

Dialogues of the deaf in Dutch eel management policy. Explaining controversy and deadlock with argumentative discourse analysis

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Scientists claim the European eel stock is in a state of crisis. Although stakeholders in the Netherlands agree, also upon the need for action, for a long time no concrete measures were decided upon. Drastic protection measures were only taken 70 years after the first warning signs and 11 years after explicit advice by ICES. Our argumentative discourse analysis shows that ‘dialogue of the deaf’ among discourse coalitions explains the deadlocked policy process. Argumentative discourse analysis not only contributes to a better understanding of knowledge utilisation in controversial fish stock management, but also to conflict resolution in this field.

Keywords: European eel [*Anguilla anguilla*]; controversy; discourses; advocacy coalitions; knowledge utilisation

1. Introduction

Scientists claim that the European eel [*Anguilla anguilla*] is currently in a state of crisis. As the International Council for the Exploration of the Sea (ICES)¹ states, “the most widespread and highest employing, single fish stock in Europe is dangerously close to collapse” (ICES 2010). The decline of the European eel stock has been reported by scientists since the 1940s in Northern Europe, and since the 1980s in the rest of the continental range (Feunteun 2002).² Catches have declined by 95% and the recruitment of glass eel (juvenile eel) has fallen to 1% of historic (pre-1980) levels (ACFA 2006, Dekker 2008, ICES 2010). The lack of data about eel biology, especially the oceanic phases such as spawning and eggs (presumably taking place in the Sargasso Sea), make it difficult to identify the causes of the population decline. However, besides possible natural causes (such as predators and climatic changes), several anthropogenic impacts have been identified as important causes³ (Dekker 2008).⁴ Scientists and other parties have therefore urged politicians to take immediate action. In 1998, ICES advised the development of recovery plans and a decrease in fishing activity to as close to zero as possible (ICES 1999). In the same year, the eel was put on the IUCN and Dutch Red List of endangered species. In particular over the last decade, in the Netherlands various research institutions, nature, water and recreational anglers’ organisations, supermarkets, scientists and

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other stakeholders have advocated drastic measures to restore the European eel stock. However, although all parties in the Netherlands, including the commercial eel sector (fisheries, aquaculture), have eventually acknowledged that there is an urgent problem, for a long time they could not agree upon measures for the restoration of the eel stock. As a result, the whole Dutch policy process for eel management was highly controversial in nature, resulting in no concrete measures being taken until the end of 2009, 70 years after the first warning signs, and 11 years after the explicit ICES advice.

In this paper, we explain the controversy and stagnation in Dutch eel management policy. This is not only interesting from the perspective of the management of fish stocks and other forms of natural resources, but also from the perspective of knowledge utilisation. Scientists seem to have succeeded in putting the eel problem on the political agenda, but not in developing a policy for eel recovery. As we will show later, an important reason was that scientists disagreed about what eel stock recovery measures were considered most appropriate. What causes the controversy and stagnation in Dutch eel management policy and the contested production and utilisation of scientific knowledge therein? What explains why, in 2009, concrete measures for eel recovery were eventually decided upon? We address these questions by examining the discourses of actors involved with eel decline.

Discourse theory starts from the premise that the way in which people talk about aspects of the world is not a neutral reflection of reality, but rather plays an active role in creating and changing it. Discourses namely determine what form of action is logical or natural, and which ones are unthinkable (Jørgensen and Phillips 2002). In the case of eel decline, actors may have very different perceptions about the causes of this phenomenon and hence advocate different solutions. Discourse analysis is frequently employed in the study of policy controversies, in which often two or more coalitions of actors adhering to similar discourses compete for hegemony of their discourse (Durning 1995, Van Eeten 1999, Sharp and Richardson 2001). In discourse analysis, knowledge and power are important concepts. Power is important for understanding why at some moment in time particular discourses become dominant, as well as for understanding what knowledge is produced, and by whom; and why knowledge is considered legitimate and is utilised or not (Howarth 2009). Some authors state that the monopoly of production of legitimate knowledge, or 'authorised language', is typically in the hands of professionals, although it can be subject to negotiation within certain limits (Bourdieu 1992). However, other authors claim that, in particular in the political arena, knowledge is used instrumentally, in a way that best serves interests (Giessen *et al.* 2009).

With our discourse analysis we intend to contribute to a better understanding of the dynamics in Dutch eel management and the role of knowledge therein, a subject which thus far has not received much attention in literature on conservation and fish stock management. The analytical approach taken in our paper may also be useful for understanding controversies and knowledge utilisation in eel protection elsewhere; in most other Member States of the EU, eel management plans were, and still are, debated; and new controversy and deadlock may emerge in 2012 when Member States have to report on their policies, and possibly adjust these (European Council 2007, EIFAC⁵/ICES 2009). In a more general sense, we hope to contribute to discourse literature by expanding its empirical basis. Fisheries policies (and marine management in general) thus far have only incidentally been analysed from

this perspective (exceptions include Turnhout *et al.* 2008, Ritchie and Ellis 2010, Ebbin 2011). This paper allows for cross-policy sector comparisons of discourses – how specific are fisheries discourses and the basis upon which some discourses gain dominance? In addition, it may reveal particular relationships between discourse and knowledge; the eel controversy suggests that scientists play less of a role in the dominant discourse coalition than in Dutch water management (see Edelenbos *et al.* 2011).

This paper is structured as follows. Section 2 will address the way in which discourses will be articulated and analysed. The evolution of the Dutch eel policy process will be presented in section 3. Different discourses identified will be discussed in section 4. Section 5 will explain controversy, deadlock and breakthroughs in the Dutch policy process for eel management in the light of discourses. In section 6 we will discuss our main conclusions and reflect on directions for further research.

