

Influences of discourse on decision-making in EU fisheries management: the case of North Sea cod (*Gadus morhua*)

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Does public debate have an influence on decision-making in European fisheries management? Our premise is that for fisheries management to be viewed as legitimate, stakeholders should be included in the process. Because the first step towards stakeholder participation is letting their voices be heard, we analysed the public debate surrounding the management of North Sea cod, focusing on two aspects: the mixed fisheries problem of total allowable catch management and the causes of cod decline. Using standard social-science methodologies including discourse analysis, participant observation, and qualitative interviews, we suggest that the public debate has not had a direct effect on year-to-year management decisions. Still, it can be argued that the debate has influenced the attitude of those involved in the management system and, therefore, has had an impact on the changes in the management and advisory system that are taking place, although these take place at different levels and speeds than expected.

Keywords: CFP, discourse, EU decision-making, fisheries management, North Sea cod, policy, public debate, stakeholder participation.

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Introduction

To be viewed as legitimate, fisheries management practices should include stakeholder participation (Mikalsen and Jentoft, 2001). In this context, participation is the process through which the public takes part in, influences, and shares control over decision-making (Coffey, 2005). Indeed, there is growing awareness that resource users should be involved in decision-making if fisheries management is to be sustainable (FAO, 1998). Stakeholders, however, include more than the resource users, and can include any group or individual that has an interest in the exploitation or conservation of the resource. The problem, of course, lies in deciding exactly how such stakeholders with different interests can become a part of the process.

Until recently, the EU fisheries management system afforded little opportunity for stakeholder participation: stakeholders had no formal role and were relegated to lobbying in the margins of meetings. This issue was addressed in 2003 when, as part of Common Fishery Policy (CFP) reform, the Commission of the European Community (CEC) instituted Regional Advisory Councils (RACs). These RACs are now starting to play a role as advisors to the CEC in a complex management and decision-making system. Briefly, the CEC formulates proposals, which are scrutinized by national officials who advise member states' ministers, and the Council of Ministers makes the final decisions. Elements of information critical to the management process come from stock assessments and the scientific advisory framework provided through ICES. The results of stock assessments are disseminated and used as part of an interactive process

between decision-makers and the fishing industry, latterly the RACs, with scientists acting as consultants, explaining and extending the assessment information on request. Not all stakeholders can take part in RACs, however, nor are RACs viewed as truly participatory by everyone. Some stakeholders have refused outright to take part, on the grounds that the RACs are only advisory, while the CEC and the Council of Ministers retain the real power (Gray, 2005).

Given that fisheries management institutions still operate primarily top-down, the question of how stakeholders might, nonetheless, play a role in decision-making and policy is an important one. We know that there is an extensive and vocal public debate surrounding the management of fisheries resources. The question then becomes whether this discourse has any influence on decision-making and policy.

To answer this question, we must first consider aspects of the CFP, because this regulatory framework constitutes the background and basis for the national fisheries policies of EU member states. The CFP was established in 1983, after many years of negotiation (Holden, 1994). It is enacted through a highly complex and technical regulatory framework that provides for decadal review. Nevertheless, two elements are often presented as the basic principles of the policy: equal access and relative stability. Equal access stipulates that a fishing vessel from one member state is allowed to fish inside the 200-mile exclusive economic zone of any other member state (with special provisions applying inside the 12-mile zone). The combined sea area of the member states is therefore occasionally referred to as the "Community Pond".

However, equal access will lead to an expedient race for fish if fishing is not limited in some manner. Given agreements on access, member states required a mechanism to allocate resources that guaranteed fishing possibilities. This was resolved through the principle of relative stability, by establishing allocation keys that provide a mechanism for the division of total allowable catches (TACs) into national quota. The allocation keys (fixed percentages) are based on historical catches and applied on a stock-by-stock basis. Apart from some necessary changes because of the enlargement of the EU, these keys have basically remained unchanged since the agreement in 1983. Therefore, TACs, although now being applied to conserve stocks, were introduced primarily to implement the principle of relative stability. The TAC system is still a key feature of the CFP and greatly influences further attempts at reform (Schwach *et al.*, 2007).

