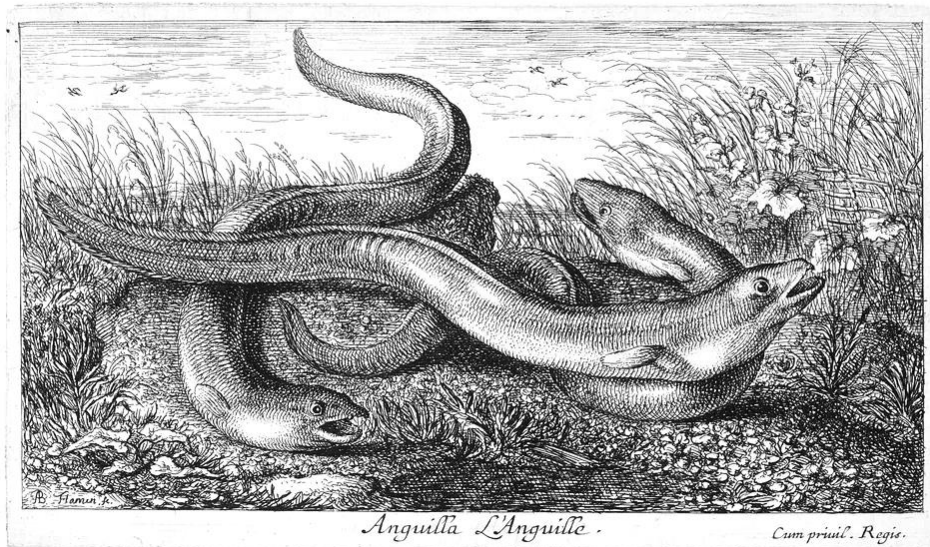


Slippery as an Eel

An analysis of the European Union's Eel Regulation
Framework



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Abstract¹

This thesis uses an evaluative approach to analyse the European Union's Eel Regulation Framework (ERF). By using theories on both legitimacy and posthumanism, the aim of the study is to answer the question of in which ways the ERF can be considered legitimate with both human and non-human stakeholders in mind. As environmental issues and biodiversity loss become increasingly severe, there is an urgent need for legislation that is both legitimate, effective, and able to meet the interests and needs of humans and other species alike.

Through Qualitative Content Analysis a coding frame, based on dimensions of input and output legitimacy as well as posthumanism, is used to analyse several documents connected to the creation and evaluation of the ERF. The results show that the ERF cannot be considered legitimate with any stakeholders in mind, as there is a deficiency of all theoretical dimensions in the analysed documents. However, the use of concepts from both legitimacy theory and posthumanism is able to offer a new perspective that is a step forward in the field of biodiversity governance.

Key words: eel, EU, legitimacy, posthumanism, stakeholders

Words: 18077

¹ Image on front page: rawpixel.com/Public Domain

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1 Introduction²

1.1 Introduction

“Aristotle’s conclusion was that the eel simply comes into being, like a slithering, mysterious miracle.” (Svensson 2019, p. 24)

In 2019, Swedish journalist Patrik Svensson published *The Book of Eels*. The book became an immediate success, winning that year’s Non-Fiction August Prize and was quickly sold to 34 other countries. In it, Svensson tackles the conundrum that has stumped and fascinated humanity since the days of the ancient Egyptians, through to Aristotle, Carl Linnaeus, and even Sigmund Freud. The eel. What is it, where did it come from, how does it procreate, and where does it go to die?

It is very easy to descend into philosophical contemplations when discussing the eel as it is shrouded in such mystery. The harsh truth though is that it is becoming harder and harder to figure out answers to the questions surrounding it, because the eel is quickly disappearing. Like many other animal and plant species, the eel is under threat from several directions – climate change is affecting its habitats and breeding cycles, overfishing is threatening its population numbers and ability to remain viable, and direct human impact such as hydroelectric dams and toxic waste kill off eels in high numbers every year.

Implementing measures to protect the eel can be controversial though. Many fishermen and businesses rely partly or completely on being able to catch eel. Eel fishing is an important part of the cultural heritage of many coastal communities around Europe. Eel is also considered a delicacy and traditional foodstuff in many regions. For many people in Europe, protecting the eel as a species means infringing upon livelihoods, economy, lifestyle, and cultural legacy. At the same time, doing nothing could mean the complete extinction of wild eel, which would put an effective stop to these activities anyway, as well as cause irreparable damage to marine ecosystems as the eel is considered a keystone species that functions as both predator and prey.

² I want to thank my supervisor, Anders Uhlin, and my seminar group for great advice and discussions. I also want to thank my parents for their support, as well as Edward Allison and Felicia Axelin for valuable feedback.

All of these factors combined require that any measures implemented to protect eel need to be, above all, legitimate. Legitimate as in democratically and legally constructed with all human and non-human stakeholders in mind, as well as effective in achieving the intended objectives, to ensure acceptance, uncomplicated implementation, and substantial results. It is also vital that legislation aimed at preserving an animal species displays an adequate consideration of that species's needs as well as an understanding of how its consequences may affect both natural and human systems.

The aim of this study is to examine the European Union's 2007 Eel Regulation Framework (ERF) using legitimacy and posthumanist theory. The paper intends to answer the research question:

In which ways could the ERF be considered legitimate with all human and non-human stakeholders in mind?

The research question will be answered using the method of Qualitative Content Analysis on relevant documents produced by the EU and suitable external sources.

1.2 Background

1.2.1 European eel

The European eel (*Anguilla anguilla*) is an omnivorous fish. Its average life span is up to 85 years in the wild, reaching lengths and weights of up to 1,3 meters and 6,5 kilo respectively (National Geographic).

The life cycle and breeding habits of eel is part of what makes it difficult to manage the species. It is believed that eels spawn in the Sargasso sea, though it has never been observed. The larvae then drift across the Atlantic to Europe where they transform into glass eels. As these enter the freshwater systems and travel inland, they become elvers, yellow eels. As such, they live for up to 20 years or more in rivers and lakes. As the fish become sexually mature, they transform into silver eels and travel back downstream and out to sea where they make their way back to the Sargasso, spawn, lay eggs, and supposedly die.

Eels have been consumed by humans since ancient times. In Europe the eel is eaten in various stages of its life cycle in different parts of Europe. The glass eels are primarily eaten fried or cooked in France, Spain, Italy, and the United Kingdom, where they enter European waters in droves via the Atlantic. Yellow

and silver eels are eaten smoked or fried all over Europe, but primarily in Scandinavia and Germany.

Efforts to breed eels in captivity have so far proved unsuccessful; the larvae only survive for a few weeks (Freyhof & Kottelat 2010). Because of this, all farmed eel is reliant on wild stocks of glass eels. A 2022 report by the International Council for the Exploration of the Sea (ICES) estimates that glass eel recruitment in the North Sea is down to about 0.5% of 1960's levels and yellow eel recruitment is down to 19% (ICES 2022a, p. 1). The European eel has been listed as critically endangered on the International Union for the Conservation of Nature (IUCN) Red list since 2008 (Freyhof & Kottelat 2010). Despite being listed by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) as untradeable outside of the EU since 2009, there is still a huge market for European eel in Asia and it is thought that around 350 million glass eels are smuggled there annually to sustain aquaculture, trade, and consumption (Davis 2018).

1.2.2 EU and the eel

Eel as a species features in many of the EU's more general regulations, for example the 1992 EU Habitats Directive and the 2000 Water Framework Directive (Regulation 1100/2007, section 5). In March 2003, the Commission hosted a workshop on eel management where scientists, the eel fishing sector, and member states were invited. This resulted in a communication calling for the development of an action plan concerning eel management to tackle the decline of the eel population, which was adopted after debate in the Council as well as a second workshop in September 2004 (COM (2005) 0472, section 2.1). In October 2005, a proposal for a regulation establishing measures for the recovery of the European eel was presented, which was accepted and adopted in September 2007 as the Eel Regulation Framework (Regulation 1100/2007, section 2). The regulation called for the member states to establish individual management plans at river basin level and communicate these to the Commission by the end of 2008 or face default measures. Nineteen states have so far submitted plans, together with a transboundary plan submitted by Spain and Portugal. Six states have also been exempted from creating plans (Commission evaluation 2020, p. 11-12).

The ERF has been evaluated several times. The EU itself collects progress reports from the concerned member states every three years initially and then every six years, which are evaluated in conjunction with current scientific findings and stakeholder input. The EU published its latest evaluation report in 2020, in 2019 an extensive report was conducted by a team of consultancy firms, and ICES has been asked by the EU to evaluate the member states' progress reports on two occasions, in 2013 and 2022 (Huntington et al. 2019, p. 2., ICES 2022b).

These documents will be used as material for this study.

2 Previous research

The management of eel and the Eel Regulation Framework have been thoroughly examined previously, with a primary focus on economics and efficiency but not with specific regards to legitimacy. Legitimacy, on the other hand, has been explored in several ways in a biodiversity and conservation context, but not with eel as the primary subject. This leaves ample room for this study to close a gap in the existing literature, together with the use of posthumanism to view the issues from new perspectives.

2.1 Eel and eel management

Already 20 years ago, Eric Feunteun conducted a study of the causes behind the decline of European eel and how it was being handled. He found that the decline had several causes, some due to climate change while others were man-made – such as overfishing or obstructions in migratory waterways (Feunteun 2002, p. 578). He called for further local initiatives, combined with coordination at EU level, to make sure that the efforts made were successful (Feunteun 2002, p. 587-588). Many of the measures Feunteun called for in the paper, such as restoring habitats, controlling fishing activities, and reducing migratory obstacles as well as instating cohesive monitoring, are included as targets in the ERF.

Feunteun made an observation that is further developed by Henrik Svedäng and Lena Gipperth in their 2012 study of the Swedish national management plan produced as part of the ERF. Feunteun calls the success of restoration programs, and especially efforts such as re-stocking, “ambiguous”, because they have to be judged against their explicit aims (Feunteun 2002, p. 585). As efforts to sustain fishing activities they have proved successful, but as attempts to restore the eel population they have had no palpable effects. This ambiguity is expressed by Svedäng and Gipperth as well, in their assessment of the Swedish EMP. They criticise the EMP on not clearly prioritising between conserving the eel as a species or sustaining fishery, making uncertain estimates and assumptions, lacking transparency, and displaying an implementation deficit (Svedäng & Gipperth 2012, p. 806-807).

Some more recent studies have reached similar results regarding European conservation efforts as a whole. Hanna Nilsson and Jesper Stage assessed the overall economic efficiency of the ERF and found that its construction as a set of national EMPs rather than a EU-wide policy makes it inefficient and expensive

(Nilsson & Stage 2017, p. 13). A study published by Roman Lyach only this year concluded that current conservation efforts seem to have had no tangible effect on the wild eel population, at least not in the waters of the Czech Republic (Lyach 2022, p. 14).

2.2 Legitimacy and conservation

In 2008, Jozef Keulartz and Gilbert Leistra edited a volume called *Legitimacy in European Nature Conservation Policy*. The book includes several works on the processes surrounding EU conservation legislation in a number of states and concerning a wide range of wild species or protected areas. A study conducted by Keulartz and Leistra themselves together with Ewald Engelen focussed on geese wintering in the Netherlands, the process of establishing foraging areas and means of compensation that was acceptable to affected farmers, and the different rounds of top-down vs. bottom-up planning that were involved (Leistra et al. 2008, p. 25-28, 31-34).

