



Conclusions recommending appropriate systems of sea tenure for future fisheries management, arising from the study: 'Traditional fishery knowledge and practice for sustainable marine resource management in Northwestern Europe: a comparative study in Ireland and the Netherlands' (1994–1997)¹

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Summary of the study³

This human ecological case study examined the relationship between fishing communities and their marine resources in Ireland and the Netherlands. It is interdisciplinary in nature, incorporating the disciplines of marine zoological ecology, anthropology and sociology. The ecological relationship between the selected fishing communities and their marine resources was studied by examining traditional fisheries knowledge and practice. This approach is based on indigenous knowledge systems research. Three contrasting study areas within each country were selected and their geographic, geological, demographic and historical background discussed. Traditional fisheries knowledge was recorded by means of a two stage interviewing process, during which a total of 166 interviews were held. Eighty-four qualitative interviews were carried out; 15 in Inishmore, 9 in Inishbofin and 18 in Dingle comprising the Irish study areas; 7 in Katwijk, 10 in Urk and 5 in Goeree, comprising the Dutch study areas. A further 11 and nine background interviews were carried out in Ireland and the Netherlands, respectively. From the topics recorded in the qualitative interviews, a quantitative questionnaire, containing 119 questions, was compiled. Sixty-two questionnaires were completed, 31 each in Dingle and Goeree. The traditional fishery knowledge recorded by the qualitative interviews was discussed under similar subject groupings for each of the six study sites. The results from the quantitative questionnaires were analysed by means of multivariate statistical analyses for category data.

One of the major findings was that the principle of sea tenure, in combination with appropriate social structures, forms an important basis for sustainable marine resource exploitation. The regulation of fisheries was desired in all six fishing communities, but equal enforcement in all regions was stressed as being essential. Fisheries regulation enforcement was not perceived to be equal within the European Union. Markets were seen as the main driving force behind fishing strategy decision making by fishermen. Communications between the fishing communities and fishery authorities were felt to be insufficient. Quantitative data indicated that within the fishing communities of this study, traditionality was positively related with sustainable opinion and practices. A cognitive model of marine resources exploitation, containing five main areas that influence the relationship of fishing communities and their marine resources, was presented. A list of 49 recommendations for future sustainable marine resource management was drafted (see also: <http://homepage.eircom.net/~eufisheries/>).

Sea tenure

Sea tenure is the partitioning of marine resources among the fishing communities that use these resources. The sea does not have boundaries as exist on land. Partitioning of marine resources can be achieved by coming to agreement within and between units of social cohesion. The Irish fishing communities of the study divided the shore and inshore areas and so partitioned the seaweed and lobster resources. These arrangements arose

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1. The research work was carried out based from the Anthropology Department of Leiden University in the Netherlands and also backed by the Department of Zoology, National University of Ireland Galway, and funded by the European Union.
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 3. Summary and explanation of conclusions on sea tenure in English and Dutch, as well as the full report in English are available on the Web at: <http://homepage.eircom.net/~eufisheries/>

between groups of local communities, so units of social cohesion existed on the two islands and the peninsula. Agreements for finfish involved a geographically greater social unit as these resources range over a greater area. In the case of Galway Bay this included Inishbofin to the north of it, as it was also visited by the Claddagh fishermen from Galway city. Arrangements arose between the fishing communities of Inishmore, Inishbofin and the Claddagh, whether by coercion or consent, but the social unit included this whole area. When fishermen from other countries entered Irish waters, Spanish, Dutch and French fishermen came to certain agreements with Irish chieftains about landing and mooring rights (Went 1949). This occurred as early as the 15th century and most likely before that. These non-Irish fishermen paid the 'owners' for this right to use the Irish marine resources.

In the case of the Dutch communities in more recent years, national fishery regulations had virtually complete control over the manner in which fishermen in Katwijk used their marine resources. The unit of social control was very much on a national level.

Fishery agreements within local social units are also characteristic of many other fisheries, such as those controlled by villages on Pacific islands (Ruddle 1988, 1994), Japan (Ruddle 1989), in Canada (Davis 1984), in Australia (Davis 1989) and in many other locations around the globe (Durrenberg and Palsson 1987; Cordell 1989; Ostrom 1990; Dyer and Goodwin 1994).

Fishing is now, however, also carried out on a global scale with fishing fleets of large, high technology ships travelling the oceans (Arnasson 1993; Barcena 1994; Burke et al. 1994; Meltzer 1994). In many cases, local fishing communities share their resource with each other on a national and also on an international level. Agreements and cooperation have to be reached on all these levels in order to achieve sustainable marine resource utilisation.

Traditional local agreement and control played an important role and a lesson should be learned from this type of social structure. The tragedy of the commons was not that common, until fishing grounds were seen and used as a common resource. Social cohesion is an essential part of fishery systems because boundaries are very vague at sea and it was the social unit that substituted agreements and cooperation for boundaries.

