

## **Fishing Effort Control : Could it work under the Common Fisheries Policy ?**

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### **Summary**

The system of managing fisheries under the CFP using TACs and quotas has not been sufficiently effective, and is no longer adequate. Direct control of fishing effort has always been a possible alternative, but has not been implemented except in special cases because of the difficulties of measuring and comparing the fishing effort of different vessels and fishing gears, and ensuring fair sharing of the resources available. I suggest that both of these problems can be overcome by adopting a scheme based on uniform *pro rata* adjustments to individual vessel entitlements to fishing effort, based on track records, and thus also maintaining the important principle of relative stability. Such a scheme is well adapted to a system of regional management of the fisheries, could be effectively enforced using satellite monitoring, and should be seriously considered as an alternative to TACs and quotas in the CFP after 2002.

### **1) Introduction**

The difficulties of managing fish stocks using TACs and quotas are now widely recognised. They include:

1. The need for scientific assessments which track the fluctuations in the state of the stocks rather accurately (preferably to better than 10%) so that TACs can be set correctly
2. The need for accurate reporting and recording of landings, to prevent under-reporting and mis-reporting, which otherwise undermine the whole system
3. The need for effective enforcement (prevention of fishing) when quotas have been exhausted
4. The discarding of potentially marketable (but dead) fish, when the quotas for one species in an area are exhausted before those of other species caught with it in a mixed fishery.

All of these problems are serious, and the costs of overcoming the first three are very high, and only affordable for the largest stocks of high commercial importance. They are, indeed, higher than is generally realised, because present expenditure is not enough to overcome them and operate the system properly, and substantial extra expenditure would be needed to do so. Indeed, the hard fact is that most stocks ostensibly managed via TACs (including all of those subject to precautionary TACs) are in reality hardly managed at all.

All of these problems could however be avoided, in principle, by controlling fishing effort directly, rather than using TACs and quotas to do so indirectly. Under an effort control system it is no longer necessary to predict the fishable stock size accurately every year to fix a TAC, as the level of fishing mortality is restrained directly, irrespective of the continual fluctuations of stock size, by controlling the level of fishing effort, which need only be adjusted occasionally and progressively in order to achieve medium-term management objectives. The landings would of course continue to vary with the natural fluctuations of stock size, but this would occur automatically and they would not need to be predicted in advance. Data on landings

would remain necessary as the basis for periodic stock assessments, but these assessments need not be updated every year, and the landings data are not needed directly either to set TACs, nor in order to enforce the management restrictions imposed. Fishing effort would of course have to be monitored and controlled instead, but by using a comprehensive satellite surveillance system it would be possible to do this very effectively, at moderate cost, as discussed further below. Finally, the problem of discarding of over-quota fish would disappear entirely, as fishermen would be able to land and sell all legal-sized fish caught. Discarding of unmarketable fish (those of low value, or smaller than the minimum landing size) would not be affected.

I have argued elsewhere (Shepherd 1997, 2001) that switching to effort control, with compensation for the short-term loss of income when effort is reduced, is the most practicable way forward. However, effort control has always been a possible option (and is allowed for under the CFP), but it has never been widely adopted. This is because it has its own difficulties which would have to be overcome if it is to be used more extensively. I believe that these problems could be overcome, if fisheries managers, scientists and fishermen worked together to do so, and I offer below a preliminary sketch of how this might be achieved. I hope that this may provide a basis for serious discussions on the practicability of adopting effort control as the basic method of management under the revised form of the CFP, due to be adopted in 2002.

## **2) Measurement & Monitoring of Fishing Effort**

Fishing effort is difficult to measure accurately, and comparisons between different types and sizes of boats and different gears are very difficult to make. However, in adopting effort control we would be accepting that fine-tuning the management of individual stocks in a fishery is impossible, and that effective but broad-brush control would be preferable to the apparent (but actually ineffective) precision management using TACs and quotas. A broad-brush but enforceable measure of fishing effort would therefore be acceptable. Whatever we choose, we must be able to monitor it effectively, and ensure that any restrictions imposed can actually be enforced in practice. For both these reasons it seems probable that something like days-at-sea would be the most practicable starting point. Measures which are more closely related to fishing activity, like days or hours fished, would of course be preferable in principle, but could not be used unless ways of monitoring and enforcing them effectively can be devised.