Felix Rauschmayer and Vivien Behrens contributed a relevant study on the great cormorant and the EU project FRAP (Framework for Biodiversity Reconciliation Action Plans), a program centred on the conflict between species protection and fisheries – highlighting “a shift from species preservation to species management which aims at safeguarding a minimum viable population while preserving conflicting economic and cultural interests”. (Rauschmayer & Behrens 2008, p. 55-56)

Other studies from the book worth mentioning are for example Elizabeth Oughton and Jane Wheelock’s study of stakeholder entitlement towards natural resources and the intersection between social processes and the conservation of nature in the North York Moors (Oughton & Wheelock 2008, p. 159-161). Also Markus Leibenath’s chapter on the implementation of European initiatives in German areas and the transformation of legitimacy processes, for example from output to input or throughput legitimacy and challenges of multi-level governance is of interest (Leibenath 2008, p. 244-246).

While Keulartz and Leistra’s work is important, a lot has happened since 2008 in the area of legitimacy and conservation. Hence, a couple of later works are also worth mentioning. Linn Rabe’s 2017 dissertation on the relationship between participation and legitimacy draws many interesting conclusions on perceived legitimacy and the effects of multi-level governance on acceptance and implementation (Rabe 2017, pp. 245, 258). Olivier Boiral’s 2016 study on the strategies used by mining organisations when reporting on biodiversity impact to their stakeholders uses content analysis in a powerful way to detect legitimising rhetoric (Boiral 2016, p. 760, 764).

2.3 Positioning this thesis

This thesis will try to bring all of the works mentioned in this section together and continue to build onto them. As mentioned previously, eel and its management has been subject to many studies focussing primarily on economics and efficiency while studies focussing on legitimacy within biodiversity conservation has yet to tackle the eel. By taking the latest available material on eel management within the EU and examining it against well-established thoughts on legitimacy as well as some more novel perspectives on the interaction between societies and the environment, this thesis will hopefully be able to contribute with new insights into the role of and efforts made by the European community to manage and conserve the rapidly declining European eel.

3 Theoretical framework

This thesis will be employing two very different theoretical concepts and perspectives to create a theoretical framework to use as a base for the analysis – legitimacy theory and posthumanism. Posthumanism is a relatively new theory that has previously been utilised mostly within sociology, but using it in conjunction with legitimacy theory will hopefully bring new and useful understanding to issues of environmental governance.

3.1 Legitimacy

Legitimacy as a concept has a long history within political science. It goes all the way back to Thomas Hobbes's and John Locke's differing ideas on the transfer or creation of authority through the social contract, to Max Weber's descriptively defined legitimacy as an expression of the faith or belief of that political system's participants, and later John Rawls's normative concepts related to justice (Fabienne 2017).

Hogl et al. presents a typology of four different epistemological-methodological approaches within legitimacy studies. The two most common approaches are descriptive and normative. The descriptive approach focuses on the social construction of legitimacy with an empirical emphasis, the how and why of subjects accepting the authority addressed to them. The normative approach focuses on justification and "objective acceptability", whether and under what conditions a claim of authority such as a political system, regime, or institution is well founded. Hogl et al. add two more approaches, the strategic and the evaluative. The strategic approach views legitimacy in an instrumental way, as an operational resource that actors can extract from their environment and use to achieve their own goals. Finally, the evaluative approach usually wants to assess the normative acceptability of governance regimes, processes, or actors by measuring them against sets of normative standards collected from political theory (Hogl et al. 2012, p. 9-10). This thesis will be employing the evaluative approach to be able to effectively analyse the ERF.

In their work mentioned previously, Keulartz, Leistra and Engelen construct a theoretical framework based on various aspects such as rationality, multi-level governance, and, with regards to legitimacy, circumstances and types of legitimacy. The authors argue that legitimacy only arises under very specific circumstances – within modern states that value individual interests, where these

values are allowed to result in collective decision-making, where the decisions made are valid and reasonable in relation to the question at hand, and the individuals affected by the decisions recognise the validity and legitimacy of them based on either substantive or procedural legitimacy. Substantive sources of legitimacy refers to outside forces – religion, charisma, tradition, scientific expertise etc – while procedural legitimacy refers to the production of legitimacy through the decision-making process itself – input legitimacy (those affected by the decisions are involved in them), output legitimacy (the decisions made serve the needs and interests of those affected) and throughput legitimacy (emphasises the design of the decision-making process itself), which is the focus of their work (Engelen et al. 2008, p. 9-11).

The EU can be said to be a very unique and complex organisation in many aspects and it is especially true when discussing legitimacy. The complexity of its construction and purview has resulted in several issues regarding legitimacy. Beetham summarises the four most common points of contention as 1) the EU being a multi-level polity. The EU exercises power and creates policies at certain levels and enforces these at other levels, which can lead to the sovereignty and legitimacy of its member states being alternately both reinforced and compromised when expectations and commitments going bottom-up and top-down clash at the state level. 2) the institutions of the EU are simultaneously inter-governmental and supranational, which raises issues concerning both authorisation and accountability with regards to legislative processes. 3) as well as being multi-level, the EU is also “multi-participatory”. With primary regards to whether member states are part of the Eurozone or not, this impacts the legislative process as the members participate in the union in different ways. 4) the EU is a constant work in progress. The union is continuously changing and evolving as new states become members, new functions and areas of responsibility are added, and its institutions have to adapt to inside and outside influences. This makes it difficult to establish the definitive reach and authority of the union (Beetham 2013, p. 279-280).

3.1.1 Input

Keeping this complexity in mind, the focus will be kept on two of the aspects of procedural legitimacy mentioned in Keulartz and Leistra – input legitimacy and output legitimacy. In their chapter on the great cormorant, Rauschmayer and Behrens create a set of criteria for evaluating the legitimacy of a decision (Rauschmayer & Behrens 2008, p. 69). These have been adapted slightly in later works and this thesis will be employing the version presented by Monika Suéskeviécs (2010, p. 6) as dimensions of input legitimacy, i.e. what procedural aspects that are present and make the creation of the ERF legitimate:

Dimension	Includes...
<i>Legal compatibility</i>	...legal legitimacy: lawfulness, legality of a decision, process, etc. in a given context, considering relevant formal as well as informal rules
<i>Accountability</i>	...democratic control mechanisms that require a) defining responsibilities and those being responsible (accountability holdees); b) the responsiveness of accountability holdees towards other actors (accountability forum)
<i>Representation & inclusion</i>	...provision of equal opportunities to participate and influence decision-making for all relevant stakeholders Ideally, all relevant interests and needs should be included in the final decision or at least represented in the process
<i>Transparency</i>	...making decision-making process visible and clearly understandable to all relevant parties (insiders and outsiders)

These dimensions will be used to analyse documents produced in the input phase of the ERF and help look for expressions of legitimacy in the texts. *Legal compatibility* will mean that the ERF is compatible with existing legislation. *Accountability* means that it is clearly expressed which actor is responsible for what measure to be carried out. *Representation & inclusion* entails that all relevant interests are included or represented. Finally, *transparency* means that all processes behind the decisions made are visible and available to both insiders and outsiders.

3.1.2 Output

While dimensions for input legitimacy are fairly common practice, output legitimacy is a bit more ambiguous. Output legitimacy is often measured in effectiveness or performance (Hogl et al. 2012, p. 12. Mena & Palazzo 2012, p. 528). Hence, *effectiveness* will be included as one dimension of output legitimacy in this study, while the other has been borrowed and adapted from Mena and Palazzo's study on Multi-Stakeholder Initiatives (MSIs). In their criteria for output legitimacy, they included *coverage* (how many actors are bound by the

MSI in question), *efficacy* (how well the rules fit the problem they are supposed to address), and *enforcement* (ability to ensure that rules are followed and applied) (Mena & Palazzo 2012, p. 537). *Coverage* is unnecessary to include in this study as the ERF applies to all EU member states and *efficacy* has been replaced by effectiveness as the documents used for the output stage in this study will provide data on actual performance rather than estimated. *Enforcement* has been included and supplemented with *accountability*, to be able to discuss the responsibilities of actors both in terms of whether they are fulfilling them but also whether their actions involve consequences. As such, the dimensions of output legitimacy used in this study will be:

Dimension	Includes...
<i>Effectiveness</i>	... are the aims and targets stated in the legislation achieved? Are the measures taken having the desired results?
<i>Enforcement & accountability</i>	... are the defined actors fulfilling their defined responsibilities? Are there mechanisms in the legislation to handle non-compliance? Are these mechanisms enacted?

These dimensions have been included to capture two different aspects that may affect output legitimacy, which are 1) the properties of the legislation itself, and 2) the actions of the actors involved in implementing the legislation.

3.2 Posthumanism

Posthumanism is a relatively new theoretical perspective that has, as mentioned, previously been used mostly within sociology (Hobden 2014, p. 175). The core idea of the perspective is the critical rejection of the so-called species barrier - the division between the human and non-human - as well as the rejection of ideas of human exceptionalism that have been uncritically accepted for a very long time (Hobden 2014, pp. 175, 181). Complexity theory, sometimes used within posthumanism, challenges the idea of anthropocentrism by stressing that human systems and activities have always been “pursued within, together with and with impacts on non-human nature” (Hobden 2014, p. 177).

The prevalent anthropocentric worldview is evident in the instrumental way of viewing the rest of nature that many humans exhibit – as resources to be

exploited, with no inherent value. Cudworth and Hobden describe how this perspective is one of the driving forces behind climate change – the way humans consume and harm other species is causing what is now known as the sixth great extinction. Industrialised agricultural production and fisheries alone are annually responsible for the termination of 93-176 billion animals and fish (2017, p. 4). Cudworth and Hobden therefore stress the need to adopt posthumanist perspectives in the sense of viewing the world as “more-than-human”, i.e. acknowledging the embeddedness of several systems, both human and non-human, animate and inanimate (2017, p. 8).

Four “dimensions” of posthumanism will be used as part of the theoretical framework in this thesis. Two are directly based on posthumanist concepts. *Anthropocentrism* has already been mentioned and refers to the prioritisation of human needs relative to the survival of non-human forms of life (Pereira 2021, p. 31). It has generally been accepted that the age we currently live in can be named the Anthropocene, due to the significant impact humans are having on the planet (van den Berg 2019, p. 55). *Value* has also been mentioned already and is an important aspect in that affording non-human forms of life intrinsic or inherent value outside of the instrumental use humans might have for them is seen as crucial to moving beyond a human-centred way of life (Pereira 2021, p. 31).

The other two have been formulated with the aim of the study in mind, which is to analyse a policy with the management of a species as the main goal. Since eels could not represent themselves in the same manner as human stakeholders could while the ERF was being formulated, it should be reasonable to expect that appropriate authorities with expert knowledge on eel or with animal and environmental rights as a primary interest were consulted in the policy process. This dimension has been named *Representation*. The last dimension has been titled *Needs* and refers to the objective needs of the eel as a species that need to be met in order for it to survive and thrive. These should also, reasonably, have been included in a regulation concerned with eel management. To summarise, the four dimensions of posthumanism that will be employed in the analysis are:

Dimension	Includes...
<i>Anthropocentrism</i>	... a) expressions of an anthropocentric perspective (anthropocentrism in practice), b) expressions of anthropocentric awareness (anthropocentrism being avoided or rejected)
<i>Value</i>	... the species being afforded inherent value irrelevant of human need or use, the species deemed objectively important
<i>Representation</i>	... representatives from the scientific community or relevant organisations are able/asked to present relevant information and/or advocate for the species
<i>Needs</i>	... the objective needs of the species are considered and measures taken to fulfil them

This framework will be used to critically examine the ERF and how the eel as a non-human but animate and sentient species is discussed and considered.