2. Analytical and methodological framework

2.1. *Discourses and their relationship with controversy and knowledge utilisation in policy making*

Discourses refer to the ways in which meaning is given to particular social and physical phenomena (Hajer 1995, Healey 1997, Jørgensen and Phillips 2002). These meanings are related to practices: claims and acts of the actors involved. Stated differently, discourses are the ‘lenses’ through which actors give meaning to aspects of the world and according to which they act (Runhaar 2009). Discourse analysis is characterised by a wide variety of approaches, but two distinct ‘traditions’ are the linguistic tradition (text analysis and actor-oriented, focusing on language and what language is used for, e.g. Georgakopoulou and Goutsos 1997) and sociological or ‘argumentative discourse analysis’ (focusing on broader issues relating to larger parts of society and explicitly linking discourses to practices, structures, and institutions, e.g. Sharp and Richardson 2001, Hajer 2005). Our research fits in the latter tradition in discourse analysis, which is also the most commonly employed form of discourse analysis in policy and planning studies for understanding choices underlying policies (e.g. problem framing and choice of policy instruments) and controversies in decision making (Van Eeten 1999, Sharp and Richardson 2001). From the latter discourse perspective, decision-making processes are conceptualised as struggles between ‘discourse coalitions’; groups of actors advocating a similar discourse with the aim of gaining acceptance of their framing of a policy issue and the way it has to be dealt with (Durning 1995, Sabatier and Jenkins-Smith 1999, Weible *et al.* 2009).⁶ Discourses thus cannot be understood in isolation from power; power determines which discourses are dominant and which discourses are marginalised or discredited. In this vein, power also may explain knowledge utilisation (see the introduction to this paper).⁷

Discourse coalitions in sociological or argumentative discourse analysis bear strong resemblance to the concept of ‘advocacy coalitions’ from Sabatier’s Advocacy Coalition Framework (ACF); clusters of stakeholders who share a set of policy core beliefs, for example, the protection of the European eel, and engage in co-ordinated behaviour (Weible *et al.* 2009). ‘Co-ordination’ involves some degree of co-operation in order to achieve similar policy objectives (Sabatier and Jenkins-Smith 1999, Sabatier and Weible 2007). Within the ACF framework, co-operation in turn requires agreement upon the policy to be pursued and the basic lobbying strategy, and on the ability to monitor and enforce conformance with the agreed strategy.

2.2. Articulating discourses

In order to articulate discourses we have employed concepts from ACF, as this framework offers an explicit and structured approach for analysing controversies caused by conflicting discourses. Both discourse analysis and the ACF focus on meanings, or frames of reference, to explain what drives actors in a policy debate (Weible *et al.* 2009). What ACF adds to discourse analysis is the distinction between meanings and policy core beliefs. Meanings are similar to discourses and represent how problems are framed and what solutions are advocated. Policy core beliefs include fundamental value priorities, such as the relative importance of economic development versus environmental protection. These beliefs not only explain why actors adhere to particular meanings or discourses, but also help to better understand coalitions – policy core beliefs, in particular, are the fundamental ‘glue’ that holds coalitions together, as various actors form alliances around certain policy core beliefs (Sabatier and Weible 2007).

In order to operationalise discourses, we employed Toulmin’s structural model of argument (Toulmin 1958), which was slightly refined by Dunn (2004). This model reveals the argumentation structure of advocacy coalitions, in order to better understand meanings and their potential impacts. This model contains six elements: policy relevant information, policy claim, warrant, backing, qualifier and rebuttal (see Figure 1). The first four elements are present in any policy argument; the last two not necessarily (Dunn 2004). A claim is the conclusion or ‘output’ of a policy argument, which is supported by policy-relevant information: the beginning or ‘input’ of the argument. The warrant is the justification or reason for concluding the policy claim from the policy relevant information. In turn, the warrant is supported by backing, which provides additional reasons or evidence. The qualifier indicates that the policy claim has a given truth or plausibility. Finally, the rebuttal states any special conditions, exceptions or qualifications that may reduce the strength of the qualifier. Three types of claims are: designative (concerning questions about facts); evaluative (concerning questions about the value of some aspect of a policy); and

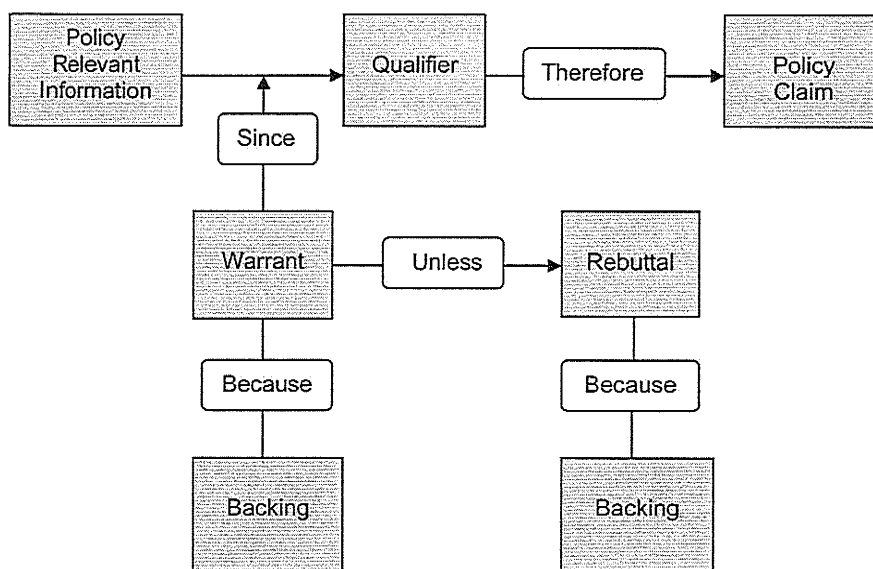


Figure 1. Toulmin’s six elements to model a policy argument.

advocative (concerning questions about the right action to be taken) (Dunn 2004). In this research, the main focus is on advocative claims, which rest on warrants that involve both 'facts' and 'values' and can be recognised by signal words such as 'ought', 'needs to', 'should', 'must' and 'is required'. Values have a direct connection with the policy core beliefs from ACF.