Of course, the same number of days-at-sea exerted by boats of different sizes and types in different places can and does generate very different effects on the stocks. It would therefore be necessary to set effort limits at the individual vessel level, and to specify the types of gear which may be used, and the sea areas in which the specified days may be deployed. There is no reason, however why vessels should not hold portfolios of the effort entitlements so created (i.e. so many days for otter trawling in the North Sea, so many for long-lining West of Scotland, and so on).

Under any constraint on a rough measure such as days-at-sea, there is clearly scope for the increase of actual fishing effort, in various ways such as fishing harder (longer tows, more tows per day, etc) as well as through increased efficiency (more engine power, larger nets etc). It is inevitable that this would occur progressively, to some extent, and thus we should expect that it will be necessary to impose compensating reductions of the chosen measure of effort from time to time (probably after the periodic reassessments of the actual state and level of exploitation of the stocks). Ways in which this could be done are discussed below.

## **3) Equity and Relative Stability**

An important principle now enshrined in the CFP is that of Relative Stability. This implements the more general principle of equity, i.e. that the resources available should be shared fairly between the fishermen of various countries (and indeed within them), and that those shares should be maintained despite fluctuations of the resources themselves. In practice, this is implemented through the use of a more-or-less fixed set of percentages which are applied to the TACs to generate the national quotas, leaving aside the complications of Hague Preferences and voluntary quota swaps.

This is an extremely important principle, because if it is to be preserved in any revised CFP, as seems very likely, it enables us to solve one of the most serious problems of implementing effort control, namely that of distributing allowable effort fairly. It does so because almost precisely the same effect as that of applying a fixed percentage key can be achieved simply by requiring that all changes of effort (whether up or down) shall apply *pro rata* to all those affected. Thus all entitlements to fish with a particular gear in a particular area could and should be adjusted up or down by the same proportion. This kills two birds with one stone, because it implements the principle of relative stability, and at the same time avoids the need to decide on the equivalence between different vessels and gears (i.e. to solve the long-standing problem of determining fishing power). This is crucial, because these have always been the stumbling blocks preventing application of effort control in the past.

#### **4) Zonal and regional management**

There is a widespread view, which I endorse, that it is necessary for the revised CFP to recognise the greatly different circumstances in different sea areas, and develop some form of zonal or regional management. This should if possible allow for round the table discussion and consultation between fishermen's representatives, scientists and fishery managers, before management decisions are taken, and ideally permit collective decision-making by these regional bodies. Any scheme for effort control must therefore be consistent with such a development, and I believe that the scheme outlined above (*pro rata* adjustments of individual vessel effort entitlements, for specified gears in specified areas) is very well suited to be operated within such a regional framework.

The technical measures such as mesh sizes associated with particular gears in particular areas could and should be determined by these regional bodies, to be consistent with any adjustments of effort and so as to achieve the desired overall effect. Such bodies would also have the local knowledge and expertise to define the adjustments appropriately, so as to target them (so far as is reasonably practicable) at those stocks requiring a greater or lesser degree of conservation. For example, there is no reason why different adjustments may not be applied to beam trawls and otter trawls within a region, (and indeed for different times of year) so as to adjust the balance of effort somewhat between flatfish and roundfish, but this would be almost impossible for all EU waters together. Fine tuning at the species level would still be very difficult, as in reality it is now, since the ability to set TACs and so manage individual species in isolation is largely a mirage, as it simply generates the discarding problem mentioned above and does not achieve the intended effect.