3.3 Practical use of the framework

The two parts of the framework, the legitimacy and the posthumanist, will be used simultaneously but not in combination. The initial idea was to attempt to create a uniform framework, but this notion was quickly discarded. The two theoretical perspectives are far too different and combining them would sacrifice their integrity and usefulness. At the same time, posthumanism does not supply the necessary tools to evaluate the legitimate soundness of the ERF, while legitimacy theory lacks the instruments to assess the ERF's abilities to take the needs of all relevant stakeholders into account, both human and non-human. When legislation is made with regards to biodiversity and species management, the species in question must be given due consideration in all stages of the policy process if the legislation is to have the desired effects. Therefore, it should be reasonable to

assume that the value and needs of the species, advocated for by relevant individuals able to participate in the policy process, are included to the best of the lawmaker's abilities to ensure full inclusion and optimal effectiveness.

Juxtaposing the aspects of posthumanist and legitimacy theory also shines a light on several dilemmas that are at the core of environmental governance and policy – the balance between what is best for humans vs. what is best for the environment in the short or long term, where states should draw the line between protecting the interests of its citizens vs. protecting its territory and natural resources, as well as how to create legislation that protects the eel as a species vs. the people and businesses reliant on the continued use of eel.

4 Method and data

In this section the method of this thesis is first positioned and motivated based on previous research in the field. Thereafter, the specific method and design of this study will be explained, together with a discussion of material selection.

4.1 Previous research

The subject matter of legitimacy and biodiversity have already been researched extensively and firmly belong to the realm of qualitative methods. Two specific methods appear to be the most employed by researchers in the field – interview studies and document analysis. Interviews are by far the most frequently used method, used by for example Oughton and Wheelock as well as Rauschmayer and Behrens. Rabe combines both content analysis and interviews, using the first to help determine the people of interest for the second. Boiral on the other hand is a good example of the usefulness and efficiency of content analysis.

While interviewing always is an interesting method to consider and feel is a subject many people seem happy to discuss, various factors make document analysis a more suitable method to employ in this study. The fact that the main focus of this study is a formal document and that there should be an existing paper trail connected to it available for analysis is important to consider. The aspect of the thesis' theoretical framework is also in favour of document analysis rather than interviews, as documents and data that have been produced independently of the thesis are more likely to contain and display the theoretical dimensions in a representative way. The fact that the ERF was adopted in 2007 is also important to consider – while the documents produced at that time remain unchanged, the people involved in the immediate creation and implementation of it might no longer be available to interview or their perceptions may have been influenced by subsequent developments.

4.2 Method and research design

Document analysis is a very extensive method and perhaps more focussed on the documents themselves than the aim of this study requires. As Bowen summarises, document analysis can be a very efficient and unobtrusive method, but can also supply insufficient detail (2009, pp. 31-32). Document analysis includes elements

of content analysis and vice versa, and so it seems natural to use this as a substitute be able to analyse the material more productively (Bowen 2009, p. 32. Schreier 2012, p. 37).

Qualitative content analysis (QCA) allows the researcher to focus on very specific, selected aspects when processing the chosen material (Schreier 2012, p. 3). Content analysis as a method is centred around breaking down a chosen text into smaller pieces that can be categorised. The categorisation can either be based on inductively formulated categories, or, as in the case of this study, deductive concept-based categories. This approach suits this thesis very well, as it allows the processing of the selected material to focus on the dimensions gathered from the theoretical framework. The act of breaking down and sorting the text is commonly referred to as coding, while the categories used to do so are usually assembled into a system called a coding frame.

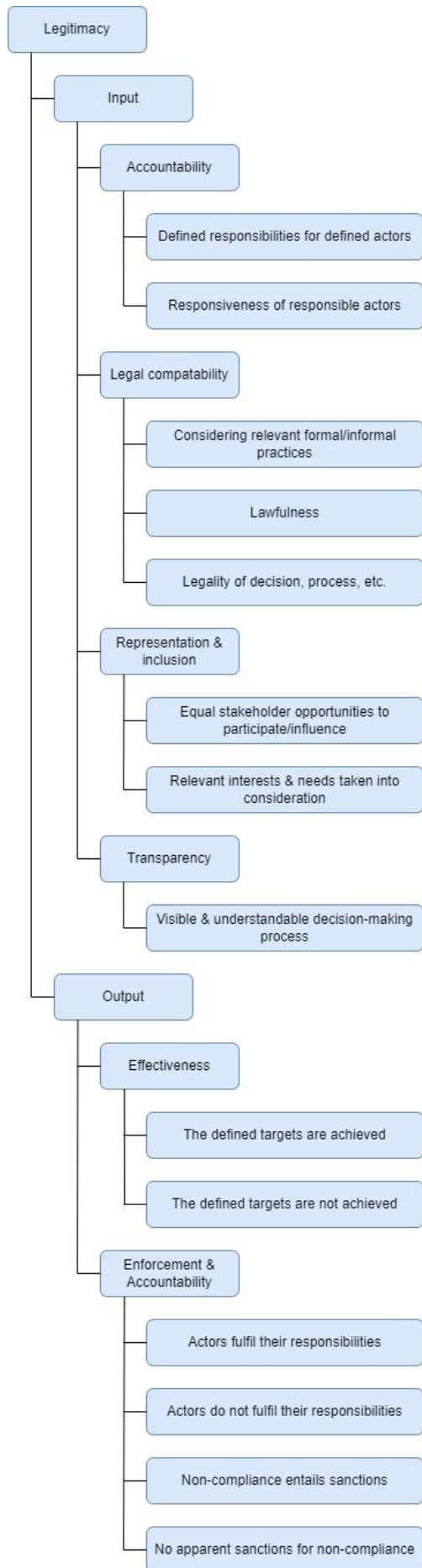
At the most basic level coding can be done with paper and highlighters. Since this study aims to analyse multiple documents, some of which are several hundred pages, the software NVivo will be used to assist in the coding process. NVivo is one of the most frequently used software packages for qualitative data analysis, its functions primarily facilitate document organisation and the manual coding process (Woolf & Silver 2018, p. 2).

QCA is a particularly systematic method. Once a research question has been formulated and the material has been selected, the steps are to 1) build a coding frame, 2) divide the material into units of coding, 3) try out the coding frame, 4) evaluate and modify the coding frame, and lastly 5) proceed with the main analysis (Schreier 2012, p. 6). Material selection and units of coding will be discussed later in this section, so instead the coding frame used in this study will be presented next.

4.2.1 Coding frame

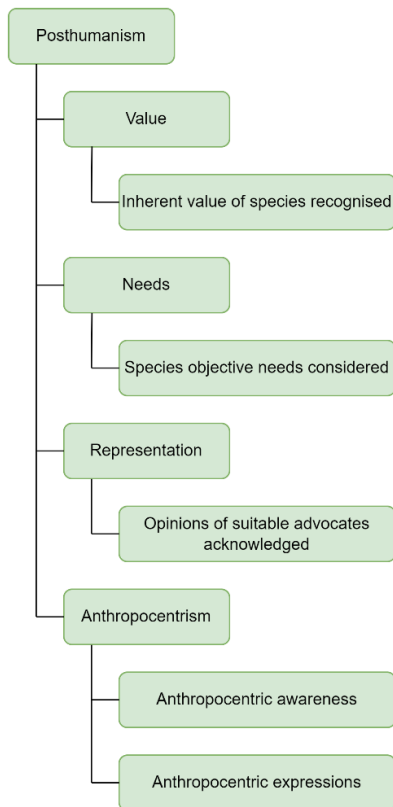
The coding frame has primarily been deductively formulated by drawing upon the theoretical framework and then modified slightly to fit the task at hand, which is a common course of action according to Schreier (2012, p. 89).

The first part of the coding frame concerns legitimacy. The main dimensions of the coding frame, i.e. the input dimensions of *Accountability*, *Legal compatibility*, *Representation & inclusion*, and *Transparency* as well as the output dimensions of *Effectiveness* and *Enforcement & Accountability* are based on concepts presented in the theoretical framework. The subcategories have been developed to allow for the actual coding and are expressions of the dimensions that may be found in the documents. All of the codes apart from the negatory codes in the output dimension (*the defined targets are not achieved*, *actors do not fulfil their responsibilities*, and *no apparent sanctions for non-compliance*) were



formulated before trying out the coding frame. While testing the coding frame it became apparent that the input dimensions, that are more concerned with documents produced before implementation of the policy, such as the ERF itself, are more focussed on the characteristics or attributes of the policy. Meanwhile, the output dimensions are more concerned with performance and so it became apparent that by only checking for if the targets are achieved, if the actors are fulfilling their responsibilities, and if non-compliance entails sanctions, there is a very real risk of missing important information provided by evaluations executed after implementation. Therefore, negatory counterparts were added for the output dimension's subcategories.

The second part of the coding frame concerns the posthumanist part of the theoretical framework. The posthumanist dimensions follow the logic of the legitimacy input dimensions in that they are expected to be characteristics that may be present rather than actions that can be realised or not. The first three dimensions (*Value*, *Needs*, and *Representation*) were created from adapting theoretical concepts and trying to frame what aspects would be reasonable and plausible to expect to be present. The last dimension, *Anthropocentrism*, was added after the initial test-run of the coding frame. It has theoretical grounds, which is discussed in the previous section, but it became apparent that it was needed as a code after certain documents referred to for example “anthropogenic effects” and so forth, which displays an awareness of human-centred mindset and conduct. The two subcategories, *Anthropocentric awareness* and *Anthropocentric expressions*, were created to capture sequences of text that exhibit a cautionary awareness of



anthropocentrism (i.e. recognises it may be harmful) versus sequences where anthropocentrism is expressed uncritically (i.e. obvious examples of actions and thinking that prioritises humanity in an unconcerned way).

Both parts of the coding frame were used simultaneously when applied to the actual material. The test-run was performed on three documents that are part of the material used in the study, which were re-coded later in the coding process after the coding frame had been modified and some other documents had been coded. The actual coding was performed over a period of three weeks and at certain checkpoints documents that had already been coded were processed again to maintain consistency through the whole process.

4.3 Material

When using QCA, there are three types of units that are important to the process: units of analysis, units of coding, and context units (Schreier 2012, p. 129).

Units of analysis are the cases of the study. In this study, this refers to the separate documents that have been selected for analysis. The documents have been selected to represent both the input and output phases of the process and the choice was made to only use documents produced within an EU context. The documents that represent the input have all been produced by the EU itself, while the output documents have been produced by the EU or at the specific request of the EU. This choice was also made to enable consistency and coherence between the documents themselves – they all conform to the same levels of formality (they are all official documents acknowledged by the EU), enjoy the same availability and accessibility (they are public without need for request), and within the same time frame. Because of this, the documents can all be placed on a chronological timeline and most of them are available through EU databases. The following documents have been chosen as units of analysis:

	Year	Title	Author	Description
A	2003	Development of a Community Action Plan for the management of European Eel	EU Commission	Communication from Commission to Council reporting from a workshop on the management of European eel
B	2006	Report on the proposal for a Council regulation establishing measures for the recovery of the stock of European eel	Albert Jan Maat	Report on the proposal written by an appointed rapporteur - includes comments, justifications, and explanatory statement
C	2007	Council Regulation (EC) No 1100/2007	EU Council	The main Eel Regulation Framework document
D	2019	Evaluation of the Eel Regulation. Final report	Poseidon/F&S/Eurofish/ Economisti Associati/Coffey	Evaluation of the regulation provided by consultancy firms at EU's request
E	2020	Evaluation of Council Regulation (EC) No 1100/2007	EU Commission	Evaluation of the regulation provided by the Commission
F	2022	EU request for technical evaluation of the Eel Management Plan progress reports	ICES	Evaluation of the national management plans provided by ICES at EU's request

Documents A, B, and C are the input documents, produced before the implementation of the ERF. They are all produced by the EU itself, either by the Commission, Parliament, or the Council. Document A is the starting point of the ERF, the report produced after the Commission hosted a workshop on eel management in 2003. It is 14 pages and outlines the need for management measures based on background information and evaluations, and includes proposed targets and emergency actions. Document B is written by Albert Jan Maat, Dutch parliamentarian appointed as rapporteur on the legislation by the responsible parliamentary committee. It is 20 pages and includes amendments to the proposed legislation made by Parliament, justifications, and an explanatory statement. Document C is the ERF itself and so constitutes the end of the input phase. It is seven pages and contains the 13 articles that constitute the regulation.

