COUNTRY NOTE ON NATIONAL FISHERIES MANAGEMENT SYSTEMS -- ITALY

1. The settings of the fishery

1.1 Economic and social characteristics

1. The Italian fishing fleet is one of the most important in Europe and it represents an important share of the whole Mediterranean industry. In 2002, the active fishing fleet operating in Italy was composed of 15 939 boats whose gross total tonnage amounted to 189 236 tons. Total landings were estimated in 314 383 tons, corresponding to around EUR 1 403 billion. Total employment in the fishery fleet amounts to more than 38,000 units.

Table 1. Main indicators of fishing sector in Italy and EU, 2002

	Italy	Total EU	Italy/EU %
Number of vessels	15 939	81 778	19
GT/GRT (1000)	189	1 791	11
Volume of landings (1000t)	314	5 643	6
Value of landings (mEuro)	1 403	7 131	20
Employment	38 361	196 519	20

Source: Economic performance of selected European fishing fleet, Annual Report 2003, CA3, UE

2. Fishing gears are scattered all over the 8000 Km of coast and production is landed in a large number of sites (there are more than 800 landing sites).

3. Apart from small pelagic species and some specific fishery (sardines, shrimps, swordfish, tuna, clams) fishers cannot target species they intend to catch, given the strong multi-specificity of the fisheries.

4. The Italian fishing sector could be scattered in the following segments:

Trawlers

5. The trawler fleet consists of 2 353 vessels, 15% of the total fleet, with an average age of 25 years. These vessels vary substantially in size and target a variety of species. They account for 32% of total national catches and 42% of total value of landings. Vessels have an average crew of 3.8 fishermen on board. In 2002 they spent on average 188 days at sea.

Purse seiners

6. The purse seiner fleet consists of 180 vessels representing 1% of the total number of vessels and 4% of total GRT and it employs 3.4% of Italian fishermen. This segment lands a high volume of small pelagic species (anchovies and sardina pilchard), and is concentrated in Sicily and Tyrrhenian Sea. Trips last normally 12 hours, the whole night. In 2002 average days at sea were 115.

Midwater pair trawlers

7. The Italian midwater pair trawler fleet operates exclusively in the Adriatic coast. This segment, consisting of 126 vessels, represents 1% of national total number of vessels and 4% of total GRT. Vessels operate in pairs targeting small pelagic species (80%), anchovies and pilchards especially, and account for 16% of total national landings. It is one of the most efficient Italian fishing systems in terms of CPUE. A standard vessel has a crew of 6 men and an average age of 21 years.

Dredges

8. This segment is based almost exclusively in central-north Adriatic coast and consists of 714 vessels, representing 4% of national total number of vessels and 4% of total GRT. This fishery is highly specialised, targeting mainly clams (*Chamelea gallina*). Vessels have an average age of 18 years and a crew of 2 men. Landings per vessel are defined by local clam consortiums (a self-management system), that establish quotas and days at sea on the basis of the state of the resource and market. In 2002 they operated 100 days on average.

Multi-purpose vessels:

9. Multi-purpose vessels characterise Mediterranean fisheries, typically highly adaptive according to season and market demand. This heterogeneous segment consists of 2 051 vessels accounting for 13% of national total number of vessels and for 15% of total GRT and employs 14% of fishermen. Length varies from 4m to 33m approximately. This segment represents 15% of national landings value. Vessels, with an average age of 21 years, use an average crew of 3 men.

Small-scale fishery

10. The small-scale fishery is the Italian fleet segment with the greatest number of vessels, representing 65% of the total. The segment covers vessels using passive gears, mainly fixed nets, and are less than 12 metres in length. The small scale fishery accounts for more than a quarter of the national value of landings. Fishermen represents 50% of national total with an average crew of 2 men. Average incomes are low, but these vessels represent an important economic resource in some geographical areas with a high level of dependence on fishery.

Tuna fishery:

11. There are 195 vessels with authorisation to fish bluefin tuna (*Thunnus thynnus*), included in a ministerial list. The capture of bluefin tuna is subject to IQ. National quota of bluefin tuna for 2002 is 4,958 tons; this quota for 2003 will increase by 6.2%.They account for 1% of national number of vessels and for 6% of total GRT. These vessels are equipped with purse seines or longlines. Even if bluefin tuna is the target specie, the vessels also catch other large pelagics, like albacore and swordfish. The tuna fishery is a seasonal activity. During the rest of the year smaller vessels use other gears: trawls or fixed nets to fish for demersal species and crustaceans, while the larger tuna purseiners stay at the port.