We examine written sources and research material generated as part of the EU project Policy and Knowledge in Fisheries Management (Schwach *et al.*, 2007) to explain the influence of the public debate on North Sea cod (*Gadus morhua*) on the advisory and decision-making system for fisheries management. After describing methodological aspects, we analyse the structure of the debate. The evaluation focuses on two aspects: the mixed fisheries problem of TAC management and the causes of the decline of cod.

Methodology

Our methodology involved standard social-science research methods, including discourse analysis of the public debate and qualitative interviews. First, we examined the public debate related to scientific advice and management decisions for the North Sea cod fishery. The analysis drew on sources from Denmark, UK, France, the Netherlands, and Norway from 2001 to the end of 2004. The sources included national newspapers, the fishing press, newsletters, web-discussion fora, minutes from meetings, and interviews with key persons in the public debate; we identified participants, key issues, and discourses at national and European level. Next, we analysed the transcripts of 30 semi-structured interviews carried out with management officials and advisors in five member states and the CEC. For our analysis, we sought their opinions on scientific advice, the form it takes, the extent to which the advice is followed, and other influences on decision-making. The interviews showed whether managers were familiar with or considered the public debate in decision-making.

Other material examined and analysed included ICES Advisory Committee on Fisheries Management and CEC Scientific, Technical and Economic Committee on Fisheries reports, the Memorandum of Understanding (MoU, n.d.) between the CEC and ICES, plus other documents related to the ongoing development of fisheries management.

Our discourse analysis involved all sources to evaluate how claims about the environment (i.e. the state of North Sea cod) are used in debates among managers, scientists, and (other) stakeholder groups. We made sense of the claims expressed through how they related to each other and to other claims in a narrative form ("story lines"; Hajer, 1995). Story lines both influence and are created by the arguments (Wilson, 2001). Discourse analyses of scientific and other claims focus on the relationships between interests and beliefs about what is "true". The interests of stakeholder groups result from how they generate social power (Wilson, 2001). Therefore, an industry such as fishing, whose interests lie in remaining profitable, will tend to select facts that support their economic efforts, whereas an environmental

group, whose power relates to increasing the solidarity of its supporters, will tend to select facts that emphasize the seriousness of the problem. Managers and governments, whose powers and interest relate to their authority, will tend to select facts that increase the feasibility of using bureaucratic rules to manage nature. The underlying theory is that "people's interests and their beliefs about nature have an interactive and mutually reinforcing relationship" (Wilson, 2001).

Structure of the debate

Given the multiple levels existing in EU fisheries management, it is important to consider what level we believe the debate influences. There is no EU-level press outlet for the fisheries sector that encompasses a public debate, nor is there a powerful EU-wide discussion platform, apart from the consultation on the Green Paper preceding the revised CFP in 2003. The debate and its discourse themes are primarily manifest at the national level. We found that structure and content differ widely, and do so according to the importance of the North Sea cod fishery and the voicing capacity of different interest groups, even among fishers in the same country. Differences also relate to the culture of acceptance or contestation of natural science knowledge in the policy-making process.

It is evident that the management debate goes through an annual cycle that closely follows the formulation of scientific advice and decision-making. The first rumblings are heard in early autumn as the results of stock assessments become available, and the debate builds to its climax with the publication of the ICES advice and EU–Norway negotiations around the time of the Council of Ministers' meeting in December. It is during this period that the various stakeholders enter the fray: the fishers contest the science; the green groups call for urgent action; the policy-makers cite the science, including the finding that cod has not recovered. After decision-making, scientists conclude that their advice has not been followed, and the fishers feel ignored. Although it is difficult to generalize the public debate, there are some stakeholder themes that come to the fore of the public discourse on fisheries, TACs, and cod in November/December every year. These are listed and commented upon below.