Documents D, E, and F are the output documents. Document D is an external evaluation, produced by a number of consultancy firms that specialise in fisheries, economic policies, and geographical data. It is 86 pages, with an addition of 149 pages of appendices containing stakeholder consultations and case study material. Document E is the latest evaluation produced by the EU itself, which incorporates earlier progress reports and evaluations. The main part is 51 pages, but several appendices outline information such as stakeholder consultations and Commission decisions. Document F was produced by ICES and evaluates the latest progress reports supplied by the member states. It is eight pages and includes suggestions by ICES on further actions.

The chosen documents have been included based on the criteria outlined above that make them suitable units of analysis, as well as their assessed relevance to the aims of the study and the dimensions of the theoretical framework. Information from other documents such as EU press releases are included in the analysis to provide contextual knowledge. One note of importance is that the United Kingdom is mentioned as a member state by the documents and by extension this thesis when discussing those documents, as all of them except the 2022 ICES evaluation were produced before the UK completely left the EU at the end of 2020.

The second unit of importance when performing QCA are units of coding, which are “those parts of the units of analysis that can be interpreted in a meaningful way” (Schreier 2012, p. 131). This means the segments of the chosen documents that are of relevance to the analysis. The documents concerning the input phase, i.e. A, B, and C will be analysed in their entirety. They are not of problematic lengths and all parts of them may contain expressions of the theoretical dimensions. The output documents – D, E, and F – will be segmented and only chosen parts utilised. To make the analysis process smoother and the results more relevant, parts of the evaluation reports that concern for example the methodology used to produce the evaluation or longer appendices will not be coded.

The third important unit according to Schreier are context units (2012, p. 133). These are the segments that may be included to anchor the coded units of coding to a context. Contextual information to aid the analysis will be provided both by the documents themselves as well as other sources, as mentioned previously.

4.4 Limitations and observations

Schreier writes that content analysis is best performed in teams to 1) identify relevant meaning in the material by approaching from different angles and 2) to increase consistency through several people processing the same material and reaching the same conclusions (2012, p. 19). The issue of this thesis being a single-person job has been considered at the different stages of planning and execution. Schreier suggests re-coding as a strategy to overcome the limitations of a single researcher approaching the material (2012, p. 198-199). This strategy has been incorporated in the work process, as mentioned previously, by re-code checkpoints where parts of the material have been processed again after initial coding. Personally, I feel that there can be positives to single-person coding as well. The consistency that comes with one person going through all of the material and coding it in a uniform way means that all of the material has been processed in an equal way, which is harder to achieve if the material is divided and coded by more than one individual. As long as the appropriate allowances in time and amount of material are made, content analysis is certainly manageable for one researcher to undertake.

According to Schreier there is some discussion and controversy about what content analysis can and cannot do, which could pose as a limitation (2012, p. 4). Some researchers firmly argue that QCA can only describe the material at hand, while others believe that those descriptions can then be used to draw wider conclusions. Having considered this, the decision was made to use QCA based on two notions. First, the nature of the material is vital. Schreier herself compares interview studies (i.e. where the material has been generated for that specific study) where it may be enough to describe and let the material speak for itself, versus company brochures (i.e. material that has been externally created and then collected for the study) where the study may want to use the brochures as steppingstones to wider conclusions and not just describe them per se. This thesis belongs to the second category, which Schreier concludes may need additional input to substantiate valid conclusions. The fact that the material of this study has not been generated but collected means that there is a context available to use and relate to when analysing the particulars of the documents. The second notion is that the coding frame used is concept-driven and has primarily been deductively formulated. Had the coding frame been inductive, the material could of course only have been analysed in relation to itself. Using a coding frame based on a

theoretical framework provides a gateway between the material and the outside world, as well as a solid foundation for an analysis that is able to draw wider conclusions about the expressions of legitimacy and posthumanism found in the material rather than simply about the material itself.

Finally, a remark must be made on the availability of material for use in this study. While the material that has been analysed was chosen based on the mentioned criteria and suitable for use in the study, it was difficult to acquire. After scouring EU databases and other sources, a personal reflection is that the EU as an institution is neither particularly transparent nor inclusive with regards to procuring relevant information. Some documents can be found by searching for specific document codes in certain databases, some documents have to be requested which requires both information about that specific document and that approval is granted, information on which parties were present at certain meetings is not always public, and documents submitted by the member states are not always cohesively formulated, named, or available in all languages. Some of these issues of course have natural explanations and reasons behind them, but added together constitutes palpable accessibility issues.

5 Analysis

The analysis focusses on the findings of the coding based on the three different parts of the theoretical framework – input, output, and posthumanism – before going deeper into a thematic analysis in the Discussion.

5.1 Input dimensions

The input phase of the ERF relies heavily on the dimensions of legal compatibility as well as accountability. First, the dimension of legal compatibility is present through the conformity to existing regulations, which are mentioned in both the framework document as well as the 2003 workshop report. The ERF has been created to complement and strengthen already existing protection of the eel, which supplies a firm legal ground for the ERF in that it is a continuation of already established policies. The workshop report mentions how some formulations may need to be changed in existing legislation, for example removing “during their marine life” from the EU’s definition of “living aquatic resources” to better afford catadromous species such as the eel (that live in fresh water but spawn at sea) better protection (COM (2003) 573, p. 6). Apart from that, the ERF itself sets out that measures taken under it should conform to the EU’s 1992 Habitats Directive on the conservation of fauna and flora as well as the Water Framework Directive of 2000 (Regulation 1100/2007, section 5).

Present during the input phase is also a tangible consideration of relevant processes and practices, multiple references are made to requirements and steps taken to create this kind of legislation within the established practices of the EU (COM (2003) 573 p. 13-14. Maat 2006, p. 5. Regulation 1100/2007, section 1, 2, 5, 9, 10, 16). Despite this it must be noted that many of the amendments made by the Parliament in Maat’s parliamentary report are not part of the final legislation, which would mean that the ERF went through further rounds of both Commission and Parliament scrutiny after the report (Maat 2006, p. 5). In press releases concerning Council meetings in April and May of 2007, the Council instructs the Permanent Representatives Committee to “find a solution to the outstanding issues” and “[reach] political agreement” regarding the ERF proposal (Council Press Release 2007a, Council Press Release 2007b). In June it is reported that political agreement has been reached based on “a compromise drawn up by the Presidency” (Council Press Release 2007c). The ERF was then adopted in September that year, and the mentioned disagreements may explain the inconsistencies between the preparatory documents and the final framework. The

framework as well as the workshop report also emphasises ways to handle the wider implications of the ERF – third parties that may be affected, transboundary coordination both within and outside the EU, adhering to the United Nations Convention on the Law of the Sea (UNCLOS) which makes specific mention of catadromous species and so on (COM (2003) 573, p. 6-7. Regulation 1100/2007, section 10, 11, article 6.2). The ERF strays from legal practices though in one key way, highlighted by Maat in his parliamentary report. “Although inland fishing does not officially fall under the European common fisheries policy, the common problem which exists in numerous Member States necessitates a common approach. Without one, it is very likely that it will prove impossible to conserve or restore eel stocks.” (Maat 2006, p. 18) While the sentiment expressed is applaudable and reasonable, and the fact that the EU’s member states have chosen to create and implement the ERF lends it legitimacy, it is problematic that the ERF somewhat lacks a foundation in established EU legislation despite extensive adherence otherwise to relevant rules and procedure, as the limitation of fishing activities both within and outside of member states is a big part of the ERF itself.

Second, accountability is somewhat ambiguously present in the ERF and its preparatory documents. Accountability as an input dimension according to the theoretical framework can be expressed through 1) defined responsibilities for defined actors, and 2) a responsiveness of the defined actors towards other relevant actors. The second is amply formulated in Maat’s parliamentary report in that:

“This twofold character of eel recovery (a large-scale problem occurring in small-scale waters) makes it necessary to divide roles between different tiers of government and between authorities and interested parties. On the one hand the central authority (EU) will have to set the conditions for sustainable management, and then impose them on lower tiers of government (the national level), which in turn can pass them on in the form of conditions for the fishing plans of regional fisheries managers. On the other hand, local management must be based on information concerning the local situation, and this information will have to be used by the (higher) authorities to monitor and evaluate the management measures implemented. Satisfactory cooperation between the fishing industry, other interested parties and the authorities is crucial here.” (2006, p. 19)

While the importance of cooperation and responsiveness is well-formulated, the above is also an example of the rather vague manner in which responsibilities are defined throughout the documents. Despite the expressed awareness of the need for measures to be implemented on several levels of government as well as how crucial it is that these are cohesive and coordinated, the ERF itself only defines responsibilities for the member states and the Commission and Council. Some aspects are clearly stipulated, for example the Framework contains several specified actions that must be carried out, primarily by the member states, with regards to formal processes, such as the required content of the national eel management plans (EMPs), when they should be submitted, suggested measures to include and so on (Regulation 1100/2007 article 2, 4). The ERF also makes

demands of re-stocking measures, progress reports, the establishment of monitoring programs, some stipulations with regards to fisheries etc (Regulation 1100/2007 section 13, 14, article 7, 9, 11). Similarly, the responsibilities defined for the Commission are mainly centred on procedural activities such as monitoring and reporting (Regulation 1100/2007 section 15, article 7.5, 7.6, 7.7, 9.2, 9.3). In line with Feunteun's recommendations, Maat's parliamentary report recognises the need for local measures, as does the 2003 workshop report which states that "a large number of local measures need to be taken in order to improve growth" and that the main challenge is to "design a management system that ensures that the local measures produce results in a consistent way across the river basins, Member States, and adjacent countries." (Feunteun 2002, p. 587-588. Maat 2006, p. 19. COM (2003) 573, p. 7-9) The report also makes suggestions of measures and targets that could be included. Despite this there are only brief mentions in the ERF of measures that may be included in the EMPs, but no emphasis is placed on local action and as mentioned, the framework document only defines responsibilities at the state and EU level (Regulation 1100/2007 article 2.8). This is an example of the jurisdictional issues highlighted by Beetham – could or should the EU define responsibilities below the national level? (2013, p. 279-280) Leaving decisions of local measures to the member states may be vital for the acceptance and recognition of this kind of legislation by the EU's members and there are prevailing assumptions as well that efforts that are fine tuned to local conditions should enjoy more acceptance and effectiveness. At the same time, this also means that vital parts of the legislation, i.e. which actual measures are to be employed where and when, are left undecided and undefined. While this may offer the legislation adaptability, it may also make it flat and ineffective.