Toulmin's structural model not only gives insight regarding the form of argumentation, the issues included and the arguments, but may also reveal disagreements among discourse coalitions. These disagreements may be fundamental when concerning underlying policy core beliefs, resulting in controversies and ultimately in deadlocked situations. These situations are what Van Eeten (1999) and others have called 'dialogues of the deaf':

a policy controversy, deadlocked even after extensive deliberation, in which stakeholders, including policymakers and public managers, talk past each other, advancing arguments that are valid in their own right, but which can differ fundamentally from each other. (Van Eeten 1999, p. 2)

2.3. *Dominance of coalitions*

Dominant coalitions control agenda setting and policy formulation (Weible *et al.* 2009). Those in power may impose their discourse on others; a dominant discourse (i.e. the discourse to which a formal decision conforms) therefore reflects power. However, dominant discourses may be challenged by actors who strive for hegemony of their own discourse (Hajer 1995). Advocacy coalitions may employ various strategies and resources to propagate their discourse and influence the decision-making process, and in this way exert power. Resources include:

- (1) legal power (including lobbying campaigns to sway officials and placing allies in positions of legal authority; e.g. agency officials, legislators, judges);
- (2) public opinion and media;
- (3) information regarding the problem severity, causes and the costs and benefits of policy alternatives;
- (4) mobilisable troops (e.g. in order to organise public demonstrations);
- (5) financial resources (also to purchase other resources, such as research and media campaigns); and
- (6) skilful leadership in order to mobilise an organisation (or coalition) as a whole by creating an attractive vision, using resources efficiently and attracting new resources for the coalition (Sabatier and Weible 2007).

The role of knowledge is particularly interesting, as the starting point of this paper was curiosity about political inaction in the context of major scientific concerns regarding eel stocks formulated by ICES. The ACF suggests that advocacy coalitions may use information strategically to win political battles against opponents (Sabatier and Weible 2007). Empirical studies confirm that science is often used by other actors in a political or strategic way to strengthen pre-existing beliefs, or to legitimise arguments against opponents (Weible *et al.* 2009). In addition, empirical studies demonstrate that scientists and other types of researchers are not 'neutral' or 'policy indifferent', but are often members of coalitions, both in terms of their policy core beliefs and their networks of sources and perceived allies that they share with these coalitions (Van Buuren and Edelenbos 2004, Sabatier and Weible 2007, Turnhout *et al.* 2008). In addition, power has an important influence

on what knowledge is considered legitimate and what knowledge is not. Kleinschmitt *et al.* (2009) therefore claimed that when analysing the relations between power (or politics) and knowledge (or science) one should always keep “in mind that a scientification of politics is simultaneously connected with a politicisation of science” (p. 311).

2.4. *Synthesis: our theoretical framework*

Based on the above discussion, we constructed a theoretical framework, which combines elements from sociological or argumentative discourse analysis, with elements from the ACF framework and Toulmin’s structural model of argument. From sociological or ‘argumentative discourse analysis’ we have adopted the general definition of discourse as meanings associated with a phenomenon, and the conceptualisation of decision making as a struggle between coalitions of actors adhering to particular discourses that address the nature of a specific problem and the appropriate way(s) of dealing with that problem. From ACF we have adopted the idea of policy core beliefs underlying discourses, the concept of coalitions in terms of co-ordinating actors, and the strategies and resources that may explain why a discourse coalition may become dominant. Toulmin’s structural model of argument was adopted in order to articulate the content of discourses, and for conceptualising controversies – an extreme form of which is the ‘dialogue of the deaf’.

2.5. *Research methods and materials*

This research was conducted according to the 10 steps that are normally part of discourse analysis, identified by Hajer (2005) (see Supplementary material, online only). The primary research methodologies are document identification and review and interviews with experts who have a ‘helicopter overview’ and with key players. The desk research contained a general survey of the documents and positions in Dutch eel management policy, newspaper analysis and a literature study of European eel ecology, which provided a first reading of events. After desk research, document analysis helped to explore discourses and structure concepts, ideas and categorisations. Policy documents, position papers and press releases gave an insight into perceptions, arguments and resources used. In addition to desk research and document analysis, interviews were conducted with two actors who have an overview of the field and with 11 actors from government, scientific and other research institutions, NGOs, companies and commercial unions. These interviews provided additional information about the discourses (expressed by arguments) and influencing strategies (including the resources employed) of advocacy coalitions. Relevant stakeholders were identified by means of document analysis and the snowballing technique, i.e. asking interviewees to identify additional stakeholders, until no new names are mentioned. Because of the controversial character of the policy process and the request of the interviewees to remain anonymous, no names will be mentioned in this paper. Because of text limitations, we have not listed all sources in the empirical analysis in sections 3–5; the Supplementary material (online only) document provides more information.

The stakeholders identified were clustered into coalitions based on similarities in arguments employed. These similarities have been revealed by organising the

information provided by the document analysis and the interviews according to the elements of Toulmin's structural model of argument, as outlined above. Based on this analysis, we chose labels for the discourses that we felt were characteristic of the policy claims uttered.

3. Key events of the policy process

We describe the context in which the discussion about eel management policy has taken place, by means of key events – formal decisions, publications, debates or other critical events that give direction to the decision-making process (cf. Hajer 2005). In the Dutch policy process for eel management three distinct periods can be distinguished, each demarcated by a key event discussed below.⁸

3.1. Period 1940–2003: stagnation and denial

Since the 1940s, scientists have been the dominant spokesmen for the eel, reporting the decline of the European eel stock for almost 60 years (Feunteun 2002, Dekker 2008). The Dutch scientist Dr Willem Dekker (associated with IMARES, Institute for Marine Resources and Ecosystem Studies, Wageningen University and Research Centre) gave impetus to the international debate with his extensive research on the European eel and his efforts to bring his findings to the attention of the European Commission and other stakeholders, which caught the attention of ICES. In the meantime, Dekker provided information about the state of the eel stock to the Dutch government and Dutch eel fishery organisations. In 1998, ICES recommended that an international recovery plan should be developed for the European eel (CEC 2001). In the same year, the IUCN put the European eel on the Red List of endangered species. In view of the state of the eel stock, ICES asked for immediate and powerful management measures, in particular to reduce fishing activities to as close to zero as possible (ICES 1999). However, this advice did not immediately trigger decision making or policy formulation, apart from the fact that the European eel was put on the Dutch Red List of endangered species. However, the advice did trigger the start of the societal debate, i.e. the initial denial of the problem by fishermen all around Europe. In this period of political inaction and societal denial, scientists continued advocating the protection of the European eel at an international level (Dekker 2008, Dekker *et al.* 2008).