Fishers contest the science

In the UK, headlines in the fishing press are dismissive of the science, referring to it variously as "bogus", "deeply flawed", or just plain "wrong". A range of opinions, related to diverse knowledge sources, is expressed. Individual fishers' views on the methods used to assess stocks, particularly survey techniques that they consider unsuitable for cod, in terms of areas surveyed, gears used, and length of tows, feature frequently. They cite their experience and knowledge of fishing techniques and cod distribution. Individual claims that there are "plenty of cod in the sea" or that the cod situation is improving are usually related to recent experience, particularly referring to incidentally high catch rates or comparisons made from year-to-year, and therefore having a short-term perspective.

Contestation of the science also focuses on the uncertainty of stock estimates, but usually in a general way, with comments such as "even the scientists say they could be out by 40% either way!" as well as comment on the managers ("yet the figures are still treated as if stock assessment is an exact science by bureaucrats

and politicians who are only too keen to shelter behind the science”).

Catch data are the lynchpin on which stock assessments are based, but the quality of these data and the models used are much criticized and debated by stakeholders across Europe. The discussion is mainly between fishers and ICES scientists, but industry representatives and other scientists not associated with ICES play an important role in most countries. The quality of catch data is considered by many, and identified by some as a major weakness of stock assessments (Box 1).

Box 1

It is obvious even to laymen that stock assessment can never be more than a rough and ready “guesstimate” of the true situation, given the enormous and mysterious complexity of the marine environment, and the uncertain nature of much of the data on which the calculations rely. The most sophisticated computer models are only as good as the data and assumptions that are fed into them, and if they are flawed, so will be the answers the models produce (*Fishing News*, 27 June 2003).

However, different stakeholders use this knowledge to develop different perspectives. In France, fishers argue about the uncertainty of data and resulting stock evaluations in order to postpone the adoption of measures. The distrust between fishers and scientists is mutual. According to fishers, scientists use inaccurate and obsolete data, but scientists mention that they have suspected substantial misreporting or under-reporting of landings associated with restrictive quota. Fishers also point to the problem of discards, which along with the landings, make up the total catch.

The debate in the UK is similar. Fishers frequently question the adequacy of the data used by scientists, particularly the results of surveys. However, misreporting or black landings tend not to feature prominently in the public debate. When they do, it is to emphasize the economic plight of the fishers and fishing communities (Box 2). Although the views expressed among fishers in the various member states vary to some extent (“science is deeply flawed”; “uncertainty of stock estimates”; “quality of the catch data”), they all fit into the supra-stakeholder theme of fishers contesting the science.

Box 2

There is not one guy I know that can hold up their hand and say they haven’t landed black fish. They are not doing this because they want to do it. They are doing this because they have to do it. Fishing is the lifeblood of the northeast. If you take it away, then the whole fabric of the community will crumble. The impact of the European quotas isn’t a disaster waiting to happen, it’s happening while I am talking to you (*Sunday Herald*, 23 November 2003).

Scientists conclude that their advice is not followed

Knowledge claims are based on scientific information. Scientists often enter the public debate to defend their work, or the work of colleagues, from the criticisms of fishers. This defensive reaction appears clearly when scientists, acknowledging some of the weaknesses of their methods, claim that the responsibilities are shared with the resource users, for example regarding the lack of reliability

of catch data. Scientists present information about their methods (the data used, details of surveys) as written reports, through articles and interviews published in newspapers, or in discussion meetings with stakeholders, which take place before and after the annual assessments and after the production of ICES advice.

At the same time, some ICES scientists, especially those aware of under-reporting of cod landings, are pessimistic about the reliability of both catch and effort data from the fishery. A particular issue for the fishing industry is the recent rejection of commercial catch per unit effort (cpue) data for cod and plaice (*Pleuronectes platessa*), data previously used to tune assessment models. Biologists argue that the data are unreliable, that cpue as an indicator of stock abundance is influenced by fishing behaviour, and therefore, they have to rely on surveys for signalling possible trends. Scientists’ apparent reluctance to incorporate commercial cpue data in their assessment models is used as an argument by the fishing industry to substantiate their claim that they and their perceptions of the stock are not being taken seriously by biologists and management.