Transparency as well as representation and inclusion are not very present in the ERF and its preparatory documents. Transparency is the most problematic of the dimensions, which is in keeping with Svedäng and Gipperth's conclusions (2012, p. 806-807). Apart from planned opportunities for stakeholders to engage with representatives, much of the decision- and law-making processes within the EU take place behind closed doors (which includes the widespread lobbying practices (European Parliament)). For the transparency and legitimacy of the policy process it is vital that all stakeholders should have equal opportunities to participate open to them. While information regarding legislative procedures are somewhat available through the EU's databases, far from all documentation is published and these resources may not be available to all affected by the legislation in question. An example of the lack of transparency are the previously mentioned press releases regarding the Council's meetings in 2007, published by the Council itself. While they allude to issues and political disagreement, as well as a final agreement and formal compromise, there is no mention of what the actual problem was, between what parties it occurred, or even what the agreed upon solution entails. The previously discussed lack of defined responsibilities for defined actors is also problematic from a transparency point of view, as it interferes with accountability. It makes it harder for those affected by the

legislation and its implementation to lodge complaints or receive reparations from relevant authorities. In 2010, just three years after the ERF was implemented, the office of the European Ombudsman hosted a seminar together with Transparency International. In the opening remarks, it was noted that of all of the complaints examined by the Ombudsman in 2009, 36% concerned lack of transparency in different ways (European Ombudsman 2010). Transparency is something that the EU has struggled with and continues to work on, which is apparent in the ERF. The 2003 workshop report makes references to the urgent need for conservation measures of the eel having been “identified by scientists, managers, and even by the public at large” as well as “recent consultations with stakeholders, managers and scientists” – but no information regarding how or by whom (COM (2003) 573 pp. 3, 10). There is also mention of the 20-25 000 people involved in eel fishing in Europe, the need for local measures as well as how the choice and implementation of these measures should remain local, but nothing is stated with regards to how communication or support should be conveyed (COM (2003) 573 pp. 4, 7-8). The ERF does mention that the success of the proposed measures is dependent on “close cooperation and coherent action at Community, Member State and local and regional level as well as on information, consultation and involvement of the public sectors involved” but nothing concrete on how this should be achieved (Regulation 1100/2007, section 6).

In a similar vein and related to lack of transparency is the dimension of representation and inclusion. The inclusion of relevant interests and the opportunity for stakeholders and others affected to engage is as mentioned present, evident by the previously mentioned workshop report references to “consultations with stakeholders, managers and scientists”. The explanatory memorandum to the ERF proposal of 2005 provides some more information, stating that:

“The Commission organised a Regional Workshop on eel management in March 2003 at which scientific advice concerning eel management was presented and was discussed among scientists, the eel fishing sector and Member States. [...] The Commission, scientific advisors, industry sectors and Member States could agree that the eel stock is at a very depleted level, that measures need to be taken to achieve this, and that the Commission should come forward with specific proposals covering recovery measures on both environmental and fisheries aspects. All sectors agreed that the approach of setting a management target at Community level while leaving Member States the freedom to decide the means to reach the target is a good one.” (COM (2005) 0472, section 2.1)

The memorandum also provides that “The Commission has obtained scientific advice from the International Council for the Exploration of the Sea and the European Inland Fisheries Advisory Committee.” (COM (2005) 0472, section 2.2) Except for naming ICES, EIFAC, and the member states, there is no information provided on exactly which stakeholders were included or to what extent, which makes it hard to assess which interests have been taken into consideration and exactly which stakeholders have been able to participate in the process. For

example, the eel fishing sector is also called the industry sector, which may mean that the interests of all those who fish eel have not been considered. The workshop report itself clearly states that “Data on catches are not very reliable, but some unofficial estimates reach 30,000 tonnes per annum in the 1990s, with a first-sale value of ca. € 200 million. An estimated 20,000 to 25,000 people are involved in eel fishing, at least part-time. Many of these are non- professional fishers.” (COM (2003) 573 p. 4) There are some considerations made for the fishermen affected, Maat’s parliamentary report makes amendments to the proposed periods of fishing closure to make it more reasonable and the workshop report concludes that “the Commission will consider proposing financial support for the fishermen concerned, either for retraining to leave the sector or else redirect their activities to other ends” (2006, p. 8. COM (2003) 573 p. 10).

An indication as to who has been consulted may be gathered from other documents. A report from a 2006 meeting of a subgroup of the Scientific, Technical and Economic Committee for Fisheries on recommendations of measures to be incorporated in the EMPs, lists 19 experts from either universities or governmental agencies as participants (SEC (2007) 475 Appendix). The 2019 ERF evaluation (used in the output phase of this study) lists several stakeholders deemed relevant to evaluate the Framework (Huntington et al. 2019, p. 109). These are primarily the relevant governmental agencies of the member states, but also some research bodies, fishing associations, the fishing industry, and a few NGOs. To what extent these lists overlap with the stakeholders actually involved in the input phase is impossible to say.

5.2 Output dimensions

Both of the output dimensions, effectiveness as well as enforcement and accountability, are ambiguously present in the documents though the emphasis is towards a lack of either. Effectiveness, whether the defined targets are achieved or not, shows that none of the targets are completely achieved. All three of the documents – the 2019 external evaluation, the 2020 EU evaluation, and the 2022 ICES evaluation – agree that the 40% escapement target defined in the ERF which entails that the number of silver eels that are available to spawn should reach 40% of what it would have been if no anthropogenic activities has impacted the stock, has not been achieved in 14 member states and only fully or partially in five (Huntington et al. 2019, p. 4. Commission evaluation 2020, p. 17. ICES 2022b, p. 1-2). The eel stock has not recovered and still remains in critical condition according to ICES, non-fisheries related mortality has not been reduced as significantly as expected, and the targets established in the EMPs for levels of restocking have only been met in six of them (ICES 2022b, p. 1-2. Huntington et al. 2019, p. 79). The targets for reporting and monitoring are not achieved either, as the member states continue to completely or partially not supply the required data or progress reports stipulated in the ERF (ICES 2022b, p. 3. Commission

evaluation 2020, p.15-16) . The 2019 external evaluation provides an interesting positive take on the failures to achieve the different established targets. It maintains that since the targets of the ERF have not been achieved and the eel stocks have not recovered, this indicates that the ERF is still very relevant and can help provide further improvements to eel conservation efforts (Huntington et al. 2019, p. 4).

There is some uncertainty as to when the targets should be reached, the EMPs were required to involve a time frame but these are supposed to be long term (Regulation 1100/2007 article 2.9, 2.4). The 2019 evaluation offers that “significant signs of recovery will take 2-3 eel generations (i.e. at least 10-20 years depending on the region) to emerge”, which would be just outside of the evaluations scope (implementation of the EMPs should have been begun by 1 July 2009 at the latest as stipulated by the ERF) (Huntington et al. 2019, p. 18, Regulation 1100/2007 article 5.2). The recovery may take even longer to emerge, as the 2022 ICES evaluation made the assessment that while the escapement targets were achieved in 16 eel management units (EMUs) in the first year of reporting, that has gone down to only 9 as of this year of a total of 84 EMUs (ICES 2022b, p. 5). EMUs are the units or areas covered by the EMPs, which can range from the whole member state being one unit down to division by administrative regions or individual river basins. Further, the ICES evaluation supplies that escapement was only consistently increasing in one of the EMUs and while overall mortality has decreased in 59% of EMUs since the first year of reporting, it has also increased in 29% of them (ICES 2022b, pp. 5, 1). If the targets are reached in such a low number of EMUs, the required period of recovery is continuously pushed back and the conservation measures may not provide results until many decades ahead which further decreases the ERF’s effectiveness.

Part of the lack of effectiveness is that the responsibilities defined in the ERF are continuously not fulfilled. To start with, only 19 member states have submitted EMPs so far, and these are deemed to “vary in quality and fitness for purpose” according to the 2019 evaluation (Huntington et al. 2019, p. 6). Six member states have been exempted due to having no waters within their territory considered to be natural eel habitats (Hungary, Romania, Cyprus, Malta, Austria, and Slovakia). Three member states – Croatia, Slovenia, and Bulgaria have simply failed to supply EMPs, as they consider their eel catches to be minimal. They must instead adhere to certain stipulations provided by the ERF, mainly reducing eel fishing efforts or catches by 50% (Commission evaluation 2020, p. 12). This is one of the few instances where non-compliance entails sanctions or consequences, as the ERF sets out that conservation efforts should be achieved sustainably and with long term targets (Regulation 1100/2007, article 2.4) . Failure to fulfil responsibilities is not considered punishable. As already mentioned, there are widespread issues with reaching established escapement targets or re-stocking targets, and monitoring and reporting requirements are consistently not satisfied. Efforts related to being able to trace all eel from “net to plate” have not been fully

implemented either and constitutes a key issue, both regarding eel caught for consumption as well as glass eel caught for re-stocking or aquaculture (Huntington et al. 2019, p. 4) Regarding management measures, ICES found that member states had reported a total of 1019 in 2021:

“Measures related to commercial fisheries, recreational fisheries, and hydropower and obstacles were the most abundant accounting for about 63% of the measures reported across all EMUs. Across measures, 56% are reported fully implemented and 19% as partially implemented, while about 8% of the measures were not implemented or were stopped. It is often not clear to what extent these measures are interlinked and mutually supportive. A large proportion of measures related to fisheries (commercial and recreational) were fully implemented while more than half of those related to hydropower and obstacles were either only partially implemented or not implemented.” (2022b, p. 2)

Reduced fishing efforts or a reduction in eel catches by at least 50% is one of the major targets of the ERF. Despite this, fishing effort has only significantly declined in Sweden (90%), Italy and Denmark (around 50%), and Germany (25%) according to the 2019 evaluation. At the same time levels appear to have increased in some member states, for example the UK (135%) and Poland (180%) (Huntington et al. 2019, p. 78).

The output dimensions are all connected. No sanctions or consequences lead to widespread non-compliance and implementation failures, which means that effectiveness and target achievement suffer. This is despite a joint declaration being issued by the Council in December 2017 that member states were to step up their management actions, review ongoing efforts and more forcefully implement their EMPs as well as implement a total ban three months a year on all eel fishing in some waters from 2019 and onwards (Huntington et al. 2019, p. 6). In 2022 the Commission proposed extending this ban to six months of the year (Berkow 2022).

5.3 Posthumanist dimensions

A critical examination using a posthumanist perspective has revealed some shortcomings in the ERF. First, the results of the coding show that the eel is not afforded intrinsic value anywhere throughout the documents, nor in the framework itself, the preparatory documents or the evaluations. The second paragraph of the 2003 workshop report simply states that:

“Eels are exploited in most European countries and are involved in re-stocking and aquaculture practices. The European eel is therefore important not only as a natural asset but also as an economic resource for European fishermen and aquaculturists.” (COM (2003) 573, p. 3)

This sentiment is reiterated throughout the documents and is a clear example of the instrumental way in which humans often view nature according to Cudworth and Hobden – as resources to be exploited (2017, p. 4). The most the eel is afforded in the documents is by Maat stating that they are “an essential element in the natural habitat” (2006, p. 18). While it is acknowledged multiple times that the eel is a species on the brink of extinction, this is mostly expressed as negative for the want and need of humans to continually exploit it as a resource, not particularly as a violation against another living species and the natural world as a whole (COM (2003) 573, p. 5, COM (2005) 0472, section 5.2).