3.2. Period 2003–2007: intervention by the European Commission

This situation changed drastically in 2003, when the European Commission proposed “EU action to protect European eels”. Referring to scientific advice, the European Commission stated that “there is an urgent need for a management plan for eels” in order to “ensure that this important resource, both as a fishery and in aquaculture, is safeguarded”.⁹ In addition, other stakeholders in Europe, such as the European Anglers' Alliance EAA and WWF, began to pay attention to the state of the European eel, in various resolutions and position papers. Since then, decision making and policy formulation for protection of the European eel has accelerated. Because of scientific pleas and the advice of the ICES¹⁰ to develop an international recovery plan, the European Commission proposed a

regulation in 2005, aimed at the recovery of the European eel stock. This regulation has caused a fierce debate among Member States, who have tried to protect their interests. For example, France has fought for its glass eel fishery, and the Netherlands for its silver eel industry. Nevertheless, the Netherlands was a frontrunner in the development of this regulation. Eventually, the regulation that established measures for the recovery of the stocks of the European eel (EC 1100/2007) was adopted on 18 September 2007. Under this regulation, each Member State was required to provide an Eel Management Plan before 31 December 2008.

3.3. *Period 2007–2009: controversy, deadlock and intervention again*

Stakeholders in the Netherlands began to develop eel management measures in 2005, anticipating the upcoming EU Regulation. The Dutch Recreational Anglers' Organisation had invited nature and water organisations, commercial eel fishery organisations and scientists to collectively examine the problem and develop solutions. They produced several ideas for eel management, including co-management at the regional level and non-fishery related measures, which were handed over to the Dutch Ministry of Agriculture, Nature and Food Quality (MANF) (Eel Committee 2005). However, concrete measures for limiting the eel fishery were not mentioned. The MANF submitted the first version of the Dutch Eel Management Plan to the European Commission on 15 December 2008 (MANF 2008a). This report included measures for the recovery of the eel stock; among other things a closed season for all commercial eel fishery from 1 September–31 October. In 2008, most of the stakeholders who had earlier proposed eel management measures to the MANF discussed further measures to address the eel decline. Our interviews revealed that the nature, water and recreational angler organisations and scientists had concluded that the only option was to phase out the commercial eel fishery, which they later advised to the MANF. The commercial eel fishery organisations dissociated themselves from this advice. The relationship between the nature, water and recreational angler organisations and the commercial eel fishery organisations became polarised and the development of the Dutch Eel Management Plan ended in controversy.

The protective measures in the first Dutch Eel Management Plan were based on a recommended 40% target level of 'escapement' of silver eel to the sea to spawn¹¹ in the Netherlands by the research institutes IMARES, VIVION and VisAdvies (Klein Breteler 2008, MANF 2008b). This approximates to 4000–6000 tons of silver eel that should escape to the sea to spawn per year, which is 10–15 times more than current levels. This estimate was criticised heavily by the Dutch commercial eel fishery organisations, on its assumptions, knowledge base and models used for calculations. Because of this criticism, MANF installed a Commission in 2008 which gave a second opinion: the Eijsackers Commission (MANF 2008b). The report of this Commission stated that, although the condition of the European eel was critical and drastic measures were considered necessary, the recommended target level of escapement was probably too high (Commission Eijsackers 2009). The commercial fisheries sector agreed with this advice but ICES disagreed, claiming that the target level of escapement was too low.

Due to doubt about the accuracy of the estimated target level of escapement by IMARES, VIVION and VisAdvies, and an alternative plan provided by the

commercial eel fishery organisations and aquaculture farmers to release 157 tons of silver eel into the sea, instead of a closed fishing season (PV *et al.* 2009), Minister Verburg from the MANF compromised by limiting the closed season for commercial fisheries to October, instead of September and October. In addition to this, the commercial eel fishery had to contribute to eel restocking by releasing 50 tons of silver eel in the sea per year (MANF 2009a). However, the Dutch Parliament decided against closing the fishing season in October, which led to a revised Dutch Eel Management Plan where the alternative plan of the commercial eel fishers was adopted, i.e. releasing 157 tons of silver eel in the sea without a closure of the fishing season (MANF 2009b, PV *et al.* 2009).

Dutch nature, water and recreational anglers' organisations protested against the decision to abolish the closure of the fishing season, stating that this would mean a death sentence for the European eel. Furthermore, European Commissioner Joe Borg warned MANF that the European Commission would reject the Dutch Eel Management Plan, because ICES judged that the target level of escapement was underestimated by the Eijsackers Commission and the effect of the measures would therefore be insufficient (MANF 2009c). The regulation issued by the European Commission states that in case of a rejection, Member States would face a sanction of a 50% reduction in eel fisheries (EC 2007). On the advice of Commissioner Borg, Minister Verburg decided to close the fishing season from 1 October–1 December in 2009 and from 1 September–1 December starting from 2010 (MANF 2009c). The commercial fishermen were outraged. Commercial eel fishery organisations criticised the arguments Minister Verburg gave for dismissing their alternative plan and the assumptions and calculations ICES made. However, Minister Verburg maintained this plan and the European Commission approved this latest version on 20 October 2009 (European Commission 2009).

In parallel with this, another critical decision was taken by private actors. In December 2009, several large Dutch supermarket chains gradually decided to stop the sale of eel, as they argued that the existence of this species is threatened. These supermarket chains made this decision, albeit under pressure from WWF and animal welfare organisations and an anticipated negative image among consumers. For example, an interviewee stated that supermarket chain Albert Heijn decided to end the sale of eel because "continuing the sale could not be legitimised anymore. . . , it could not be justified to the consumer". However, because of their commercial interest, supermarkets phased out their supply of European eel products gradually, instead of immediately, and provided alternatives with the South African eel or other fish species. This decision yielded much criticism from other retailers, eel traders and commercial eel fishery organisations, who stated that ending the sale of eel would be counter-productive, because small retailers and many restaurants would continue selling European eel. This claim was backed up with reference to a report by Wageningen University (Smit *et al.* 2010). Moreover, this coalition argued that eel fishery is not the main cause of the decline in the European eel stock and that the eel sector could play an important role in its recovery. The protests did not change the supermarkets' plans to end the sale of eel. Later, many other Dutch supermarkets followed them.

