

CEVIS

Comparative Evaluations of
Innovative Solutions in
European Fisheries Management



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The CEVIS Policy Implementation Plan

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The CEVIS Policy Implementation Plan

This Policy Implementation Plan is meant to summarize the basic results of the CEVIS project for European fisheries policy makers. We did not feel that it was appropriate to try to create a step-by-step plan for implementation of the various fisheries management innovations we have studied. Rather we present the lessons that our research has yielded about what needs to be considered when managers decide to implement these innovations in specific contexts in Europe.

1 Problem and Research Strategy

The Comparative Evaluations of Innovative Solutions in European Fisheries Management (CEVIS) Project was a three year exploration of how science can address policy questions at perhaps their most general level. With an eye toward possible implementation under the CFP we evaluated four management innovations that were receiving the most attention in current discussions of potential changes in European fisheries management at the time we developed the project:

- Participatory approaches to fisheries governance;
- Rights-based regimes;
- Effort-control regimes; and,
- Decision-rule systems.

While we use the term ‘innovations’ to indicate that these approaches to management had not been used extensively in Europe at the time we developed the project, these were not new or untested ideas and all of them had been incorporated into modern fisheries management regimes in developed countries. All of them were also being widely discussed within Europe as options for the Common Fisheries Policy (CFP) as the CFP moved towards a more adaptive and ecosystem-based approach to fisheries management.

The project had two phases. The first phase used a cross-disciplinary approach. During this phase we carried out four in-depth studies of areas outside of Europe where innovative fisheries management regimes have been implemented. These were New Zealand, Canada, Alaska, and Iceland. The visits were made by teams that included at least one social scientist and one natural scientist. Cross-disciplinary teams carried out the research using social science methods based on carrying out and analyzing in-depth interviews. They did a literature review of fisheries management in the area and then made visits of approximately two weeks where they interviewed various stakeholders. These areas were chosen because they had implemented at least two of the innovations that CEVIS was interested in investigating. Chapters Two through Five of this book are the reports of these studies.

The second phase was carried out in disciplinary working groups and took a basically multi-disciplinary approach. Each working group focused on one of the objectives identified in the original project call to be used as the basis of the evaluation of the innovations. In order to get a handle on the objective described in that call as ‘robustness with respect of varying conditions’ we decided to focus on the ‘biological robustness’ of the fish stocks and the ‘social robustness’ of the management institutions. So the disciplinary working groups were four: two run by economists examining the innovations with respect to economic efficiency and costs of management; a group of biologists examining the innovations with respect to biological robustness; and, a group of social scientists examining social robustness. All four

groups used data from Europe, including the Faroe Islands. Their assignment was to identify and test specific hypotheses about the relationship between the innovations and their objectives using the methods and data that could be feasibly applied from their discipline.

The approach we took was predicated on the following levels of analysis:

- Social robustness would be examined at the level of the fishing community;
- Economic efficiency would be examined at the level of the fleet;
- Biological robustness would be examined at the level of the fish stock; and,
- Costs of management would be examined at the level of the polity.

2 CEVIS Results

The results of CEVIS have been published in the form of a book entitled Comparative Evaluations of Innovative Fisheries Management: Global Experiences and European Prospects, which is forthcoming from the Springer Publishing Company. This summary is abstracted from the introduction and conclusion of that volume. The overall results are extensive and complex. This summary is not meant as an alternative to reading the more detailed discussions of issues of interest. However, it does provide a shortcut to the main findings for busy people interested in general fisheries management policy. The section is organized by the four main innovations and offers a few general findings about each.