Both scientists and fishers point to problems with assessments because of lack of information about discards. Although EU regulations in place require member states to provide discard data, not all these data are made available or are suitable for use in assessments. Discarding is highlighted by fishers as an inevitable result of management based on TACs and effort regulation. Instead, environmental groups highlight the obvious, that discarding is wasteful and has a detrimental effect on the wider ecosystem.

In the debate, scientists and fishers often seem to be trying to shift the burden of responsibility onto each other, particularly regarding the issue of data quality and reliability. The key features of the debate are linked to who is to blame: ICES scientists using unreliable data?; fishers providing false or incomplete data?; or is the management system, by successively reducing the quota, driving stakeholders not to reveal the true data?

The causes of cod stock decline are still debated among scientists, and their views may be nuanced. However, a few points summarize the general view as it appears in the public debate, of environmental groups and conservation departments especially: the cod stock has severely declined and is now in a very bad state from which it may not be able to recover; overfishing is the major cause, even if other causes have contributed to the decline; fishing is the only factor we can act upon anyway, and there is an urgent need for effective management measures.

From this perspective, the key question is the objectivity involved in establishing these facts, which tends to drive the discourse more towards the perception of natural variability and the state of the stock, rather than towards socio-economic drivers or management failure. ICES scientists usually do not take positions on the management system or measures to be implemented, arguing that it is not their role.

Fishers feel ignored

This theme in the debate can be partly explained by the discourse focusing more on nature than on socio-economic issues. In both France and the UK, some fishers say that the claim of scientists that they are the only ones who know about the state of the cod stock is incorrect, because they do not see the whole picture. Some say that fishers know better than scientists about the state of the cod stock, because they spend all their time at sea. However, they complain most that scientists do not consider the social or economic consequences of the measures they recommend to meet the goals set by management.

In all countries, fishers complain about not being involved in the scientific assessment or in the management process, and that their knowledge is not recognized or used as it should be, i.e. they are not listened to. For instance, when the closure of the spawning areas for cod introduced in 2001 displaced UK fishing effort and resulted in large catches and discarding of undersized haddock (*Melanogrammus aeglefinus*), the fishers involved in the fisheries asserted that they could have predicted this would happen, if only they had been consulted.

In the Netherlands, fishers do not always understand the disparity between their observations that there are plenty of young cod and the results of stock assessment and projections suggesting that there are not. This gap creates a feeling that they, and their knowledge, are being neglected. The complaint of not being listened to is shared among the different countries (Box 3). A French representative claims that the ICES scientists carrying out the stock assessments operate in their own closed world. He argues for alternative expertise and better cooperation with the fishing industry (Box 3).

Box 3

“European Commission consults professionals [fishers] in a formal way on the sustainable recovery plan but does not really listen to them” and “Men’s interests are considered after fish stocks’ interests” (Dachicourt, 2003).

However, some expressions in the media also suggest that a new spirit of cooperation has emerged between the fishing industry and scientists. Alex West, on his appointment as President of the Scottish Fishermen’s Federation, stated “I don’t want to start a crusade against the scientists—I want to build bridges not conflicts—but it is absolutely essential that the scientific assessments are accurate because the politicians have so much faith in them” (*Fishing News*, 23 July 2004). This statement is nuanced in that it relates both to data quality and the balance of power within the decision-making system.

One common point that can be observed among fishers and scientists is that both enter the debate from a mainly defensive position. Fishers defend their rights to make a living, and argue that their professional activity is not harming the stock, or that they are not “solely to blame”. Scientists often react in the media to criticism by explaining their methods and defending their results.

Developments in the decision-making and advisory framework

Over the past five years, the introduction of closed areas, limitations on days at sea, and the development of the cod recovery plan have affected the decision-making cycle, adding to its complexity and protracting the period over which discussions take place. In theory, recovery plans and multi-annual management plans for a variety of stocks should eventually obviate the need for annual discussion about TACs. Nevertheless, as CEC officials commented, the importance of the TAC and of the decisions taken by the Council of Ministers has not yet diminished, although the internal EU negotiations on cod management are increasingly conditioned by the political EU–Norway agreements (Box 4).¹

¹Following standard social science practices of protecting informants, sources for the quotes obtained through interviews remain anonymous.