There is consideration of the objective needs of the eel present in the documents, but in a manner that is far from unreserved. There is some mention of providing better habitats and reducing water pollution (COM (2003) 573, p. 5. Regulation 1100/2007, article 2.8). The main need that is acknowledged and made efforts to improve upon is the eel’s ability to migrate up and down waterways as well as to and from the Sargasso sea (Maat 2006, p. 13, Commission evaluation 2020, p. 24). Migration is affected by fishing (as glass eels enter European waters, as silver eels leave European waters, and as eels in all life stages try to move through waterways) and human-made obstacles (mostly related to hydropower). As mentioned previously, the ERF and the EMPs put an emphasis on reducing fishing efforts, both commercial and recreational, while the evaluations agree that anthropogenic mortality outside of fishery has not declined as significantly as expected or needed (ICES 2022b, p. 1. Huntington et al. 2019, p. 55). The 2019 evaluation states that “Structural measures to make rivers passable and improve river habitats, together with other environmental measures have the potential to make the most profound, long-term impacts on eel stocks.” (Huntington et al. 2019, p. 4) It is important to keep in mind though that these measures are often very costly and resource-consuming, technologically difficult, and it may be problematic to decide who is responsible for implementing and financing them. For example, acting on one of the measures suggested in the ERF to temporarily switch off hydroelectric power turbines to allow eels safe passage - in the middle of an ongoing EU-wide energy crisis - may not be conducive to decreasing the conflicts of interest between humans and eels.

The advice of suitable advocates that has been incorporated is very one-sided, as the EU has collected information for and about the ERF almost exclusively from ICES, the International Council for the Exploration of the Sea. It is unclear what the relationship is between ICES and the EU, but apart from offering scientific advice for the preparatory and framework documents ICES has also been requested to assess and evaluate the ERF, the EMPs and the member states’ progress reports multiple times. For the sake of credibility and thoroughness it may be prudent to use a wider range of input. The 2019 evaluation provides this to some extent. It is performed by five organisations and firms that are not ICES and it makes references to several sources outside of ICES, even a couple of NGOs such as the Sustainable Eel Group and some national societies for nature

conservation. It is only possible to speculate what impact it might have had on the ERF if some parties acting primarily with the eel and environmental issues in mind had been able to weigh in together with the scientists, industry representatives, and member states referenced in the 2005 explanatory memorandum.

The three other dimensions – value, objective needs, and opinions of suitable advocates – as well as their absence can all be related to an anthropocentric mindset. In some instances this mindset is very explicitly expressed and while it is not unexpected, it is occasionally alarming. As already mentioned, it is very clear that the eel is only afforded protection and conservation efforts due to its instrumental value. Many sentiments expressed in the documents show how entrenched the concept of humanity's right to use nature as it sees fit is. The 2003 workshop report estimated that eel aquaculture at that time produced in excess of 10 000 tonnes annually (COM (2003) 573, p. 4). As it is still not possible to spawn eel in captivity, aquaculture exploits wild glass eel stocks to sustain this production. Apart from direct consumption, cultured or newly captured eel is also the basis for re-stocking measures, which have been implemented to varying degrees since the 19th century. Re-stocking is the transfer of captured eel to selected waterways, often with the goal to aid commercial or recreational fishing of matured specimens. Re-stocking is not considered a successful conservation measure but is important to sustain fishing efforts (Feunteun 2002, p. 585).

The fact that the main purpose of the ERF is to manage the continued use of a species nearing extinction rather than promote that exploitation be discontinued as far as possible is significant. The workshop report reasons that habitat improvement to help sustain yellow eels and reduced fishing to enable silver eel escapement are the primary actions to take as there is no use in reducing glass eel fishing if they will not survive anyway (COM (2003) 573, p. 12). Similarly, the framework document itself stipulates that efforts to reduce non-fishing eel mortality, such as caused by hydropower or predators, do not need to be implemented if escapement targets can be achieved through other means (Regulation 1100/2007, article 2.10).

Despite these statements there is also a straightforward awareness present that humans are the main cause of the eel's decline. The use of eel is referred to as unsustainable multiple times, the documents speak of anthropogenic influences and anthropogenic mortality, but the awareness does not seem to matter much (COM (2003) 573, p. 5. Regulation 1100/2007, article 2.4. Commission evaluation 2020, p. 7). The anthropocentric view that the eel must be managed but can be continuously exploited takes precedence and disregards the eel's intrinsic value, puts human needs above the eel's, and only seek advice that can be used in conjunction with already established intentions.

6 Discussion

The discussion in this section will be based around three themes that were obtained during the analysis of the results of the coding and the theoretical dimensions of the previous section.

6.1 Actors and responsibilities

One of the problematic aspects of the ERF is the ill-defined responsibilities placed on too few defined actors. The only explicitly defined actors in the ERF are the member states and the EU, more specifically the European Commission and Council (Regulation 1100/2007, article 1.2, 2.1, 2.10, 7.7, 9.1). This constitutes a clear discrepancy between the ERF, the EU's own advice, and the general literature.

Feunteun makes specific recommendations that it is essential that the emphasis is placed on local measures to protect the eel, if measures are to have any effect (2002, p. 586-587). This is echoed by the 2003 workshop report produced by the EU itself, where they recognise the need for local measures, that these should be forceful and well-coordinated, and that they should be constructed based on established targets (COM (2003) 573, p. 7-8). The report goes on to say that due to the essentiality that measures be local, it is not appropriate these be managed at the EU-level but rather at state level which means that the EU relinquishes a great deal of control to the member states and to regional and local government (COM (2003) 573, p. 7). Because of this, the ERF is only able to make suggestions of management measures, it is not able to define specific actions to be taken nor which actors are responsible for them (Regulation 1100/2007, article 2.8). This can probably be attributed to Beetham's reasoning regarding the EU's structural issues as a multi-level polity. Law-making at the supreme EU-level and enforcement at the national level can have an ambiguous effect on member states' legitimacy in that it can be either compromised or reinforced depending on the state's position on the matter in hand (Beetham 2013, p. 279-280). There are also some signs that there is a disconnect between the EU and the member states regarding communication and interests going top-down in contrast to bottom-up. While rules and regulations set by the EU always make their way down to the local level through their compulsory nature, interests expressed at the local level are often filtered through the interests and opinions of the states. By giving the member states more agency in the framework to also decide exactly which measures are to be implemented and how, the ERF might be

trying to alleviate the issues that sometimes accompany enforcement at the local level of laws produced at the supranational level by forcing the member states to be receptive of local interests without the EU itself involving stakeholders below state level in the policy process. If measures can be fine-tuned to local interests, they may enjoy more acceptance and easier implementation. This is discussed at length by Rabe, who points to a shift in nature conservation policy towards more inclusive modes of governance that emphasise democratic deliberation and legitimisation of decisions through involvement of the affected actors (2017, p. 59-60).

Actor participation and democratic deliberation are naturally very desirable aspects, but at the same time this has severe consequences for the ERF itself in terms of accountability and transparency, as previously mentioned. The ERF and the EU hand over a great amount of control by doing this, as well as the ability to influence the actual outcome of the framework itself and associated management efforts. While all EMPs are implemented only after gaining approval by the EU, the continued inability of the member states to meet targets, successfully implement management measures, and alleviate the critical condition of the European eel shows that this division of power incapacitates the ERF. There are also no mechanisms in the ERF that enables the EU to impose sanctions or otherwise put pressure on member states for failure to comply with or make enough effort to achieve targets. The results are, as previously mentioned, alarming. Only a few states meet the general goal of 40% silver eel escapement or the goals of a minimum 50% reduction in fishing effort or catches, or the established re-stocking targets, and far from all proposed management efforts are completely and successfully implemented. At the same time, this is carried out in the name of the EU and the ERF, making it more difficult to pinpoint where there are shortcomings and exactly who is responsible. If the ERF had been able to define actors to a greater extent and the responsibilities of those actors, as well as how the actors were to relate to one another and communicate, the framework might have been better able to successfully implement the defined targets and proposed measures. If nothing else, this would have enabled greater accountability and the possibility to better identify where further efforts are needed.

This is exasperated by the additional lack of transparency displayed by the member states in their reporting and communication. As stipulated by the ERF, the member states were supposed to provide progress reports every three years three times, after which reporting frequency would reduce to every sixth year (Regulation 1100/2007, article 9.1). These progress reports should have included the best available estimates of silver eel escapement, level of fishing effort and catches as well as achieved reduction of these, level of mortality factors outside of fishing and achieved reduction of this, as well as the amount of eel less than 12 cm that have been caught and how these have been utilised. These reporting requirements have so far not been fulfilled by the member states. In the EU's 2020 evaluation, it states that in 2012 which was the first year of reporting, "22 of 81 [EMUs] did not report all biomass indicators, and 38 did not report all

mortality indicators” (Commission evaluation 2020, p. 15). This pattern was repeated for the 2015 reports, where only 14 out of 19 states with EMPs submitted reports and not all of these were as comprehensive as required (Commission evaluation 2020, p. 16). Of the 2018 reporting it is stated that “Of those countries with EMPs: LU and PT did not report at all; CZ, FI and IE provided a description but no data tables, and FR and PL did not provide all seven data tables. CZ, FI, EL, IE, LV, PL and ES reported after the deadline.” (Commission evaluation 2020, p. 16) Despite being outside of the required three tri-annual reports, the ICES made a data call which required member states to make reports again for 2021 to be able to provide assessment (ICES 2022b, p.4). Of 84 EMUs, only 34 provided data on mortality and 39 on escapement (ICES 2022b, p. 5). These deficiencies are not only another symptom of the member states’ failure of implementation and effort, but also make it more difficult to correctly assess management measures and make adjustments. This also makes it more difficult for the EU to provide further directions as well as fulfil its own responsibilities. The ERF states that the member states are supposed to provide reports on glass eel prices annually so that the Commission can provide reports to the Council on eel market prices (Regulation 1100/2007, article 7.5). If glass eel prices increase, the requirements for re-stocking may be lowered, which the Council is supposed to make decisions on based on the Commission’s report. The 2019 external evaluation stated that the Commission has been unable to make its own reports to the Council because no member states have provided these price reports since the first year, when only nine reports were received (Huntington et al. p. 40).

These inefficiencies display an anthropocentric disregard for the needs of the eel, as the inability of the actors to successfully implement management efforts affects the eel more than any other stakeholder. The anthropocentric mindset is visible through the manner in which the documents discuss the eel. The main target of the ERF is to preserve eel as a natural resource, to enable sustained human use (Regulation 1100/2007, section 4). Nowhere is any consideration made of the eel as a living, sentient being with a right to live. This disregard of the eel is displayed several times, most frequently in the ERF itself and the preparatory documents. The 2003 workshop report discusses the eel mainly as a natural asset and an economic resource (COM (2003) 573, p. 3). There is a habit in the documents of referencing the eel stock, rather than for example population. Stock has instrumental connotations as it is mainly used to refer to a supply or the availability of a product, or domesticated animals kept at farms for human use. Human needs clearly take precedence in the ERF, as there is no situation defined where the use of eel would be completely stopped, even when discussing the fact that the species is outside of safe biological limits. In contrast, there are some situations where concessions can be made for implementation of management measures. For example, if glass eel becomes too expensive for re-stocking efforts the targets may be reduced rather than support supplied to continue to enable re-stocking, and if escapement targets can be met without reducing mortality outside of fishing there is no need for measures to mitigate this (Regulation 1100/2008, section 13, article 2.10). This disconnected view of animals and the environment

is consistently anthropocentric and justifies humanity's custom of placing itself at the top of the figurative hierarchy, separate from everything else and with singularly instrumental intentions. This is harmful not only to the eel itself and its environment, but to humans as well. One posthumanist concept is the previously mentioned complexity theory, of which one key notion is that the world is made up of several different systems that co-exist. According to Hobden, these systems are known to be complex and adaptive, emerging from the interactions between their constituent units and have recognisable, but permeable, borders (2014 p. 178). These systems come in different shapes and sizes, they can be anything from a beehive to human economic systems or our planet's climate systems. Important to keep in mind though, according to French sociologist Edgar Morin, is that all systems are interconnected. Human and non-human systems do not exist independently, but overlap significantly (Hobden 2014, p. 180).