4. Poles apart: different discourses

The eel management controversy concentrated on the closed fishing season. Basically, two discourse coalitions can be identified: a coalition in favour of and

one against a closed fishing season (see Table 1). Their discourses are analysed below.

4.1. The 'closed fishing season is the best solution' discourse

In the period 2007–2009, nature, water and recreational angler organisations formed a tight coalition in favour of a closed fishing season, with co-ordinated actions such as joint position papers and campaigns and close co-operation within the 'Project group Eel Recovery 2009'. We label their discourse as the 'closed fishing season is the best solution', as it reflects the main interest: eel protection. Although these actors also advocated other measures (e.g. habitat restoration and elimination of barriers), a closed fishing season or even a total halt to exploitation was, and still is, considered the most important measure, since 'every eel caught is one eel too many'. The eel recovery plan of the commercial eel fishery organisations was considered ineffective, because there was no scientific foundation for this plan (157 tons is not nearly enough to reach the 4000–6000 tons of silver eel that should escape to the sea to spawn (based on the advice of IMARES, VIVION and VisAdvies; see section 3.3) and it was unclear whether eels from aquaculture farms can find their way to the Sargasso Sea), and because it did not meet the demands of the European Commission (Dekker *et al.* 2008, MANF 2009d). Figure 2 depicts the arguments employed and the structure of this discourse.¹²

In general, most scientists in the Netherlands, other Member States and at the European level (ICES) adhered to a similar discourse. The eel stock would have to be protected in order to increase the recruitment of glass eels (EIFAC/ICES 2009, Commission Eijsackers 2009). For this purpose, according to IMARES, VIVION and VisAdvies, fishing efforts in the Netherlands should be reduced by at least 75% against 2006 levels to reach the target escapement level, or more for a faster recovery

Table 1. Coalitions in the Dutch policy process for eel management.

Coalition in favour of a closed fishing season	Coalition against a closed fishing season
<i>Nature/environmental</i>	<i>Fishery</i>
<ul style="list-style-type: none"> ● WWF ● North Sea Foundation ● Greenpeace ● Natuurmonumenten Society ● Water Naturally 	<ul style="list-style-type: none"> ● Organisation of Commercial Fishermen ● Fish Commodity Board ● Dutch Fishery Union ● IJssel Lake Association ● Sustainable Eel sector Holland
<i>Fishery</i>	<i>Trade</i>
<ul style="list-style-type: none"> ● Dutch Recreational Angler Organisation 	<ul style="list-style-type: none"> ● Dutch Association of Eel Traders
<i>Science, research and consultancy</i>	<i>Aquaculture</i>
<ul style="list-style-type: none"> ● RAVON Foundation (applied science) 	<ul style="list-style-type: none"> ● Dutch Association of Fish Aquaculture
	<i>Science, research and consultancy</i>
	<ul style="list-style-type: none"> ● Leiden University ● Witteveen + Bos (consultancy firm) ● Several individual scientists from various universities working for fishermen

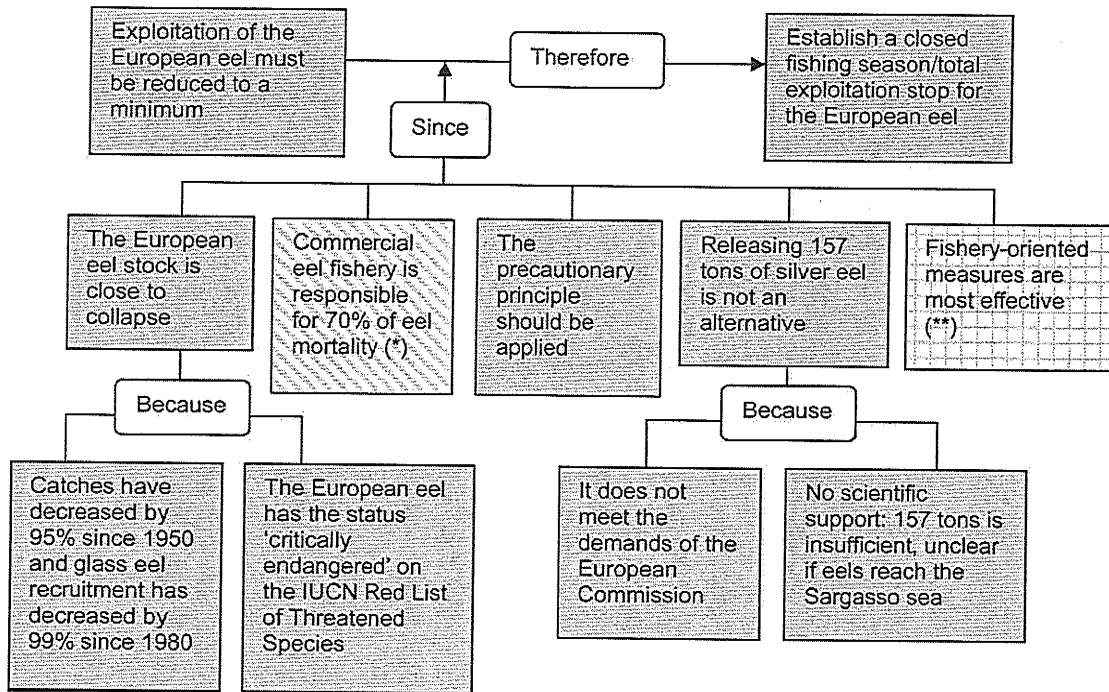


Figure 2. Structural model of argument from the 'closed fishing season is the best solution' discourse coalition: nature, environmental and recreational angler organisations and scientists. Note: (*): argument employed by nature and environmental organisations only; (**): argument employed by recreational angler organisations and scientists.

of the European eel stock (Dekker *et al.* 2008). Moreover, according to scientists that we interviewed, "fishery related measures are the most cost effective and the easiest to implement in the short term". Other measures suggested were habitat restoration and opening migration routes (Klein Breteler 2008, EIFAC/ICES 2009). Despite similarities in discourses, the above scientists and actors did not form a coalition in terms of our theoretical framework, as there were no co-ordinated actions (except for RAVON, a research NGO for reptile, amphibian and fish conservation).¹³

4.2. The 'fishery sector is not the main cause' discourse

The coalition against a closed fishing season consists of commercial eel fishery organisations, aquaculture farmers and traders. Although some individual fishermen doubt the decline of the stock, or dispute its severity, the majority of the fishermen and their organisations acknowledge the general downward picture and the need for a restoration plan (Dekker 2008). However, they disagree with the coalition in favour of the closed fishing season on what this restoration plan should entail. Figure 3 depicts their discourse. The main argument is that the fishery sector is not the main cause of the eel stock decline, citing scientific research (of Leiden University and others), which states that habitat loss, turbines and pollution are more important causes. In addition, this coalition states that a closed fishing season is in the best case ineffective, and in the worst case counterproductive, and that the sector plays an important role in eel stock recovery. Finally, this coalition claims it represents an economically and culturally important sector, which reflects the interests of the fishery sector. We label this discourse as the 'fishery sector is not the main cause'.