Box 4

a) The member states have at this stage not been willing to give away their responsibility. . . . [and] it has not been possible to change that system yet. But still more and more of these TACs will [in the future] be based on multi-annual management plans [whereby the EC will have a greater role] (EC manager, 2004).

b) The EU–Norway negotiations are becoming more and more difficult. The Norwegian Minister of Fisheries comes under an awful lot of pressure from the industry to try to secure as good a deal for their fishers as possible. So they have a list of things they want and they won’t shift. And if they don’t get their way . . . they walk out (EC manager, 2004).

The interviews with managers focused on how the formulation of scientific advice influenced policy. They showed little evidence that the debate affects decision-making, such as that regarding the TACs for the next year. Those managers referring to the debate thought that it was played out at the member state, not the EU, level (Box 5).

Box 5

My personal opinion is that most member states have the objective of having minimum political turbulence. So you must be able to present the decision you take each year as a victory to the industry at home. Therefore, you have to change the Commission’s proposal in one direction. A few member states have a different policy, like Sweden for cod in the Baltic. It is very clear that most member states have a pre-determined agenda. Economically, fisheries mean nothing (rarely more than 1% of the gross national product), but politically fisheries policy is still an important issue because it raises debate in parliaments and offers appearances on TV and in the press (EC manager, 2004).

Some managers also mentioned stakeholder influence, indicating that the fishing industry is given the opportunity to be heard directly at the EU level (Box 6). Having such opportunities for direct input, however, is not the same as having the discourse directly influencing policy decisions.

Box 6

I would characterize the present situation as offering the industry an entry into the debate at a much earlier stage. By giving them the opportunity to bring forward alternatives, again and again the recovery plan proposals are brushed aside. . . . What we want to do is clearly to challenge the industry. To say what’s your idea? Over what timescale do you think recovery should take place? Are you aware of the risks if you go slowly? This debate should be held in an open way with scientists present, but before we make our proposals (EC manager, 2003).

In the interviews, most managers took the position that, broadly speaking, they followed the scientific advice. However, some conceded that other factors are taken into account, and

that national governments, through the Council of Ministers, do modify the CEC proposals. The effect of political interest in some environmental issue can also play a role in how other related issues are perceived. In the UK, for example, some contend that the fisheries debate assumes a wider dimension, in relation to membership of the EU (Box 7).

Box 7

a) You can see green governments go one way, the subsidy junkies go another way, the sort of Northern European group of countries go another way—so clearly that is a function of the national government (National manager, 2004).

b) The political dimension in the case of cod is strong. Politicians like Tony Blair take fishermen seriously as a public that potentially could affect the discourse on the EC. The public image of fishermen in the UK is different from the one elsewhere ICES scientist (National manager, 2004).

Oliver (2005) argues that the impact of his own newspaper, *Fishing News*, as far as having any direct effect on policy, is zero (Box 8).

Box 8

[*Fishing News*] is a voice of a weak and politically powerless industry and, like the industry itself, can safely be ignored by policymakers. Through its pages, for year after year, fishermen and their representatives have railed against the iniquities of the CFP, against the waste and ineffectiveness of the quota system, against flag ships, against industrial fishing, against the politicisation of fisheries management, against bureaucracy, and against flawed science (Oliver, 2005).

Much of the public debate on cod can be seen as a broad critique of fisheries management under the CFP. The issues raised include mixed fisheries, TACs, effort management (and the relative stability problem), the lack of fisher involvement, and factors other than fishing as responsible for the plight of cod. Many relate to the perceived need for change to the management system and the requirement to incorporate ecosystem considerations into the advice. These themes were also identified by managers and advisors in interviews.

