

**INDIVIDUAL TRANSFERABLE QUOTAS  
THE ITALIAN CASE**

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## BACKGROUND

In common with most other **OECD** Member countries, almost **all** marine resources in every fishing ground in Italy suffer from overfishing to some extent.

Fishing activity is carried out through the entire 8 000 km of Italian coast. The major fishing grounds are found in nearshore and coastal regions and vessels very rarely move from their home port. Italian fisheries **are** typical of those in the Mediterranean in that they show strong artisanal features. In general the fisheries are multispecies and multigear, with the major exception being the clam fishery. Most vessels **are** small, varying in size from **45** grt to 200 grt according to area fished and the type of gear used.

In total, there are about 18 000 vessels with a gross tonnage of 260 000 grt. There **are** around **45 000** active registered fishermen and approximately 800 landing sites.

The vessel owner is always the captain of the vessel, and usually the crew is formed by sons or other relatives. The income of the owner/skipper is mainly derived from fishing operations. Returns to capital invested provide only a small proportion of the owner/skipper's income, but since family members comprise the crew, the returns to labour provide a satisfactory family income.

Forty-four marine species are registered by the official Statistical Institute, but more than 140 species **are** actually landed by fishermen for human consumption. Most species only provide a small percentage of the total landings, with sardine, clam, hake, anchovy, mussel and cuttlefish the most important. As a percentage of total landings, catches vary between 11.5 per cent for sardines and 3 per cent for cuttlefish. For all the other main species the incidence of capture varies between 1 per cent and 3 per cent or less.

There are seven types of fishing gears and systems used whose landings are officially registered. These include trawler, pair trawler, purse seiner, gill net, long liner, dredger, multiple gears. In addition, all the other gear types belonging to the small scale sector, are included in an "other systems" category.

### Management considerations

This background shows the difficulties encountered in managing the human, financial and biological resources in Italy. When adopting a management policy, heavy conflicts always arise when considering the state of resources, the vessel's economic performance, the social impact on fishermen. Each measure always has some undesirable side effects which, if not balanced from the beginning, can reduce the effectiveness of the policy. This is particularly the case, given that fishermen co-operate only when a coherent action is undertaken and some benefits will accrue to them.

Whether from a fisherman's point of view or from a theoretical point of view, considering resources as *res nullius* or *res communes*, or, considering a situation with unmanaged or managed resources, makes little difference. The major difference is that in the former case fishermen are competing against each other, and in the latter case the competition is among different user groups and among themselves. In both cases fishermen have no property rights over the resource.

Given the operating conditions of a fishery like the Italian one, it is obviously impossible to implement a quota system, or a transferable quota system. The large number of small-scale, multi-species fisheries with a lack of any species concentration in catches resulting in large amounts of by-catches and returns from fishing being the sole source of family income, are two of the main reasons which would make it impossible to introduce a generalised quota system.

This poses the question of how the problem can be tackled. The evidence is outstanding that a self-regulatory policy does not work, since for many years in Italy a free access policy has been adopted. Until 1982 there was no administrative restriction limiting the access, and the fleet increased steadily. After 1982, a licensing scheme was introduced and it is still in operation. This scheme is based on a fleet data base, continuously updated, where all information concerning each vessel is recorded (including the authorised gears).

No fisherman can go fishing without the issue of the licence. Licences are no longer issued on demand, but issued according to the directives contained in a Triennial Plan adopted by the Ministry. An obvious aim of the licensing scheme has been in the management of fishing effort.

To satisfy equity considerations, the original issue of licences was automatically given to all fishermen previously operating in the fishery. Licences were issued regardless of the level of resource exploitation, but limitations were then introduced. The issue of licences for use by trawlers was totally forbidden, while other gears had to be compatible with the national plan.

It is of interest to know that in the first years of operation of the licensing scheme a national target for fishing effort was adopted. When the system had been in place for some years it became possible to adopt more flexible targets, based on area, gear and vessel size variables.

A licensing scheme is not only useful for controlling effort through the control of inputs (including the previously mentioned variables and also the fishing time), but if properly used can also help in deciding:

- when management intervention should take place to prevent resource over-exploitation which limits the profit given by the fleet;
- which are the fishing gears that operate in technical and economic non-efficiency conditions, knowing fishing effort cost structure and price level;
- where are the fishing areas that favour an increase in investment and a potential reconversion of the fleet so to balance the decreases needed in other areas.

This is basically an economist's job and it has been successfully applied in Italy. This can be done by following the life of the fleet over time by surveying a sample of vessels that well represent the operating conditions of vessels per area, gear and dimension. It is then possible to indicate the modifications in economic yields and in the rate and amount of exploitation of resources,

through the use of some parameters by developing the production per unit of effort (PPUE) and implicitly taking into account costs, prices and catches.