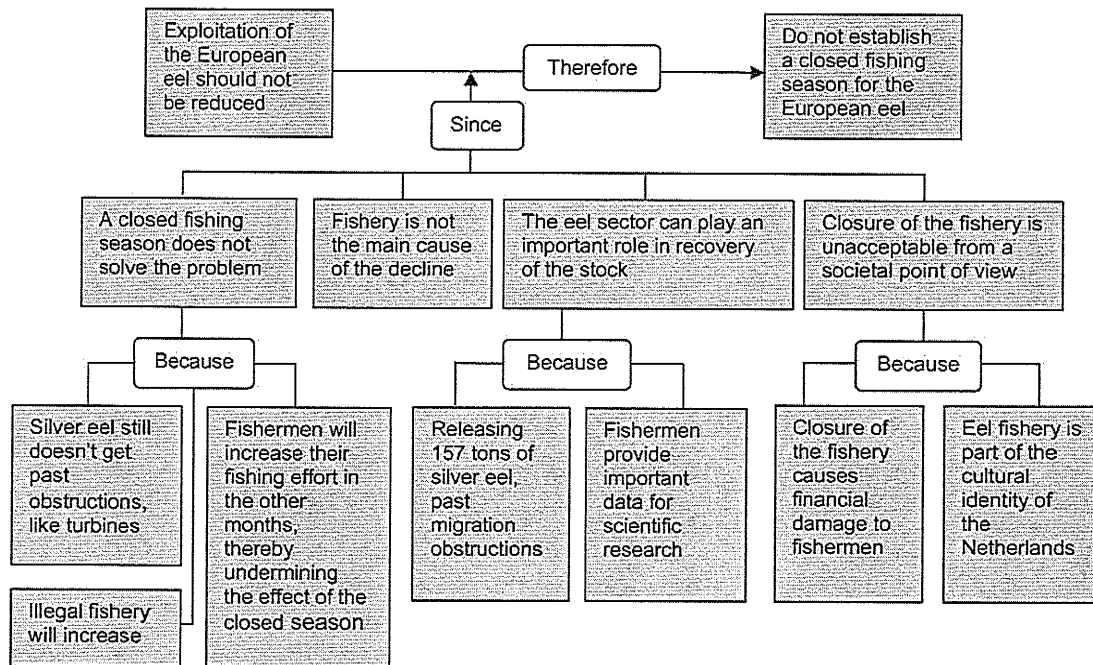


Figure 3. Structural model of argument from the 'fishery sector is not the main cause' discourse coalition: the eel sector, Leiden University and Witteveen & Bos.

The originally weakly organised commercial eel sector began to enhance its organisational capacity in 2009. The Organisation of Commercial Fishermen (CvB) and the Fish Commodity Board (an umbrella organisation for the whole Dutch fishery sector) became the dominant interest groups of the commercial eel fishermen, and in 2009 the Dutch Association of Eel Traders was founded. The Dutch Association of Fish Aquaculture already existed since 1994, but aquaculture farmers became active in the debate only after a couple of supermarkets decided to stop selling eel, thereby affecting the aquaculture farmers (after 2009, more supermarkets stopped selling eel). In 2010, the Sustainable Eel Sector Holland was founded – a co-operation between commercial eel fishery organisations, aquaculture farmers, traders and eel processors, co-ordinating actions such as joint eel release.

Leiden University closely co-operated with the eel sector. Researchers at this university emphasise the importance of the commercial eel fishery for recovery of the stock in setting out eels, controlling illegal fishery and providing important data about the state of the stock. Moreover, researchers from this university have claimed that, since there are multiple causes of the eel decline, it is not very logical to only address commercial eel fishery. In their view, restoration of habitats and migration routes should also be promoted. In addition, consultancy firms such as Witteveen + Bos and some individual eel scientists co-operating with eel fishermen¹⁴ share the eel sector's discourses.

5. Explaining the evolution of the policy process and the utilisation of knowledge

The policy process for eel management in the Netherlands and other European countries began slowly and stagnated, due to political inaction and denial. This deadlock on the national policy level led the market to intervene through the

autonomous decision of supermarkets to stop the sale of eel. The policy process escalated, particularly at the national decision-making level, when the MANF and other actors started suggesting concrete eel management measures, and the expected effects of eel management, particularly on fishermen, became apparent. The positions of the nature, water and recreational anglers' organisations and commercial eel fishery organisations polarised, and their relationships deteriorated, whilst the MANF and the Dutch Parliament also developed opposing positions to the proposed measures. Our interviewees (who partly belong to the discourse coalitions we discussed above) consider the Dutch policy process is as an 'improper' and even 'dirty' process, in which arguments and scientific advice have been cited incorrectly, or even abused, by coalitions and the media. They consider decision making as being not transparent and based on emotions instead of scientific information. The interviewees observe that all actors involved ascribed blame for the eel decline to other actors and causes (e.g. the fishery, dams, cormorants, other Member States¹⁵). Because of this controversy, the policy process became deadlocked, resulting in a delayed establishment of the Dutch Eel Management Plan (since the first attempt in 2005 by the Eel Committee), which is approved by the European Commission but is perceived as unsatisfactory by all parties in the Netherlands.¹⁶

5.1. Explaining the controversy: disagreements between policy core beliefs

The controversy and deadlock originate from the fundamentally different discourses and underlying policy core beliefs held by the opposing coalitions. First, the two discourses are based on incommensurable fundamental value priorities related to the importance of environmental protection versus economic development, and protection of cultural heritage because of differing worldviews (an ecological/stewardship vs. anthropogenic worldview, respectively). Second, the basic perceptions about the seriousness of the problem and its causes are highly polarised due to the different stakes involved and scientific uncertainty about the extent and causes of decline. This leads both to the strategic use of information, i.e. coalitions citing research that contains information conforming to their discourses, and to opposing scientists being part of, or related to, other coalitions because of their differing discourses. However, the disagreements about the preferred policy instruments cause the most conflict, because the incommensurability of the divergent fundamental value priorities and basic perceptions become apparent in the face of concrete policy action.