Two case studies

Mixed fisheries

A recurrent theme in the public debate, and one common to the debate in different member states as well as the subject of ongoing dialogue between ICES and the CEC, is the issue of TAC management in a mixed fishery. During the period investigated, fishers were vocal in their insistence that demersal species are inevitably caught together in mixed fisheries and, therefore, that their management via single-stock TACs did not make sense (Box 9). There was also general consensus among fishers in this respect.

Box 9

a) Even with today's brilliant technology, no skipper knows what species he has caught until the gear comes up, so you can't operate a single species quota system—it's the logic of the mad-house (*Fishing News*, 23 February 2001).

b) [Reidar Nilsen, a leader of the Norwegian Fishermen's Association] does not believe that there will be a full stop to the fishery. Besides, it is impossible to fish other species without getting cod as bycatch ... he adds. (*Aftensposten*, 24 October 2002).

This debate can be understood better by considering the related issues of equal access and relative stability. The CEC, of course, cannot simply abandon the TAC and quota system outright given the CFP and its cornerstone, relative stability (Box 10), although this issue is considered by Holden (1994) and others to be at the heart of the problems confronting conservation policy.

Box 10

a) Relative stability is an important benefit of the CFP in as much as it is a mechanism for dividing up a common resource and that is hugely important (National manager, 2004).

b) Perhaps the biggest stumbling block in any reform of the CFP is relative stability and the need to maintain the existing fishery and fishing opportunities which tends to force you into an output or catch-constraint system. There doesn't seem to be any prospect for changing that at the moment (ICES scientist, 2004).

However, the complaints are being taken seriously, and steps are being taken in the direction of fisheries-based rather than stock-based advice. For example, ICES changed the structure of its advice. One ICES scientist discusses this reform process (Box 11).

Box 11

Advice is to be recast in a fisheries context rather than a stock context. Major problems have appeared over the last three years with different and conflicting advice being provided by ICES for different stocks that are caught together and cannot be managed separately. The new text [of the MoU] places an obligation on ICES in the first instance to provide advice that is consistent for groups of stocks caught together, and thereafter to collaborate with customers in developing fleet-based advice (ICES scientist, 2003).

Revisions in the form of advice have generally been introduced in close cooperation with the customers. Although the MoU may give the impression that the CEC is putting pressure on ICES to structure its advice differently, the initiative came from scientists who were dissatisfied with the single-species approach, which had been "forced upon" the advisory system by the CFP. Under Annex 2 of the MoU (n.d.), the first item emphasizes the fisheries-based nature of the standard (recurring) advice required: "For each sea area, ICES shall define groups of stocks within which ICES shall ensure close quantitative consistency between the advice given for each stock. ... This should be considered a first step in the development of fisheries-based advice. ... ICES will be invited to explore during the course of the agreement how advice may

be further developed to advise on changes in fishing practices for defined fishing fleets”.

Although mixed fisheries advice may not yet be possible, there is an obvious desire for such advice. Placing this topic as the first item on the agenda testifies to its importance.

Fishing vs. other factors

The core question of “fishing vs. other factors” as being responsible for the decline of the cod stock featured in many national debates. A variety of environmental and anthropogenic factors have been identified or implicated, but the amount of emphasis put on each of these varies among countries. Climate change as a cause for stock depletion is a key issue in the UK and France, and it is also mentioned in the Netherlands and Denmark (Box 12).

Box 12

Climatic change is playing its part. We know that in the southern North Sea the failure of food source of the cod larvae has led to a failure in cod recruitment. More and more fish from warmer waters are appearing in the North Sea. We have noted increases in the red mullet and bass fisheries. Other strangers have been noted including a swordfish washed up on the Lincolnshire coast and trigger fish” (J. Linstead, chief executive of the Grimsby FPO, *Fishing News*, 7 December 2002).

The idea that other fisheries, particularly industrial fisheries, affect cod either directly or through effects on the ecosystem features in a public debate that crosses national boundaries, but the perceptions differ. French and UK fishers are highly critical of industrial fisheries, whereas these fisheries are seen by Danish fishers as clean, with a low percentage of bycatch and discards. Other environmental issues have a more national or local dimension: impact of predators such as seals (UK) and cormorants (Norway); pollution caused by oil drilling (Denmark) and platforms (Norway); the effects of reduced discharges of phosphates on productivity (the Netherlands).