2.1 PARTICIPATORY GOVERNANCE

1. Participation can increase the quality of many aspects of fisheries management.

Participation in fisheries management may take many forms, and in this book they include consultation in regulation questions, local management, fishermen's contribution to the knowledge base, and consultation on the overall objectives and means. Participatory governance can increase the quality of many aspects of fisheries management, including increased support of the system and better conflict management. The case studies on New Zealand, Canada, Alaska and the Faroe Islands revealed pride among management stakeholders. It is worth noting, however, that in many cases after a set of institutional changes the group of stakeholders that remains involved is smaller than before and the voices of those who are excluded are no longer heard. Even in broadly participatory programmes the highest positive regard from stakeholders for the system will be from the representatives of stakeholder groups rather than grassroots members. Of course, they are the voices of their group and are the ones that managers have to deal with most directly.

The Baltic case shows what may happen when innovations or new forms of regulations are implemented in a top-down fashion. The management system lacks acceptance and trust and fishermen comply much less frequently with the rules. A fundamental distrust may make any change difficult to accept and thereby hamper institutional learning. Participatory governance may thus help manage conflicts, which are increasing and spreading with the advent of spatial management being carried out in the context of broader marine spatial planning. Participation and trust can also create institutional contexts in which it is easier for people to behave responsibly and thereby have a positive effect on biological robustness. The Community Management Boards in Canada demonstrated increased responsibility for the resource and improved the commitments to scientific advice. A similar sense of responsibility was observed in the Alaska case, where scientific advice enjoyed trust and respect in the participatory TAC-setting process in the Fisheries Management Council.

2. Excluding the broader civil society may reduce gains from participation.

While almost all CEVIS cases included some form of participatory governance, both European and non-European cases include examples where representation of organisations from civil society is limited. The civil society may be less relevant in the direct management of the fishery. For example direct participation by civil society in the Biesheuvel Groups in the Netherlands or the Community Management Boards in Canada, where day-to-day conservation is acted out, would have less impact on reaching fisheries management goals than it would in the European Regional Advisory Councils where broader conservation goals are set. A relevant issue for future Europe is to discuss the role of environmental NGOs and civil society in general and at what scale their influence is most relevant. The Alaska case exemplifies that environmental organisations have used campaigns, court cases and eco-labelling as tools to influence public opinion. However, they also expressed a wish to have a voting member on the North Pacific Fisheries Management Council, implying that they did consider a role in negotiations as fruitful for achieving their objectives.

3. Participation is important in science and data collection as well as management.

Participatory governance can also imply changes in the role of science from simply ‘telling the answers’ to cooperation with stakeholders on the knowledge production and evaluation. Icelandic fishermen decide half of the fishing locations for the scientific ground fish survey. Alaska stakeholders evaluate factors to ensure optimum yield. Canadian stakeholders work closely with the same set of scientists over long periods of time in facilitating stock assessments. The fishing industry in the Faroe Islands has a central role in evaluating the scientific advice for effort regulations, and the fishing industry in New Zealand has the responsibility to provide the necessary scientific basis for quota decisions. Participants in all of these exercises report that they increase the trust in scientists and confidence in their results, while scientists report that they are able to maintain scientific quality.

In CEVIS, the EU cases on the interface between science and stakeholders focus on the quality of catch data, i.e. discard data and illegal landings. Cooperation in these cases implies improvement of data in the scientific stock assessments. In terms of biological robustness, the studies on discard data suggest that it may be more important to identify and address possible sources of bias than to increase the sample sizes, but that biological robustness may not be affected when only immature fish is discarded. Cooperation to improve the catch data can also improve the economic performance of the fishing fleet. These results were conditioned on a TAC regime as the simulations indicated a slightly negative effect on economic results in an effort scenario. Getting proper data on management costs has been a challenge, but in the Spanish Basque case, the administration costs increased when the RAC was created. It is too early to conclude whether the increased costs will be permanent, or whether these are implementation costs.