The estimate of an homogeneous capacity parameter is straightforward in this case and it becomes possible to answer, through the plan directives, to undesirable outcomes. For example, if it is the trawler segment of the fleet that is lowering the PPUE in a certain fishing area, action can be taken on this portion of the fleet to return the fishery in an efficient position. The cost of a specific action is much lower than a generalised policy which, among other things, would affect all the fleet segments, either efficient or inefficient. In this latter case fishermen would be affected by some limitations without reason and the public administrators would be blamed.

The experience gained in the last decade of operation of the licensing scheme gives rise to some additional consideration about the efficiency of the adopted system:

- the full operational regime of such a scheme could be reached much later than foreseen;
- reductions in fishing capacity, even if it can be reached more easily through the licensing scheme, will bring social shocks in any case;
- therefore, it is always necessary to adopt other contextual measures directed to smooth social pressure;
- in the long run, if limitations on more productive gears will be maintained, a rent on the group of remaining vessels will be generated and it will be necessary to adopt some additional measure in order to avoid it.

Given that these considerations are true, it is also true that a management scheme cannot make use of these tools alone. It is needed to integrate the policy with other measures based on financial, economic, social aspects, like the dowel of a Unique puzzle where each piece has its own part in the construction of the figure.

### **The clam fishery**

Although the licensing scheme has played a central role in the management of the majority of Italian fisheries, a licence/quota system has also been implemented in the case of the clam fishery which is subject to quite different conditions.

In the clam fishery there are 527 licensed small boats (around 10 grt) fishing along 2 000 km of coast line. There are around 1 200 fishermen involved, almost all of them participants in the ownership of the boat and licence. The boats cannot move from one area to another, unless specific authorisation is given from the head of the Local Authority.

This scheme was introduced before 1982 when the resource was not over-exploited. The policy adopted in this case introduced from the beginning some limitations on both inputs and outputs. Restrictions included:

- limitations on fishing time;
- limitations on the size of the vessels;

- a daily quota of allowable catch; and
- a minimum size limit for landed clams was introduced

Fishing activity was allowed only after the issue of a specific licence and the number of licensed boats was closed in the first years.

Enforcement in this fishery is also relatively easy since the clam beds are as far as 500-1 000 metres from the coast and the catch has to be landed in one specific landing site established in each port.

As a result all the conditions for a successful scheme were there. However, for some years, when the price of clams was quite low, there were experienced usual problems of control, even if a rent started to be generated on vessels since producer's incomes were well above the average.

The processing industry, stimulated by the difference between the market price of fresh clams and the price of processed product, grew fast and total demand (fresh and industry) increased very rapidly. Accordingly, the price for clam went up even faster leading to a number of problems.

Fishermen's incomes increased dramatically and notwithstanding existing limitations and controls the resource started to be over-exploited. The rent reached incredibly high levels and the pressure to issue new licences was strong, even though for some time no new licence was issued. A debate on the utility of the limited number of licences took place with some quarters arguing that it would have been better to reduce individual quotas and allow more fishermen to fish. Also the rent would have been reduced, since there were no other limitations on the issue of new licences. The conclusion of the debate was the issue of a few more licences and other limitations were introduced. These limitations included: restrictions on fishing days and hours; the licence transferability was limited; and a temporary closure of the fishery for a 1 month period each year was introduced. However, these new regulations failed to stop the heavy exploitation of clam beds and after some years (1989/1991), when the resource in some areas almost disappeared, more restrictions were again introduced.

## CONCLUSIONS

This experience shows the difficulty in managing a resource when it is possible to earn huge incomes from its exploitation. Whatever the management scheme will be, fishermen will always find a way to circumvent and escape limitations imposed by managers. The conclusion can only be that higher is the convenience to exploit a resource, the tougher should be the public administration's answer to the problem. In the case of the Italian clam fishery, the prohibition of licence transferability, the introduction of high taxes on licences, or a buy back scheme, perhaps could have shown better results. It is certain that a scheme properly drawn, and introduced at the right moment has not had the success that could have been expected.

As to the fleet adjustment allowed by the introduction of a free market for quotas and licences, given the Italian experience, it is highly questionable if it would have helped. There are two main considerations in this case:

- There was no scope in exchanging quotas since the **fishing activity is very** easy to perform and the value of the catch **was** very high.
- There was an interest in acquiring existing licences, even paying **an high rent**. In this case one can expect that the exploitation level could have been increased in order to get profits from the investment.