The CEC recognizes this criticism that factors other than fishing may contribute to the low stock levels, as do ICES scientists (Box 13). These issues are reflected in one of the Annexes of the new MoU (n.d.): “When providing its advice ICES shall take account of and keep under constant review the following: information from, and perception of, the fishing industry; ecosystem considerations; environment and hydrologic conditions; regulations in force that affect fishing; factors affecting fishing operations and information from the fisheries; development of fisheries technology and relevant performance changes; other relevant factors that affect fishing or fish stocks”.

Box 13

ICES advice is often criticized ... for not including information from fishermen, ecosystem considerations, considerations about assessment precision, environmental changes, misreporting and changes in fishermen’s practices. Such practices should *a priori* be considered by ICES before advice is given, and this should be written as an obligation. In many cases this is already done routinely (ICES scientist, 2003).

The CEC is also taking steps to enhance fishers’ ability to affect the advice given. In the MoU, the CEC tasks ICES scientists to attend RAC and other meetings aimed at improving dialogue with the catching sector. This obligation was backed up with a financial commitment to pay for travel and *per diem* to RAC meetings, although the greater part of the expenses (the time spent) is not paid for. Further, the MoU acknowledges that fishers’ perceptions must be considered when generating advice. Of course, intent is one thing, practical implementation is another.

Discussion

Conventional wisdom says that decisions made in the political sphere follow public debate. As Al Gore assumes with his Alliance for Global Protection, “where public opinion goes, federal policy will follow” (Little, 2006). The debate could increase the social power of stakeholders involved and have an impact on policy. However, is there any hard evidence that discourse surrounding the management of North Sea cod has influenced management policy and decision-making?

It is probably safe to say that if the scientific advice on cod in recent years to reduce catches to zero had been followed to the letter, little if any fishing would be taking place in much of the North Sea. However, the evidence to argue for a direct effect of the public debate that resulted in the departure from the zero-catch advice is limited. The public debate about the deficiencies of the science does not appear to have influenced the year-to-year decisions about TAC directly, at neither the advisory stage nor the stage when proposals are made. CEC managers largely follow scientific advice in formulating their proposals to the Council of Ministers. When the agreed TACs deviate from the proposals, the political reasons are usually not given, but they are likely to be economic or social rather than biological. Therefore, it is at the level of individual ministers that national responses to the public debate may influence the decision-making, rather than at an EU level. This is consistent with the national dimensions of the debate and how it varies among member states. Although there is broad agreement on the importance of general themes, such as the problems with single-species TACs in mixed fisheries and factors other than fishing that may be influencing cod decline, there is little consensus about the specifics across the borders. With such variation, it is difficult to raise a powerful voice. Without a powerful voice, it is difficult to have influence.

More important is how decisions are made in the fisheries management process. Through the RACs, the CEC is making an effort to include the voices of stakeholders in the management process at a regional level, and to consider these when formulating proposals for measures. However, the final decisions are still made by the Council of Ministers, whose members have different national stakes and interests. The negotiation process involves balancing these interests to achieve agreement. Therefore, the influence of the public debate may be subtle and not easily detected using the methods and type of data employed here.

In the case of North Sea cod, the public debate voicing dissatisfaction at a national level may not seem to have brought about a noteworthy change in management. However, changes may be taking place at a different level and a different speed than expected. Clearly, changes in the production of scientific knowledge for advice—a fisheries-based rather than a stock-based approach and the incorporation of wider ecosystem considerations—are now being implemented by ICES in close cooperation with the CEC. Consequently, while the public debate may not have affected

TAC proposals directly, it can be argued that it has affected the attitude of all those involved in the management system. Although Oliver (2005) may believe that *Fishing News* has had little influence on the formulation of fisheries policy, the overall debate may serve its purpose in bringing about incremental change.

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