According to the 2019 external evaluation, the EU's Water Framework Directive considered using eel as an Ecological Quality Ratio indicator, as the eel accumulates contaminants within its muscles and would provide an accurate reflection of the contaminants within its habitat. The WFD also considered using it as an indicator of ecological status within its habitat. It became neither, as capturing samples to monitor chemical status was hindered by its protected status, and due to its decline in numbers it was not considered a good ecological indicator (Huntington et al. 2019, p. 44). According to Feunteun, eels used to represent more than 50% of the fish biomass in European waters and contributes to the functioning of a wide extent of continental and inland hydrosystems (2002, p. 576). A 2008 study in Scotland concluded that due to its multiple interactions with surrounding ecosystems it is considered a keystone species, based on its importance to balanced riverine ecology as it is both a predator and scavenger, as well as a prey species (May & Marshall 2008, p. 13). This is important to consider as it makes eel important not only in itself but a major influence on several different ecosystems. If the eel were to become extinct, there is no telling what effect this might have, and in turn how those effects may affect humans. The loss of the eel as a species would be felt directly as it would no longer be able for humans to fish or consume it, but also through the way it would affect other species that humans rely upon. Another important consideration is that the hardships endured by the eel is also affecting other species, marine or otherwise. Contaminants in water, damaged habitats, barriers in waterways that affect migration, fishing outside of safe biological limits threaten several other species. This makes preserving the eel vital not only for the eel but for humans as well, and affording the issue greater consideration than indicated by the lack of implementation so far may be beneficial in several ways.

It is also important to note that some of the measures stipulated in the ERF are part of other regulations as well, for example both UNCLOS and the Water Framework Directive have principles and steps that need to be taken that relate to river continuity, migrating species' ability to actually migrate, and implementation of other management measures (COM (2003) 573, p. 6-7).

Huntington et al. 2019, pp. 43-44, 48). When the member states fail to comply with the ERF, they also do not conform to other regulations enforced by both the EU and the UN.

The lack of accountability enforced for the member states and their shortcomings is mirrored by a lack of accountability for the EU itself. In 2012 the Commission proposed a new regulation that would amend the ERF. In 2013 it reached the European Parliament and Swedish parliamentarian Isabella Lövin was assigned as rapporteur. The report on the amendment proposal displayed several attempts to rectify some of the weaknesses in the ERF, for example it placed new responsibilities on the Commission to act on reports provided by the member states regarding the implementation of EMPs and “if necessary, propose, as a matter of urgency, appropriate measures to achieve, with a high probability, the recovery of the European eel.” (Lövin 2013, p. 6) The amendments also highlighted the need for continued consideration of “the best and most recent” information available from expert consultations and scientific advice, from ICES and other sources, and to act prudently on this advice as well (Lövin 2013, p. 7). “In the event that ICES confirms that the status of the eel stock remains critical, the Commission should as soon as possible submit a proposal for a new regulation on the recovery of the stock of European eel. That Regulation should also cover longterm solutions, such as ways to unblock migratory pathways.” (Lövin 2013, p. 8) It also introduced some sanctions for the member states in cases of non-compliance, for example would the continued failure to provide monitoring data and progress reports be met with the same forced 50% reduction in fishing effort or catches as failure to submit an EMP when the ERF was first adopted (Lövin 2013, pp. 8, 10, 14). Some new requirements such as member states revising and updating the EMPs every two years were also suggested. In the report’s explanatory statement, Lövin made several comments regarding the complexity of the eel as a species which makes the management of it complex also, and the continued need for urgent and effective action (Lövin 2013, p. 17). Lövin also referred to the eel as an “endangered animal” rather than simply a species or natural resource, which is a faint but modest improvement in the anthropocentric mindset, together with expressed alarm at the prolonged severity of the situation (Lövin 2013, p. 19). The proposal to amend the ERF was tabled by the Parliament in September 2013 and later withdrawn by the Commission in September 2020 (Procedure 2012/0201/COD). Despite this, the proposal and the rapporteur’s comments signal that the EU is aware of the ERFs weaknesses and its own inability to address the critical eel situation in an appropriate manner. Why it was tabled for such an extended period and then withdrawn is unclear, but constitutes a clear example of lack of accountability and enforcement.

6.2 Interests and targets

Another greatly problematic aspect is that there seems to be a substantial inconsistency between the recognised needs of the eel and the established targets of the ERF. It is acknowledged multiple times throughout the documents that the main need of the eel is to be able to migrate through waterways. The 2003 workshop report references this, recognising the need for habitat restoration initiatives as well as the need for maintenance of river continuity and the need to construct eel passes in conjunction with dams and hydroelectric installations (COM (2003) 573, p. 8-9). The report even concludes with the statement “The highest initial priority will be placed on assuring the survival and escapement of silver eel on their downstream migrations.” (COM (2003) 573, p. 12) This is echoed by Maat’s parliamentary report which states that “The upstream migration of eels for spawning and hence the possibility for them to swim upriver is essential for the life cycle of individuals of this species. Crossing physical barriers along freshwater courses should therefore be a priority.” (2006, p. 13) Meanwhile, the main targets of the ERF and the management measures of the EMPs is to employ re-stocking measures as well as reduce fishing efforts and catches. Re-stocking is the first measure to be defined in the ERF where it is stated that 60% of eels less than 12 cm in length should be reserved for re-stocking annually, followed by the target of reducing fishing effort or catches by at least 50% (Regulation 1100/2007, article 13, 14).

Re-stocking as a management measure can have ambiguous results according to the literature. Feunteun describes how re-stocking does not seem to have a tangible effect on the generally declining eel stock, while it has proved successful as a means of sustaining fishing (2002, p. 585). Later results provided by Lyach’s study confirm that current conservation efforts focussed on re-stocking have no effect on the sustainability of the population (2022, p. 41). Svedäng and Gipperth agree with this, arguing that the Swedish EMP is unclear in its priorities and seems to focus on sustaining and reducing the impact of fishing rather than achieving conservation targets (2012, p. 806-807). ICES concluded in a review of re-stocking measures that while effective in aiding eel production, it had limited effect on actual spawning and increase of eel stocks (Huntington et al. 2019, p. 16). In the 2019 external evaluation, it was stated that “Restocking is a short to medium term measure that should be phased out as natural recruitment and water course connectivity improves.” (Huntington et al. 2019, p. 67) Of the 1019 management measures reported to ICES by the member states in 2021, 81 concerned re-stocking. The major focus of the member states though is fishing. Of the 1019 management measures, 465 were related to commercial and recreational fishing (ICES 2022b, p. 3).

While there is some overlap between the two, as eel that is caught is not able to continue its migration, it is also evident that fishing may not constitute the main threat. The 2019 evaluation states that “In total, fisheries make up for more than

50% of anthropogenic mortality in 29 of 62 EMUs, where data for fishing and hydropower mortality was reported.” and later that “Estimations of MS [member states] suggest, that hydropower mortality accounts for more than 50% of anthropogenic mortality in 33 of 62 EMUs, where data for fishing and hydropower mortality was reported” (Huntington et al. 2019, pp. 4, 79). This means that hydropower is a greater mortality factor than fishing in more reporting EMUs than reporting EMUs where fishing is a greater mortality factor than hydropower. Despite this, and the recognised need for waterway continuity, only 177 of the 1019 management measures reported in 2021 were related to hydropower and obstacles (ICES 2022b, p. 3). The emphasis placed on fishing management measures compared to barriers is also evident in degree of implementation. ICES states in its 2022 report that while a large portion of the management measures regarding fishing were fully or partially implemented (68.5% of the commercial and 80.9% of the recreational), more than half of the measures related to hydropower and other obstacles (60.4%) were only partially implemented or not implemented at all. Of the 81 re-stocking measures, 75.3% were fully or partially implemented (ICES 2022b, p. 2-3).

The inconsistency regarding what is focussed on in the ERF with regards to established targets and management efforts versus which targets and measures that would be more appropriate greatly affects the ERFs effectiveness. As previously mentioned, none of the established targets are completely achieved – least of all the main goal of 40% escapement of silver eel. According to ICES’s 2022 evaluation, the 40% target was only achieved or exceeded in 23% of the reporting EMUs (ICES 2022b, p. 1). The re-stocking targets established in several of the EMPs were only achieved in six of them (Huntington et al. 2019, p. 4). The ICES report also states that “Mortality was lower in 59% of the reporting EMUs compared to the first year of reporting, but it increased in 29% of them.” (ICES 2022b, p. 1) ICES rather pointedly states in its suggestions to the EU that “Efforts in implementing measures should be focused on those measures that by definition have a high probability of reducing mortality and increasing escapement.” (ICES 2022b, p. 4)

This disproportionate prioritisation and subsequent lack in effectiveness is harmful to several stakeholders and their interests. First, it is not conducive to eel preservation or in the eels’ interests that management efforts are misplaced and inefficient. Thousands of tonnes of eel continue to die each year, either through being caught or by trying to migrate through altered waterways. While there is a general acknowledgement and acceptance of the eels’ basic needs throughout the documents as far as recognising which steps need to be taken for the species to recover to enable sustained use, it is also very evident that no suitable advocates have been able to speak for the eel through the process behind the ERF. Scientific advice has been collected and taken into consideration, but there is no sign of any representatives from organisations that focus on animal welfare or environmental issues being invited to participate. There is no recognition of the eel’s intrinsic

value and no thought or effort given to which measures would be beneficial for the eel and not merely sufficient to prevent complete extinction.

While fishing is not something that is beneficial for eels, fishing effort and catches are evidently already being dealt with to a great extent. This is in turn harmful to those involved in eel fishing, both commercially and recreationally. These stakeholders have been able to participate somewhat in the process behind the ERF, for example are representatives from the eel fishing industry referenced to have taken part in the 2003 workshop (COM (2005) 0472, section 2.1). The interests of fishermen have also been brought forth by elected representatives. For example did Polish EU parliamentarian Zdzisław Kazimierz Chmielewski submit a written question to the Council in June 2007 (three months before the ERF was adopted) on the unequal access to glass eel stocks in Europe:

“[...] The Council regulation establishing measures for the recovery of the stock of European eel has caused astonishment within the fishing community, given that the main means of achieving the stated objective are to be severe restrictions on the fishing of silver eels and a 50 % cut in fishing effort. The Szczecin and Kamieński Lagoons and Lake Dąbski Fishermen's Association has handed into me a formal protest against these far-reaching restrictions, which are a threat to the very survival of fishing families. The eel fishing period in the above zones lasts for no more than six months each year, and these excessively stringent restrictions on fishing opportunities will quite simply force fishermen into bankruptcy. One way of swiftly remedying this truly catastrophic situation would be to restock the Szczecin Lagoon and the adjoining waters on an annual basis with at least eight tonnes of glass eels reared in separate ponds. [...]” (E-3212/2007)

This manner of the issue turning into a question of eels vs. fishermen is widespread. The implementation of the three-month bans in certain European waters has been viewed as a particularly harsh measure (Göteborgs-Posten/TT, 2022). Meanwhile, there is a recognised lack of effort in reducing barriers and hydropower-related mortality. This makes the focus on re-stocking remarkable as it is doubly inefficient. It is not considered a meaningful conservation measure but is primarily used to sustain fishing. Reduced fishing effort in conjunction with re-stocking might have had some results if re-stocking was implemented in a correct way (for example, not re-stocking closed waters without waterways connecting it to the sea). But if the eels that are stocked are unable to successfully migrate through waterways, whether the goal is for them to be caught or make their way to the Sargasso, it is instead a rather inefficient use of resources. The inconsistencies between recognised meaningful conservation measures and the management targets established by the ERF are already general knowledge. The public consultation round of the 2019 external evaluation gathered that:

“The European eel fishing industry strongly believes that a limited and transparent capture fisheries is both sustainable and desirable, especially when based on small, traditional operations. This position is supported by the PC [public consultation] results, which highlighted external factors, such as inability

to reduce hydropower mortality or poaching, and insufficient implementation of the policy at the national level, rather than issues with the legislation itself.” (Huntington et al 2019, p. 4)

To summarise, the major amount of management measures and effort are targeted at fishing. This is not a reasonable reflection of the needs and interests of several stakeholders, most importantly the eel. The documents contain and express clearly that more focus should be placed on reducing mortality outside of fishing, mainly by ensuring the eel unobstructed migration through European waterways. Despite this, there is a clear lack of defined measures that concern this objective, as well as a lack of definition of who the responsibilities lie with – states, power companies, owners of sluice gates and other barriers related to transport or water management and so on. While it is understandable that some measures are hard to implement, there are ways to work around the barriers that have not been successfully implemented either. These deficiencies have a clear negative impact on the effectiveness of the ERF and on the conservation of the eel.

