

#### **E Problem structure**

- E1: In case of a collaboration problem, regime implementation is less likely.
- E2: The higher the regulation costs, the less likely is regime implementation.
- E3: Systemic problems increase the likelihood of regime implementation.
- E4: Cumulative problems decrease the likelihood of regime implementation.

#### **F Actors**

- F1: Participation of high-level government representation in COPs increases likelihood of regime implementation.
- F2: If almost all powerful states participate in a regime, then regime implementation is more likely.
- F3: If almost all important states within the issue area participate in a regime, then regime implementation is more likely.
- F4: The fewer economic sectors are needed to regulate an environmentally harmful activity, the more likely is regime implementation.
- F5: In case of a systemic environmental problem, non-participation of one or more important states within the issue area, decreases regime implementation.
- F6: In case of a cumulative environmental problem, the more of the important states within the issue area participate in the regime, the more likely is regime implementation.
- F7: Outvoting of important states within the issue area decreases regime implementation.
- F8: Great asymmetry of interest between powerful states decreases likelihood of regime implementation.
- F9: Great asymmetry of interest between important states within the issue area decreases likelihood of regime implementation.

#### **G Regime design**

- G1: Regime mechanisms that increase scientific knowledge generation, synthesis and dissemination are likely to increase regime implementation.

- G2: If a problem is marked with great asymmetry of powerful states interests, differentiation of rules increases likelihood of regime implementation.
- G3: If a problem is marked with great asymmetry of interest between important states within the issue area, differentiation of rules increases likelihood of regime implementation.
- G4: In case of a collaboration problem, regime implementation is more likely if there is a strong compliance mechanism.
- G5: Regime implementation is more likely if there are side-payments.
- G6: In case of a coordination problem, regime implementation is less likely without a strong information and communication mechanism.
- G7: The more precise the rules of a regime are, the more likely is regime implementation.
- G8: Legally binding rules increase the likelihood of regime implementation.
- G9: Differentiated rules increase the likelihood of regime implementation.
- G10: The existence of a strong autonomous secretariat increases the likelihood of regime implementation.
- G11: Mechanisms for regular reporting and implementation review increase the likelihood of regime implementation.
- G12: Voting systems based on consensus or unanimity lead to weaker decisions in regime implementation, which decreases regime implementation.
- G13: Regimes with broad issue coverage are more likely to be implemented.
- G14: Regime mechanisms that increase public awareness are likely to increase regime implementation.
- G15: In case of a collaboration problem, regime implementation is more likely if there are positive side-payments.
- G16: Sanction mechanisms within a regime increase likelihood of regime implementation.
- G17: An autonomous standing decision-body increases the likelihood of regime implementation.
- G18: An ad-hoc decision-body or a regular meeting of the Conference of the Parties decreases the likelihood of regime implementation.

## **H Regime environment**

- H1: The embedding of a regime in a larger institutional framework increases the likelihood of regime implementation.
- H2: Negative interplay with other regimes decreases regime implementation.
- H3: Positive interactions with other regimes increase regime implementation.
- H4: Participation by stakeholders in decision-making increases the likelihood of regime implementation.