The factor that was of prime importance to the respondents in any system of regulations was that the rules would be enforced equally everywhere. This used to be the situation in the traditional

social unit, because each person knew what the other person was doing. Equal enforcement of regulations, leading to equal compliance of regulations, comes about when they are part of a social unit which acts cohesively, and this, in the opinion of many respondents of this study, is not the case with the EU's Common Fisheries Policy. The respondents did not feel that all EU fishermen were part of one cohesive social unit, or that they had influence over the formation of future policy.

Reasons for the recommendation of sea tenure

The conclusion reached was that the root cause of many of the problems of the European Common Fisheries Policy was the unpredictable nature of the fishing resources.

This unpredictability, the fishermen felt, was not due to the sea's inability to consistently produce fish, but due to the changeable nature of EU fisheries management decisions and the unequal manner of their implementation. In fact, most Irish as well as Dutch fishermen in the present study thought EU fisheries policy was a shambles.

The combination of unpredictable quota levels and the uncertainty surrounding access of fishing fleets to the various EU fishing grounds meant that fishermen felt they had to catch as many fish as they could get away with, because they did not know what the situation would be next year. If they did not catch the fish now, someone else would.

Many of the fishermen said they realised, more than anyone, that the way they were fishing was not sustainable in the long term, and furthermore that they resented being forced into this position by national and international fisheries regulations. The Dutch fishermen gave, what they termed 'the horse power race' among their beam trawlers, as an example of a trend they did not want but were forced into by bad fisheries regulations.

In the quantitative questionnaire section of the study one question asked whether fishery rules and regulation were needed. All (100%) of the Irish as well as Dutch fishermen said they were needed, but with the absolutely essential proviso that *the rules must be equally and fairly applied in all countries covered by the European Common Fisheries Policy*. It was the overwhelming perception of the Dutch and Irish fishermen that, at present, EU fisheries regulations are not equally applied in all EU countries.

A fear was also expressed that if fishermen were to put forward the above too forcefully, it might

be used against them; for example, by means of further cuts in fishing quota, instead of addressing the real problem.

The strategy of 'fishing as much as you can, while you still can', is a perfectly sensible strategy to adopt when resources are unpredictable. But fishermen did not want this situation. They wanted predictability of fishing rights so they can afford to plan for the future and fish sustainably.

Ideally, fishermen expressed the wish to have an input into fish stock assessment, to control the catches themselves and thereby keep fish prices buoyant, avoid overfishing, and cut down on operating expenses.

Therefore, the conclusion is that three requirements are needed to form the basis of a future fisheries policy in order to bring about predictability of resources:

- Appropriate systems of long-term stable sea tenure need to be instituted;
- Areas of sea tenure need to be linked to distinct groups of fishermen forming cohesive social units; and
- National and international fishery regulations need to be equally enforced throughout all sea tenure regions.

Long-term sea tenure linked to distinct groups of fishermen is essential, because in this way these groups know that if they manage their stocks with a long-term view in mind, they and their descendants will benefit, without the threat of a sudden influx of other fishing fleets and unexpected quota cuts.

Practical aspects of sea tenure implementation

The size, location and specific system of sea tenure would be influenced by particular circumstances but would have to take factors, such as the geographic range of the relevant fish populations and the long-term economic viability of the fishing communities, into account.

The system of sea tenure would have to be stable in the long term and exclusive to the social unit of fishermen concerned, unless decided otherwise by the fishermen themselves, in order to ensure predictability of resources. Fisheries research and stock assessment services would of course need to be available to the fishermen's groups.

By choosing the cohesive social unit of fishermen judiciously it should be possible to bring about a high level of internal policing, but a system of independent and equal fishery regulation enforcement will also be necessary. Both these approaches are needed for a high level of fishery regulation compliance.

The goal of a long-term, fixed system of sea tenure might seem initially politically problematic. But just as the predictability of the current system of land tenure, on which agriculture in Europe and other parts of the world depends, has amply shown, the future viability of the commercial fishing industry depends on the predictability of its resources. The conclusion is that such is the case in Ireland and the Netherlands and that, being based on sound ecological principles, this is also the case for other EU member states.

The correct system of sea tenure would have to take fish stock movements into account. It would have to be appropriate for regional circumstances. The system of sea tenure would need to keep the whole fishing community in mind, including small and medium operators as well as big operations. From a human ecological point of view, it would be best, in order to have a sustainable fishing community and an economically stable fishing sector, if there was diversity in economic units within the fisheries sector.

Sea tenure appears to be the way to achieve predictability. The real political difficulties may lie, not so much in the acceptance of the basic concept of long-term sea tenure, but in the fair determination of the geographical location and size of the areas of sea tenure. However, considering the potential benefits of a predictable system of sea tenure on the one hand and the manner in which present EU fisheries policy is functioning on the other, it would seem that this political goal needs to be achieved to ensure the long-term viability of the sea fishing industry

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