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Torben A. Vestergaard  
Dept. of Ethnography and Social Anthropology  
Aarhus University, Denmark

## **A Socio-Cultural Perspective on Fisheries Management in Denmark**

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### **Abstract**

In less than two decades the conditions of the Danish fisheries have changed from a situation where access to fish stocks was almost free to one of strict regulation and close monitoring of catches. The management practices have developed gradually, but with quota regulation as an important basic aspect. This has generated considerable resentment among fishermen. The reason is not just that it is unpleasant to have restrictions imposed on one's activity. There is a conflict between the premises of the management regime and the world views, strategies of action and forms of organisation of the fishermen. The basic logic of the management regime is that of a commonly accepted body of theory (bio-economic theory, common property theory) linked with a general modernist world view. This involves assumptions about the character of natural and social systems that are at odds with fishermen's view of nature, their conception of their own role and identity in relation to both nature and society, and their strategies of action. Predictability, lineal functions and equilibria have been axiomatic for the belief in output management. From fishermen's viewpoint quota management has widely been experienced as an affront to knowledge, practices and identity, all of which are in one way or another linked with the expectation of unpredictability and fluctuations with regard to natural conditions. This paper will explore and illustrate some points of conflict between fisheries regulation and fishermen.

1.0 The Danish fishing industry has for a very long time been accustomed to extensive freedom in fishing. Within the general provisions of the Salt Water Fisheries Law, associated instructions and local bylaws the fishing regime used to be one of free access. This has changed considerably since the 1970's whence TAC's and quotas were introduced and gradually have come to include an increasing number of species.

While many fishermen tend to agree that some form of management is probably necessary there is widespread opposition to quota management as we have come to know it. This opposition has more than practical reasons. The very negative reactions of fishermen to the fisheries regulations during the last 10-15 years do not make sense if it is not recognised that fishing is also as a moral activity.

The effects of the fisheries policy on the fishing industry are that practical and economic conditions have changed, but also that different world views or cosmologies have come into conflict with one another.

## 2.0 The fisheries policy

Since 1983 the Danish fisheries have been subject to the common EC (now EU) fisheries policy which includes a structural policy (subsidies to change fleet size and composition), a market policy (price stabilising measures) and stock management through catch regulation (cf. Raakjær Nielsen 1992: 251-274). The common EU fisheries policy is not, theoretically, of one piece, and neither are the national implementations of it. The market policy is a kind of price insurance arrangement designed to buffer price fluctuations. This has won general acceptance and is based on an expectation of fluctuations shared by fishermen and authorities. The structural policy and the catch regulations are intended to regulate catch capacity and output in relation to the expected carrying capacity of fish stocks. These measures are in a fundamental way informed by common property theory and the notions of equilibrium that go with it. This is a key issue in the conflict of world views between management authorities and fishermen, and it is particularly acute in the field of catch regulation.

EU decides annual TAC's (Total Allowable Catches) on important species within EU waters. The TAC's are divided into national quotas to be managed by each member state. The quotas are distributed on different waters. Annual quotas may be parcelled out in quarterly quotas, and then be allotted to vessels in monthly, weekly or catch journey portions. Besides, permissions are required for participation in certain fisheries or for fishing in certain waters.

## 3.0 The cosmology of common property theory

The (bio-)economic theory of common property resources (CPT) has been the paradigmatic basis of fisheries management for decades, and with good reason. The beauty of its simplicity is both attractive and seducing.[1] But it is also an expression of a particular scientific and cultural world view.

### 3.1 The CPT implies:

- 1) a particular conception of nature
- 2) a particular conception of society and actors
- 3) particular management options

1) Natural renewable resources are seen as parts of natural systems that are axiomatically treated as equilibrium systems tending towards balance and harmony. This is not to say that modern population dynamic modelling cannot do any better; but so far as policy making is concerned the premise is still the notion of equilibrium.[2] MEY's, MSY's and the intersection of cost and return functions at a point where rents are dissipated only make sense in an equilibrium universe. Common property theory is firmly set in generalising modern science where singular, contextual facts must be reduced to comparable type-facts. When stock recruitment is seen as a lineal function of stock size, and when output is seen as a lineal function of input, this is as a whole a function of

a particular world view.

2) In the axiomatic social setting of common property theory action is governed by the self-interest of decontextualised, standard type actors or by externally enforced rules (state, law, rules). The basic premise of the 'tragedy of the commons' is that actors behave in the image of either liberalism or socialism while the respective preconditions, property rights or rules and enforcement, are absent or insufficient.