These differences in discourses are reflected in the arguments given by coalitions, which can be generally divided into ecologically oriented arguments based on the precautionary principle, versus economic and culturally oriented arguments. In the latter arguments, no measures such as a closed fishing season should be taken, as long as scientific uncertainty exists over the effectiveness of this, and other, measures and over the main causes of the decline. The biggest difference between the arguments is that nature, water and recreational anglers' organisations, and (most) scientists, talk about the state of the European eel stock, whilst the eel sector is also talking about their own survival and the relevance of the sector for the European eel and society. The different beliefs contribute to in-group cohesion and produce distrust of people in other coalitions, leading to a deadlocked policy process in which coalitions and

decision makers talk past each other; a so-called 'dialogue of the deaf' (Van Eeten 1999). The problematic communication between coalitions also leads to problematic utilisation of knowledge, or even 'knowledge fights' – "actors [spending] most of their time deconstructing each other's research,... with piles of reports as a result, in which contradictory conclusions are presented" (Van Buuren and Edelenbos 2004, p. 290).

5.2. Explaining the deadlock in eel management: dominance of discourse coalitions

The deadlocked situation is an indicator of the absence of a dominant discourse coalition (or a balance of powers among these coalitions) until 2009. How can this be explained? In section 2, we discussed various strategies and resources that discourse coalitions may employ. Regarding strategies, the 'fishery sector is not the main cause' discourse coalition mainly relied on lobbies with governmental officials and Members of Parliament. In contrast, the 'closed fishing season is the best solution' discourse coalition aimed to mobilise pressure from society, by gaining public and media support through campaigns and metaphorical slogans, such as 'Don't let the eel slip-slide away!', and directed their petitions and lobbying towards decision makers in the European Commission (SN *et al.* 2009). Regarding resources available, we can only make a tentative assessment. Both coalitions experienced a lack of financial resources and perceived the other coalition to be wealthier. This does not seem to have made a large difference. Although the eel sector was originally weakly organised, eventually this coalition also became well organised, by mobilising the sectors involved. Both coalitions had powerful leaders. Thus it seems that, regarding both strategies and resources, no particular discourse coalition was more successful or powerful. From the perspective of this paper, it is interesting to note that knowledge was apparently not a distinctive resource; each coalition was able to mobilise scientists in support of its discourse (cf. Van Buuren and Edelenbos 2004). Both strategies were successful in receiving attention and some support, albeit under different groups of actors.¹⁷

Consequently, the Minister of MANF found herself in between a majority of Members of Parliament who were susceptible to arguments of the 'fishery sector is not the main cause of eel decline' discourse coalition and wanted to give the eel sector a chance to become more sustainable, and the European Commission, which was less hampered by concerns other than eel stock recovery. This position led to MANF wavering between two discourses, accepting at first some of the arguments underlying the ecological discourse (in the first draft of the Eel Management Plan, which included a two-month closure), subsequently the 'fishery sector is not the main cause of eel decline' discourse (by accepting the alternative plan of the eel sector), and eventually the former discourse because the European Commission forced a decision on, and the implementation of, strict measures. The European Commission had not only legal power but also the regulation issued in 2007 to justify use of power. This eventually helped the 'closed fishing season is the best solution' discourse coalition to become dominant. Our case underlines the importance of external actors in overcoming a deadlocked process, stated earlier by Sabatier: "the tendency is for a 'dialogue of the deaf' to persist until external conditions dramatically alter the power balance within the [policy community]" (Sabatier 1988, p. 155, in Van Eeten 1999, p. 17).¹⁸

5.3. Explaining knowledge utilisation: scientists in the role of advocates

The case study demonstrates that scientific knowledge did not immediately translate into eel protection policy. Nevertheless, scientists seem to have been more successful in putting the eel decline on the political agenda than in contributing to the development of concrete, acceptable eel recovery measures. Disagreement about what should be done to restore the eel stock (e.g. in terms of escapement levels and policy measures) was not only found among stakeholders, but also among scientists. With their research, their statements and activities to bring their findings to the attention of politicians and stakeholders, scientists acted as advocates of what they considered the best way of restoring the eel stock, addressing eel fisheries or taking a broader perspective. This observation implies that in the analysis of knowledge utilisation, science should not be perceived as a given, a neutral object feeding the decision-making process (which is subsequently used as ammunition by competing coalitions), but that science itself may be value-laden and the product of political struggle (and hence far from 'neutral').

Until 2009, none of the discourse coalitions seemed powerful enough to gain dominance for either form of knowledge on eel protection. The intervention of the European Commission in 2009 implied that eventually the knowledge brought forward by ICES (in particular the advice to address eel fishery), and others, was considered more legitimate than the knowledge of, for example, Leiden University (which addressed more causes of the eel decline and potential measures to restore the stock).

6. Conclusions and discussion

We started our research out of curiosity about the controversial and deadlocked policy process aimed at eel stock protection, despite scientific concerns and, moreover, the fact that gradually all Dutch stakeholders had recognised the situation as problematic and urgent. An analysis of the discourses of actors involved and their power relations shed light on the nature of the controversies that eventually resulted in the polarised and deadlocked situation that lasted until 2009. The resulting 'dialogue-of-the-deaf' between coalitions can be explained by the existence of mutually exclusive discourses, competing for dominance (i.e. the acceptance by decision makers), none of which was able to gain precedence. The two opposing discourses are based on fundamentally different value priorities and basic perceptions about causal effects. Scientists could not contribute to consensus here, as they disagreed among themselves and associated themselves with different discourse coalitions. The European Commission's actions in 2003 (their statement to address the eel problem), 2007 (Council Regulation for protection of the eel stock) and 2009 (their threat to reject the Dutch Eel Management Plan) ended periods of stagnation, ultimately leading to the acceptance of the ecological discourse in Dutch policy for eel management.