2.2 RIGHTS-BASED APPROACHES

4. Transferable rights increase economic efficiency.

Increases in the qualities of fishing rights such as transferability, security and durability clearly increase economic efficiency. This is shown theoretically (Chapter Eleven) and empirically in the cases where Individual Transferrable Quotas (ITQs) have been implemented. These characteristics have developed a sense of ownership and have generated an involvement in management and enhancing of competitiveness. Further, it appears that the rights-holders are more concerned about protecting the resources and environment. An obvious benefit with rights-based systems is that it makes planning easier for rights owners. In Iceland and Alaska, this planning has resulted in efficiency gains, especially with regard to

processing. This is particularly so in the latter case as the management system moved away from a dangerous race-for-fish. In Nova Scotia those Community Management Boards that do not allow transfers of IQ among members have had many more problems dealing with exits from the fishery than those that do.

The case studies show several examples where rights are given in exchange for increased responsibilities of the rights owners. The Alaskan cooperatives, the Biesheuvel group and the Canadian Community Management Boards were given the responsibility to do local level management, while the New Zealand industry had to provide and pay scientific advice. The extra burden has been possible to bear economically. In several of the cases the profitability of the fisheries due to stronger rights has enabled the industry to shoulder additional management services, and hence reduces costs to the public.

5. Rights-based management programmes can and should have a flexible design.

There are many aspects to take into consideration when designing a rights-based management programme, including the nature of the property right, management units, determination of total allowable catch, monitoring and enforcement, need for other regulations, rent extraction and cost recovery and initial allocation. The Iceland and New Zealand cases illustrate that ITQ systems can develop over time so that sufficient flexibility should be built into the ITQ systems to be able to amend and adjust rules. In New Zealand the initial allocation was in fixed tonnage, which had to be changed to an allocation in percentages of the quota.

The case studies show that rights-based management systems change over time and that flexibility of the system combined with institutional learning improve this process. The systems of the North Sea, the Faroe Islands and the Western Shelf demonstrated capacities for institutional learning and for keeping a fairly high stakeholders' acceptance among the commercial actors. However, the institutional learning within the rights-based management RBM systems was mostly geared towards making rights more tradable and/or secure or exclusive. Future learning may thereby be reduced since rights-holders will want to maintain the value of their investment in the rights. The ITQ system in Nova Scotia has reduced potentials for adaptive management by locking ecological realities that evolve either naturally or as a result of greater scientific understanding into hard institutional boxes. A fish stock is an ecological reality that is hard to define and that interacts with other ecological realities. Property rights are powerful social constructs with strong implications for policy. Their treatment is much more likely to be determined by courts according to the principles and precedents of property and finance, than by marine managers seeking to take an ecosystem approach.

The initial allocation of quotas has proven to be especially difficult regarding legal aspects, where national rules of equal treatment, the right to a free choice of occupation and the protection against deprivation of property have challenged ITQ systems. Actors that have not received rights may perceive the system to be unfair. The equity problem was partly solved in the Alaska case by buy-out programmes and by offering alternative economic opportunities. In both the Canada and Alaska case though, most of the controversy in relation to the rights-based system stemmed from the initial allocation.

6. Transferability of rights has social costs that it is possible, but difficult, to mitigate.

When rights-based management is introduced it may be an important policy goal to avoid the concentrations of quota either geographically, or in numbers of owners, or both. As in the New Zealand and the Iceland case, the ITQ system in Nova Scotia has intensified the organizational and geographical concentration of the industry. It has also shifted more of the burden of reducing excess capacity to crew members than is perhaps fair. Attempts to reduce

these negative impacts through the design of the system and closely related policies have had mixed results and remain controversial. Limits on transfers within groups have reduced concentration in the North Sea and Canadian cases. In the UK some mechanisms have been deployed to favour retiring skippers by maintaining their rights even when they leave the trade. These mechanisms are, however, criticized for creating a class of ‘slipper skippers’. Furthermore, when nations aim at protecting fishing communities and own national interests, care must be taken to avoid infringement on European Community law and the EC Treaty. State aid of various forms and ways to shield quotas from being bought by other nationals may not comply with existing laws and agreements. Limits on transferability create a definite cost in economic efficiency. This is directly reflected in the prices of individual quotas which are lower where transferability is limited than where it is not. Determining what the cost in efficiency actually is for some degree of limits on transferability remains a critical research question.