6.3 Legitimacy according to the framework

As has already been discussed, there are several deficiencies in the ERF related to the dimensions included in the theoretical framework of this thesis.

Dimension	Present in ERF	Comment
<i>Legal compatibility</i>	Partially	Procedures and previous rules are followed and respected, but ERF not legally within EU jurisdiction
<i>Accountability</i>	Partially	Some actors and responsibilities defined
<i>Representation & inclusion</i>	No	No sign that all stakeholders have been able to participate, not all relevant interests are considered
<i>Transparency</i>	No	No effort to make policy process inclusive, ERF vague in responsibilities and accountability
<i>Effectiveness</i>	No	No targets are completely achieved, the eel has not started to recover

<i>Enforcement & Accountability</i>	Partially	Some targets and measures are achieved or implemented, but not enough to enable improvement. No consequences for non-compliance
<i>Anthropocentrism</i>	Yes	Anthropocentrism expressed, but also awareness of anthropocentric effects
<i>Value</i>	No	Intrinsic value not recognised
<i>Representation</i>	No	Scientific advice considered, no animal or environmental rights representatives included
<i>Needs</i>	No	Needs included but not considered

Of the input phase, Rauschmayer and Behrens motivate the dimensions included in their study by the understanding that a decision is often considered legitimate if it is compatible with the prevailing rules of that society (2008, p. 67). They therefore include legal compatibility, because compliance with formal and informal procedures should provide a legislation with acceptance by all affected parties. As evident by the analysis, the ERF conforms to previous legislations as well as EU law making procedures, apart from the fact that inland fisheries is not part of EU jurisdiction. While the ERF is afforded legal legitimacy through overall agreement and compliance, any member state that wanted to oppose it would have grounds to do so.

Accountability is included by Rauschmayer and Behrens because how binding the outcome is, who can be held accountable for it, and who has the authority to make decisions on these are also important aspects of a legislation (2008, p. 68). As mentioned, there is a severe lack in the ERF of clearly defined responsibilities at all relevant levels as well as who these fall upon. While there are formal requirements that are well established, such as member states' obligations to create EMPs and provide comprehensive progress reports on the implementation of these, the actual management measures and who is responsible for them is deliberately not defined.

The dimension of representation and inclusion can be complicated according to Rauschmayer and Behrens, as identifying all the interests involved in such far-reaching issues is not easy (Rauschmayer & Behrens 2008, p. 68-69). Then there is the question of allowing fair inclusion of affected stakeholders or, at the very least, making sure that all relevant interests are provided sufficient protection or, ideally, enhancement. This is not provided by the ERF, the only parties that are

openly involved in the discussions are scientific advisers, fishing industry representatives, and the member states, which has resulted in a legislation that is not considerate enough of the needs of the eel or all those involved in eel fishing.

Finally, transparency is included as an open decision-making process can contribute to perceived legitimacy and somewhat alleviate deficiencies of the other three (Rauschmayer & Behrens 2008, p. 69). There is no sign that the process behind the ERF has been transparent, as few stakeholders have been included, press releases tell of issues that emerge and are solved in closed meetings, and a lack of defined responsibilities make it harder to enforce accountability.

Output in this study is dependent on effectiveness as well as enforcement and accountability. According to Høgl et al. effectiveness is usually defined in three ways in relation to governance (2012, p. 14). First, as the achievement of pre-set policy targets, second as the ability of an institution to deliver certain goods, and third, the aptitude to solve the problems that prompted its establishment. In this thesis, the first and second are relevant, as the ERF defines targets (such as 50% reduction in fishing effort and catches or the ultimate goal of 40% silver eel escapement) that are supposed to solve a problem (the critical state of the European eel population). In the case of the ERF, the analysis has established that it is not effective. There are multiple instances supplied by the evaluations that show how targets are consistently not met and as an effect of this inability, the eel population has not been able to recover.

This is connected to the second output dimension, enforcement and accountability. Accountability is used here in the sense that the defined responsibilities placed on defined actors are fulfilled. Enforcement according to Mena and Palazzo is the capacity of an organisation to ensure that established rules are followed and applied in practice, and to control and sanction non-compliance (2012, p. 542). This is often very dependent on monitoring procedures. As already established, the member states are severely lacking in their monitoring and reporting to the EU on their efforts, which are also severely lacking. None of the member states are consistently implementing management measures, achieving targets, or reporting adequately. While the member states of course fulfil some of the responsibilities set on them, it is not done to a degree that is enough for any noticeable change in eel welfare. How much of this is due to the absence of consequences or sanctions for the EU to impose in cases of non-compliance is unclear, but the ERF contains no such measures after the EMPs are established.

According to Engelen et al. there is an increasing need for legitimacy to be produced procedurally, i.e. through input, output, or throughput legitimacy, as previously acceptable substantive sources of legitimacy – religion, charisma, tradition, and scientific expertise – are becoming less widely accepted (2008, p. 11). They develop this by expressing that “When legitimacy is seen as a function

of the interdependence and interplay of procedures (input and throughput) and results (output), then an assessment of the legitimacy of a policy should address both procedures and results.” (Keulartz et al. 2008, p. 28). Adding together all of the legitimacy dimensions of the theoretical framework, and how they are exhibited by the creation and implementation of the ERF, show that there is a clear lack of legitimacy. This legitimacy deficit is often coupled with a democracy deficit in cases of environmental governance, as there are many challenges facing the process of producing policies at supranational levels that need to be implemented at lower levels and appropriated to local conditions (Mert 2021, 294). This democratic deficit often displays symptoms of absence of participation and inclusion, lack of proper implementation, and inequalities resulting from failure to cope with global crises before it affects those most vulnerable. The ERF has been shown here to be another case with such deficits. It is another case of legislation aimed at biodiversity loss that fails to solve the dilemmas facing environmental governance. What is best for many humans in the short term continues to outweigh what is best for the environment, or even humans in the long term. States continue to protect only the immediate interests of its citizens rather than protect their territory and environment for the future. And the issue of creating legislation that manages to balance the protection of threatened species with the interests of those reliant on the continued exploitation of that species on equal terms has still not been solved. This results in severe consequences, as it is harmful to relevant interests and stakeholders, it damages trust in the EU as an institution, and it puts the eel in further danger of becoming extinct due to human failures.

Using the posthumanist dimensions of the theoretical framework can provide insight into why these failures occur, as well as a critical perspective. Anthropocentrism is expressed several times through the documents. There is a clear absence of respect for the intrinsic value of the eel, as it is expressed multiple times that the eel is nothing more than a resource to be used by humans as they see fit. This is consistent with an anthropocentric perspective that according to Pereira “normalizes, enables, and encourages indifference towards and violence against non-human forms of life.” (2021, p. 2) The eel’s objective needs are considered but mostly disregarded in terms of actual management measures and preservation efforts. This may be because almost no suitable advocates are allowed to represent the eel, scientific advice is a start but cannot be considered equal to representatives of animal or environmental rights organisations. At the same time, there is an awareness in the documents of the prevalent anthropocentric mindset that is employed and the effects this is having on eel. The documents openly acknowledge that the dire situation of the eel is a consequence of human behaviour, while simultaneously trying to find ways to work around that situation and continue human exploitation of the eel in a “sustainable” way. Focussing on the anthropocentric elements of the ERF and the behaviour of the EU, its member states, and humanity in general, provide understanding regarding many of the ERF’s shortcomings. The continued exploitation of eel instead of a complete stop that would enable faster recuperation

of the species is not possible according to the instrumental perspective, neither is causing inconvenience or unnecessary costs to humans by implementing measures that would lower non-fishing mortality and alleviate the difficulties of the eel's migration, nor is the issue prioritised enough by member states that they are able to even provide monitoring data and progress reports in the way that is required of them. There is reason to be very critical of the special position that humanity has awarded itself (Hobden 2014, p. 176). The way in which modern humans have distanced themselves from nature is not feasible, as expressed by Pereira “[the] harm caused to nature and other living beings does not happen in isolation, thus also negatively affecting, and risking, humanity’s well-being, security, and survival.” (2021, p. 22)

7 Conclusion

The aim of this thesis has been to examine the European Union's Eel Regulation Framework using theories on legitimacy and posthumanism. This is highly relevant as the ERF is a case of legislation with the main target of preserving a species on the brink of extinction, and which faces several difficulties due to the complexity of environmental issues and multi-level governance. The question that guided this study was *In which ways could the ERF be considered legitimate with all human and non-human stakeholders in mind?*

This study has employed a theoretical framework which uses several dimensions of legitimacy in both the input and output phase as well as a posthumanist perspective. Using the two theories simultaneously has allowed this thesis to not only examine the legitimacy of the ERF using conventional aspects, but also criticise and explain some of the framework's properties. A posthumanist perspective has also been essential to be able to expand the analysis away from solely concerning human matters, which should become standard when examining legislation that not only affects humans but other species as well.

The method of Qualitative Content Analysis was used to be able to purposefully apply the framework and a coding frame was built using the dimensions extracted from theoretical literature and previous works. The coding frame was then used to code several documents produced by the EU and suitable external sources, including the framework itself and others that are related to either the preparatory or evaluative processes around it. The coding process was performed using the software NVivo and provided the data to perform the analysis.

The analysis and discussion could determine that none of the dimensions of the theoretical framework were fully present. This is evident in the lack of representation of interests and accountability of the input phase, inefficiency and lack of enforcement in the output phase, and anthropocentric expressions that reveal a lack of consideration for the eel and its needs. This in turn results in severe deficiencies in terms of the EU's abilities to successfully regulate important issues, a lack of effectiveness and misplaced focus of management efforts that harm stakeholder interests and endanger the eel, marine ecosystems, and by extension humanity. Based on these findings, the answer to the research question is that there are no ways in which the ERF can be considered legitimate with all human and non-human stakeholders in mind.

Further research is needed that can explore if the theoretical framework is applicable and meaningful to employ in other studies focussed on policy that relates to the environment and biodiversity. There is also an evident need for exploring what can be done to address the issues revealed by this study and others of the deficiencies and inefficiency of multi-level environmental governance.

The ERF is one single legislation focussing on one single species, but the problems it faces with regards to protecting the interests of stakeholders and successfully implementing relevant measures to enable effectiveness are prevalent. In the 20 years that has passed since the 2003 workshop report acknowledged that the eel was outside of safe biological limits, the EU has not been able to improve the situation in any way that has enabled even slight recovery. If this is the way humanity intends to handle all matters that concern the environment and biodiversity, the way our systems are connected to those of nature will become very apparent when they start to collapse one after the other.

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