Although the discourses of the coalitions are systematically analysed with argumentative discourse analysis, enriched with elements of ACF as well as complemented by Toulmin's structural model of argument, the tentative assessment regarding the power base of discourse coalitions poses a limitation to our research. Our qualitative assessment nevertheless is useful for understanding Dutch eel management decision making, and also underlines the relevance of argumentative

discourse analysis in the study of (knowledge utilisation in) natural resources management (cf. Runhaar 2009).

In addition, discourse analysis may have direct value for decision making for European eel management. The identification of discourses can act as a starting point for the exploration of new and shared problem framings and policy options, thereby reducing conflict due to enhanced understanding, consensus and compromise (Konchak and Pascual 2006, Renn 2006). The policy process on the Dutch eel management plan escalated when the debate focused on a particular measure (closure of the fishing season) and alternatives (such as addressing other anthropogenic sources of eel decline and the plans suggested by fishermen) were disregarded. This seriously reduced the search for compromises. On the other hand, the negotiations that started in 2005 that resulted in stakeholders' advice had not resulted in measures that were generally accepted either.

A careful, but not voluntary, exploration of policy options co-ordinated by a 'policy broker' who is accepted by all actors involved may reduce the chance of new controversies and deadlock situations in eel management in the Netherlands or elsewhere. A first precondition would seem to provide for some common ground regarding the problem at issue and the scope of solutions to be explored, or, as Van Eeten (1999, p. 192) stated, to provide "a structure which recasts the issue, thereby grounding the debate on new terms and making it more tractable for analysis, deliberation and negotiation. Science can then be employed on more fruitful ground" (see also Runhaar and Van Nieuwaal 2010). Recasting the problem may also promote 'joint fact finding' instead of discourse coalitions, each mobilising their own scientists. In this respect, further research is necessary on the types of actors (or institutions, such as so-called boundary organisations mediating between science and policy) who can promote these forms of co-operation, and under which circumstances they can be successful. Regarding the latter, our case study suggests that external 'pressures', such as the threats by the European Commission, may create windows of opportunity for policy brokers. Rules may also be important, for example, about where to put the 'burden of proof' (for a comparable case study, see Runhaar and Van Nieuwaal 2010). However, relatively little research has yet been conducted in this area (Runhaar and Van Nieuwaal 2010).

Finding ways to reduce conflict in eel policy is topical, because in the Netherlands as well as in most other Member States, eel management plans were and still are contested, and new controversies and deadlock may emerge in 2012, when Member States have to report on their policies and possibly adjust these (European Council 2007, EIFAC/ICES 2009).

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Notes

1. ICES, an international organisation with which over 1600 marine scientists are associated, is considered the leading independent authority on marine ecosystem and fisheries management, advising the European Commission and other governments managing the North Atlantic Ocean and adjacent seas.
2. In his paper, Feunteun (2002) provided detailed evidence of the decline in eel stocks since the 1980s; however, data on trends in eel stocks between the 1940s and the 1980s are not explicitly provided.

3. Such as exploitation by fisheries, habitat loss, migration obstructions from turbines and hydroelectric dams, transfer of diseases and pollution (Feunteun 2002).
4. See the Supplementary material document (online only) for further background information about the lifecycle of the eel, as well as the decline in the Dutch eel stock.
5. EIFAC is the United Nations' European Inland Fisheries Advisory Commission.
6. The association of actors with particular discourses is something which actors usually do not do themselves, but which is done by researchers. Discourses transcend real-world discussions of actors over how they frame related issues, for example, the causes of a policy problem and how it should be solved. Discourses thus can be considered 'meta-frames'.
7. Power has been defined in many different ways. In essence, power means the ability of an actor, or a group of actors, to influence one or more other actors (e.g. Howarth 2009).
8. In the Supplementary material we provide more background information about the institutional organisation of eel management in the Netherlands.
9. See <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/03/1332&format=HTML&aged=0&lg=en&guiLanguage=en>
10. EIFAC gave a similar advice.
11. Compared to a situation without fisheries, or other effects from human activities (MANF 2008a).
12. Although in section 2.2 we discussed that rebuttals may be part of argumentative structures (see also Figure 1), in this particular case no such rebuttals were found.
13. In terms of ACF, members are part of a coalition when they do not only adhere to a similar discourse, but also when they co-ordinate their activities or team up (see section 2.1). In this context, RAVON was the only research institute belonging to a discourse coalition, as it co-operated (and co-financed) activities such as publishing position papers, campaigning, research and advice to the MANF. During these activities, the actors involved (including RAVON) presented themselves as one coalition, with a common message.
14. These actors have conducted various studies on how eel fishery can be made more sustainable. For example, Witteveen + Bos currently co-operates with researchers from the Royal Netherlands Institute for Sea Research (NIOZ) and the commercial eel fishery on a model for decentralised eel management (www.combinatievanberoepsvisser.nl/duurzame-visserij/aalbeheer-op-maat.html).
15. For example, a Member of Parliament who we interviewed stated literally: "If we [the Netherlands] are the only [country] ending eel fisheries, it will not help. France will simply continue fishing".
16. The nature, water and recreational anglers' organisations and most scientists consider a three-month closure of the eel fishery not drastic enough, whereas the commercial eel fishery organisations consider it too drastic. As such, no party perceives itself to be a 'winner'.
17. Stakeholders and decision makers agree on this perception. For example, a Member of Parliament stated that: "The Ministry of MANF was prone to different kinds of arguments than the Dutch Parliament was. MANF was more oriented towards the nature and environmental organisations. Everything you hear influences you, but this time, for me at least, the arguments of the eel sector were more important. But you cannot claim that a certain strategy had more influence than the other one. Both sides tried to convince us with use of valid arguments".
18. In other terms, exogenous events such as the intervention of the European Commission but also the Dutch supermarkets' decision to stop selling eel created 'windows of opportunity' for particular discourse coalitions to become dominant (see also Runhaar *et al.* 2010).

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