3) The management options boil down to an alternative between a) privatisation of commons as a precondition for a market regulated regime based on simple self-interest, or b) public regulation of access and effort based on externally enforced rules.

3.2 A number of criticisms have been raised against the CPT or its implications. As such CPT is a formal, abstract theory that cannot be falsified (Brox 1989). But to the extent that its premisses are taken for empirically granted in a management context it is a problem:

1) Biologists and others have claimed that marine ecosystems (natural systems) are deterministic, but chaotic, which makes policy objectives such as MSY's and MEY's meaningless.[3] If stock size is not simply a lineal function of previous stock size, if stock predictability is highly uncertain, and if their distribution in time is subject to large fluctuations, it is unrealistic to aim at a stable fishing capacity while at the same time wanting to harvest theoretical maximum outcomes.

2) Anthropologists and others have criticised the conception of action as determined only by self-interest or state control for its insufficiency. Actors do not mechanically follow rules or simple self-interest (Bourdieu 1977 et al). Social and cultural determinants and situational creativity are certain always to produce a difference between plans and outcomes. Empirically, there are numerous examples of intended or unintended access- and effort-regulating mechanisms that defy the tragic logic of CPT.[4]

The criticism of the empirical relevance of the CPT premisses has implications for management options. But what is at issue here is the relation between these premisses and those of the Danish fishing industry. Both the natural and social premisses of CPT are in conflict with fishermen's view of nature and their social interaction.

#### 4.0 The Danish fishing industry

The Danish fishing industry of the 20th Century has been a success story for small and moderate scale enterprises committed to flexibility in terms of technology, forms of organisation and strategies of action. It is no longer a success story as can be seen from the level of conflict with authorities, the drastic reduction of the fleet during the last decade and the economic difficulties experienced by many enterprises. But it is still dominated by the same type of owner-operated enterprises and forms of organisation, and total catch quantity is

as high as ever (2 million tons), though with fluctuations in the catch of important species.

Freedom has been a celebrated feature of the fishing occupation. This is not simply the freedom of standard CPT to pursue self-interest as isolated entrepreneurs. It is a freedom seen as both necessary and morally right, and closely tied up with views of natural and social order. The necessity lies in the need to cope with fluctuating resources and markets. The rightness lies in the association of activity with as social identity as valued members of society and, perhaps, with an idea of fishing as a particularly authentic and unadulterated way of relating to nature in a modern society.

4.1 (nature) In general Danish fishermen's conception of nature is one that expects natural resources, especially fish stocks, to fluctuate. For practical experience fluctuations have been a fact that corresponded better with a view of fish stocks as God-sent that with a view of change as lineal, earthly functions in lineal, earthly time. Fishermen are not at all uninformed about marine biology, but they lack the scientific authority to justify their own conceptions of nature. They have had to refer to their close, first-hand experience: "We fishermen live in conformity with nature. Some years there are lots of one species. Other years there are lots of another species." (from a letter to the editor, *Fiskeritidende* 1994, No. 28: 9).

4.2.a (society) The organisation and strategies of action in Danish fisheries correspond with this view of nature in the readiness to cope with fluctuations, risk and uncertainty. A number of organisational features and strategies of action enable fishing enterprises to buffer fluctuating stocks and prices.

- The annual fishing pattern of an enterprise may as a matter of routine involve switching between several target species and fishing waters, and such patterns may in turn change over a number of years. One of the reasons for the popularity of trawling since the 1930's is the flexibility it allows.

- Technical inventiveness and willingness to experiment have been celebrated virtues and material for anecdotes and myth-making. Among the more extreme, but not uncommon cases are fishermen with 20-40 GRT vessels who went to North Atlantic waters as far away as Jan Mayen to search for salmon with drift-lines and -nets or to the Barents Sea with ground seines to catch plaice (Moustgaard 1994: 48-67; Hecht & Vestergaard 1987: 151-168).

- Crew wages in the form of catch shares involves a sharing of risk in favour of the viability of the enterprise as a whole.

- The scale and personal character of the enterprises means that family help, supplementary household incomes, and reduction in the level of household spending can contribute significantly to coping with bad periods.

- Investment strategies are sometimes explicitly designed to cater for bad years, though in other cases fishermen have been carried away with too optimistic investment advice. In pound net fishing, which is a passive fishing method with fixed gear, it has been a good rule of thumb to buy up stores of rope, netting, chain, floats etc. in good years that could last through a number of bad years.

All of these features serve to reduce the risk caused by unforeseeable catch and price falls.