7. Transferable rights do not reduce capacity but rather make rapid capacity reduction smoother and more humane.

The New Zealand case shows that ITQ systems do not necessarily reduce capacity; capacity was reduced in both the Canadian ITQ system and the Alaska cooperative case, but the reductions cannot be directly traced to the ITQ system. In Alaska there was a buy-out and scrapping programme while the main engines for the reduction were much smaller quotas and the introduction of effective enforcement. The tendency of some stakeholders and even the general public, which we found particularly in the Icelandic and Canadian cases, to use ITQs to explain all the changes in population and employment patterns over the past two decades is a gross oversimplification. The basic lesson seems to be that it is the enforcement of restricted quotas or other fishing opportunities that is the real driver of a reduction in fishing capacity. While not minimizing the problems of equity and pain involved in initial rights allocations, transferable property rights do make the radical capacity reductions that are sometimes required less chaotic and more humane by providing alternatives to bankruptcy as the mechanism for exits from the fishery that are being made unavoidable by the enforcement of restrictions on fishing.

2.3 EFFORT CONTROL

8. Carefully designed MPAs increase biological robustness but with economic costs.

Simulations suggest that MPAs generally have a negative effect on the profitability of most fleets over a period of 10 years. MPAs create increased costs because of fewer options in fishing locations while at the same time reducing short-term catches. This also includes the Danish fleet except that some small fleet segments do show increased profit, likely based on advantageous location vis-a-vis the MPA. Further simulations indicate that spatial and/or temporal closures as a supplement to either TAC systems or effort control improve biological robustness. However, the robustness is very closely linked to how the effort is re-allocated between fleet-segments, areas, and seasons, and is also sensitive to the assumptions in relation to fleet specific catchability. Evaluations of the effect of closures thus require high resolution information on the actual effort allocation by vessel and about fleet behaviour.

9. Effort control increases biological robustness when the link between effort and mortality is controlled.

Simulation studies indicated that effort-based management is more biologically robust than TAC regulations, but that these results are conditioned on allowing sufficient year-to-year variation in effort. Explanatory factors are that advice for TAC-based management is more sensitive to knowledge uncertainties and that effort control results in less discards.

In the case of direct effort management, biological robustness is found to be conditioned on monitoring and controlling the link between fishing effort and fishing mortality. Such a control is challenged by the dynamics of species and fleets, but also environmental factors, all of which influence the relationship between effort and fishing mortality. An effort regime can account for such influences, e.g. by including additional measures on allocation of effort in certain seasons and/or areas. The Faroese case is a counter example where a failure to monitor and control increases in capacity has hampered biological robustness.

2.4 *DECISION RULE SYSTEMS*

10. Adaptive rule-based systems can increase biological robustness.

Implementing an adaptive approach in harvest control rules has the potential to improve the biological robustness in TAC regimes. This was shown by a simulation study where the TAC was adjusted within the fishing season by including the most recent information. In addition, long-term catches increased. Given the world-wide struggle to implement the ecosystem approach, the management of Alaska groundfish offers a rather pragmatic contribution: an upper limit to all catches in a given ecosystem. The more complex Traffic Light approach in Canada was tried and put aside because it was too complex to give clear guidance, however it is being experimented with again in shrimp management. The Alaska case suggests that TAC regulations can provide a precautionary harvest of groundfish, but that the success of a TAC regime also depends on management measures to make a harvest control effective. The TAC setting process is supported by most stakeholders, the exception being the environmental NGOs who call for greater consideration to reducing the ecosystem impacts of fishing. The same is true in the Regional Advisory Councils, where EU stakeholders are getting a role suggesting and evaluating decision rules, but where environmental NGOs also feel that their participation could be strengthened.