#### **5) Implementation: track records, tradeability and compensation**

Individual fishing vessels have track records of operating with various gears in various areas, and custom and practice under the CFP, and the principles of relative stability and non-

discrimination, make it almost inevitable that initial effort entitlements should be based on those track records, and there seems to be little point in doing otherwise. However, in order to avoid any increase of effort initially, it is important that there should be no *de minimis* allowance made for vessels with low historic records of activity. The track records would presumably be based on the past two or three years of operation, and various special circumstances would probably need to be allowed for, but these are matters of detail which can be hammered out in due course. Special provision may need to be made for any very small vessels for which the necessary activity records do not already exist.

There is no fundamental reason why the entitlements should not be made tradeable between vessels, and in the long term it would probably be desirable to permit this, in order to prevent the freezing of the pattern of activity in some arbitrary historical state. Vessels being decommissioned (with financial assistance) would however obviously be required to relinquish their effort entitlements. To allow for trading it would however also be necessary to allow for the different sizes and engine powers between the vessels involved. Since trading would presumably only involve some fairly small fraction of the total effort each year, this could probably be done accurately enough by using some approximate measure of fishing power such as Vessel Capacity Units. Alternatively, any expected tendency for entitlements to become concentrated in the hands of a few owners could be counteracted by allowing transfers only from larger vessels to smaller ones.

The issue of tradeability is related to that of compensation. I have argued elsewhere (but so far to little effect) that it is necessary to help fishermen to make the adjustments necessary to achieve sustainable exploitation, by compensating them for the short-term losses of income involved. This can easily be achieved using effort entitlements, simply by buying back any entitlements which need to be reduced, rather than reducing them by dictat. However, to avoid the problems encountered with successive decommissioning schemes, of buying out mostly inefficient capacity, and to maintain the *pro rata* principle used for the implementation of relative stability, reductions should probably be compulsory across the board with appropriate compensation. Allowing tradeability would then permit those whose businesses would become un-viable to compensate for this by purchasing entitlements from those willing to leave the fishery. Whilst this would also doubtless generate some upward creep of effective effort, it should not be so serious as it would be under a purely voluntary scheme.

In addition to providing for permanent buy-back of entitlements, one can also envisage the possibility of paying compensation for temporary suspension of entitlements, when emergency action has to be taken to safeguard particular stocks, such as those in the North Sea and elsewhere right now. Had such a scheme been in place already, it could easily have provided an effective means for quickly and effectively reducing fishing effort (by the appropriate fishing methods) on the North Sea cod and related stocks, especially whilst there are many small haddock vulnerable to capture.

## **6) Enforcement**

The effectiveness of this scheme for direct conservation measures will as always be highly dependent on whether or not it can be effectively enforced. It seems probable that it will within a few years be possible to apply satellite monitoring even to very small fishing vessels (ultimately probably to anything with an engine). This would enable accurate monitoring of total days at sea for each vessel, and perhaps eventually of less crude measures of fishing effort. However, monitoring alone is not enough, especially if, as envisaged here, individual vessels are

allowed to hold portfolios of entitlements for several sorts of gear. Some system for declaring gears being used, and checking this by inspection at sea, with penalties sufficiently large to deter infringements, would therefore still be needed. This would however be much cheaper and easier to operate than the present system, which really requires a complete and accurate census of *all* landings, as well as verification of actual quantities of fish on board against logbook records.

## 7) **Conclusions**

The management of fisheries under the CFP using TACs and quotas has not been sufficiently effective, and is no longer adequate. Direct control of fishing effort has always been a possible alternative, but it has not been implemented except in special cases because of the difficulties of measuring and comparing the fishing effort of different vessels and fishing gears, and ensuring fair sharing of the resources available. Both of these problems can be overcome by adopting a scheme based on uniform *pro rata* adjustments to individual vessel entitlements to fishing effort, using specified gears in specified fishing areas, based on track records, and thus maintaining the important principle of relative stability. Compensation for both temporary and permanent reductions in entitlements should be seriously considered, as should permitting the trading of entitlements. Such a scheme is well adapted to a system of regional management of the fisheries, could be effectively enforced using satellite monitoring, and should be seriously considered as an alternative to TACs and quotas in the CFP after 2002.

## **References**

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