4.2.b Another uncertainty that fishermen have to deal with is that of incomplete information. An underwater resource like fish is not readily visible, and there is a need to know of fishing opportunities, prices, changes in regulations, technical innovations etc. The supply of information is organised in formal ways by the fisheries associations, fisheries journals, industrial trade fairs etc. But the reciprocal exchange of information along networks of colleagues and friends is crucial, especially when it comes to short term change in fishing opportunities.

In the social setting of standard CPT fishermen are both split and united by their similarity as rivals doing the same. In actual practice they are continually differentiated by differences of experience. This implies a complementary division of labour in the collection of information and forms the basis of social reciprocity in information exchange. Even if secrecy is part of the game the exchange of information turns the fishing industry from being a collection of separate actors into a nationwide organism.

4.3 The fishing industry does not really live up to the image of a modern industry as composed of separate and morally neutral economic actors acting on their own cost and risk.

Internally the community of fishermen constitutes a moral field of reciprocal exchange. On occasion they have also been able to act as concerted communities as when the trawlers of the Inner Waters on their own initiative stopped weekend fishing around 1960. That stop has been in force ever since, now as a formal rule.

In the relationship between fishermen and society it is, perhaps, ironic that the relationship has taken on a moral quality where the fishermen serve as an ideal of self-reliant private enterprise coping with the risk and uncertainties of a particularly heroic industrial activity.

Another dimension of the relationship between fishermen and society is a decidedly non-modern, hierarchical interpretation of that relationship, according to which fishermen are precisely not a modern industry among other industries, but servants to the national household. In the capacity of servant the fishing industry adds a moral dimension to their place in the division of labour. The term estate (stand) has often been used by representatives of the fishing industry, and it is still occasionally resorted to. Being an estate means being a social and not just an economic segment in a hierarchy of complementary social segments.

One fisherman in a television news interview in connection with the conflicts over regulations and rule breaking put it like this: "The noblest task of fishermen is to fish. Well, we have fishermen, because they should fish." (DR TV 19.5.1991). Society has fishermen for a purpose. So fishermen fish for a higher cause and not just for themselves.

## 5.0 Regulation

The problem with quota regulation is that it blocks crucial strategies of action for dealing with fluctuations: to fish more, better or differently. This is at the same

time a blow to their place in society as exponents of the self-reliant and independent private entrepreneur and as valued servants to society as suppliers of necessary provisions from a domain of their own. The management policy is experienced as a rejection of their activity and the identity and knowledge that goes with it.

#### 6.0 Management options

The traditional, socially embedded, open access regime is no longer an option. If for nothing else then because the resource basis does not fall within the social domain of the Danish fishing community alone, but is open to other fleets of different scale and organisation. Thus, without territoriality community self-management is not an option either. But the present quota management is resented. Being experienced as unreasonable in practice and being based on conflicting views of nature and society, quota management is lacking in moral legitimacy. The attitudes voiced by fishermen and their associations seem now mostly to favour technical means of regulation. Technical regulation has its deficiencies, but it is likely to interfere less with the world views, forms of organisation and strategies of action of the fishermen, and social compatibility is one important precondition for a common property regime to be successful.

#### ENDNOTES (incomplete)\*\*\*\*\*

[1]. See Jens Warming 1911 & 1931, H. Scott Gordon 1954, G. Hardin 1968, Feeny et. al 1990, Brox 1990, Vestergaard 1989.

[2]. Gleick 19xx: xx, Wilson 199x

[3]. See M. Estellie Smith 1991: "Chaos in Fisheries Management" in MAST (Maritime Anthropological Studies) 3(2): 1-13; James A. Wilson et al. 1991: "Economic and biological benefits of inter-species switching in a simulated chaotic fishery" in J. R. Durand, J. Lemoalle et J. Weber (eds.): *La Recherche Face à la Pêche Artisanale*. Paris: ORSTOM, t. II: 789-802; James A. Wilson and Peter Kleban 1992: "Practical Implications of Chaos in Fisheries: Ecologically adapted Management". In MAST. *Maritime Anthropological Studies* Vol. 5(1): 67-75.

[4]. The economic theory of common property resources has been very productive in inspiring anthropologists to analyse and present empirical counter-cases to the tragedy of the commons or to direct their analyses of the relationship between natural resources and social organisation towards the questions raised by the common property theory. The success cases of local management are mostly cases where common resource falls within the boundaries of a delimited social community (cf. Berkes 1989, Cordell 1989, McCay and Acheson 1987, and numerous articles in the journal *Human Ecology*).