Table 2. Composition of the national fleet, 2002

	Total fleet	Fleet segments						
		Trawlers	Purse seiners	Midwater pair trawlers	Dredgers	Multi-purpose vessels	Small scale fisheries	Tuna fisheries
Economic indicators a)								
Value of landings (mEUR)	1385.3	576.6	51.2	49.1	65.0	211.8	360.2	71.4
Gross value added (mEUR)	887.3	329.6	37.2	34.9	53.2	129.5	254.5	48.3
Gross cash flow (mEUR)	450.2	142.2	16.8	14.7	29.5	64.1	158.9	23.8
Net (financial) profit (mEUR)	342.1	98.0	13.2	11.4	22.1	42.5	136.2	18.8
Other economic indicators								
Employment on board (FTEs)	38,360.0	9,029.0	1,321.0	806.0	1,503.0	5,395.0	19,358.0	948.0
Invested capital (mEUR)	2,196.3	966.2	81.3	68.0	118.9	378.0	477.0	106.9
Effort (1000 days at sea)	2,560.5	441.4	20.6	22.3	71.9	317.9	1,658.0	28.4
Capacity indicators								
Volume of landings (1000 t)	303.9	97.0	31.9	49.0	14.7	41.2	55.6	14.6
Fleet - number of vessels	15,915	2,353	180	126	714	2,051	10,296	195
Fleet – total GRT (1000)	178.3	91.1	7.8	6.8	7.4	27.5	27.1	10.7
Fleet – total kW(1000)	1,253.2	509.6	43.5	41.7	76.8	270.4	255.3	56.0
Average characteristics of vessels								
GRT	11.0	39.0	44.0	54.0	10.0	13.0	3.0	55.0
KW	79.0	217.0	242.0	331.0	108.0	132.0	25.0	287.0
Length, loa	10.0	19.0	20.0	22.0	14.0	14.0	7.0	21.0
Age	26.0	26.0	26.0	26.0	26.0	26.0	26.0	27.0

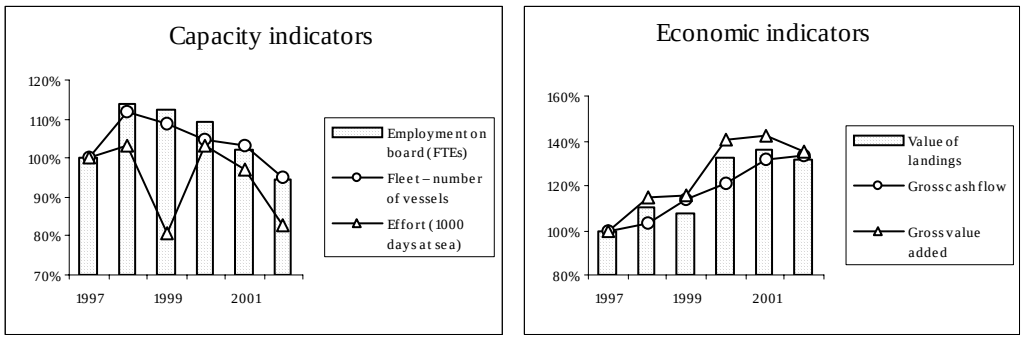
a) provisional data, with exception of value of landings
Source: MiPAF - IREPA.

1.2 Main trends in capacity and economic indicators

12. Over the last seven years, the fleet has been affected by a continuous decrease in all technical parameters. Gross tonnage shows the largest reduction among all parameters involved in the process. Total tonnage decreased by 20% from 1996 to 2002. Engine power also shows a reduction, but at lower rates (14%). These measures ignore technological progress, and it is therefore conceivable that the reduction of capacity of the fleet was not as high as these figures could imply.

13. Between 1996 and 2002 total production has decreased (-32%). The value of landings shows a lower reduction (-9% between 1996 and 2002), thanks to the increase of average prices. Prices have mostly increased in the last quarter of 2000 as a consequence of a change in consumers' preferences due to BSE crisis and to the steadily reduction of the landings. In the following months, price continued to raise.

Figure 1. Trend in Capacity and Economic Indicators, 1997-2002



Source: Economic performance of selected European fishing fleet, Annual Report 2003, CA3, UE

1.3 Status of fish stocks: LPUE

14. In the last years, landings per unit effort have been quite stable, with fluctuation around 11 kg per unit of effort.

15. The reduction in the fishing effort induced by the implementation of the European Community buyback scheme and the national regulation governing temporary withdrawals had a positive effect on the state of the resources. Indeed, the system as a whole shows to be sustainable because of structural reasons, which do not allow for excessive overexploitation.

16. In particular, the equilibrium between resource and effort is due to different factors; among these:

- Stocks are mix and dispersed allowing only small quantities being caught per hawl.
- Continental shelf for most of the fisheries is restricted to a few miles from the coast. Apart for the Central and Northern Adriatic, each vessel has only 2/3 fishing grounds available which, implicitly, define a zoning of the sea which reminding of a natural TURF. Only a marginal share of the fleet moves to other fishing grounds in other geographic areas and only for specific target species (shrimps). Basically there is a strong link between fishing effort and resource.
- Economic target of the vessel owner(s), which is (are)usually embarked, is income and not profit, which characterise the enterprise as artisanal vs capitalistic.
- Given the structural features of the resources (fragmented) and the catch per hawl, also the dimension of vessels is defined within a short range. It cannot be bigger otherwise costs would exceed earnings.
- The only way to extract additional rent from the fishery would be to increase the number of vessels, not the dimension. But the number of vessels is limited by the licence to fish. Also the engine power cannot be larger of a given limit (even if the range is much wider and this, in many case, makes the difference in income).
- Technological progress is also to be considered as playing an important role in extracting rent from the fishery. Its dimension could be important, but it has not been consistently estimated so far. In any case, considering the limited contribution of each vessel to total effort it is conceivable that the impact of technology in Mediterranean vessels is by far much lower than in other areas.

17. With regard to the main commercial species, over the last few years, there have been considerable fluctuations in the catch of small pelagic species. As a fishing area, the Adriatic sea shows a remarkable concentration of small pelagic species. Being a highly productive basin, it abounds in zooplankton on which anchovies, sardines and mackerel feed. The species with the highest commercial value is anchovy (*Engraulis encrasicolus*). LPUE shows a marked increase between 1999 and 2002 (fig.2).

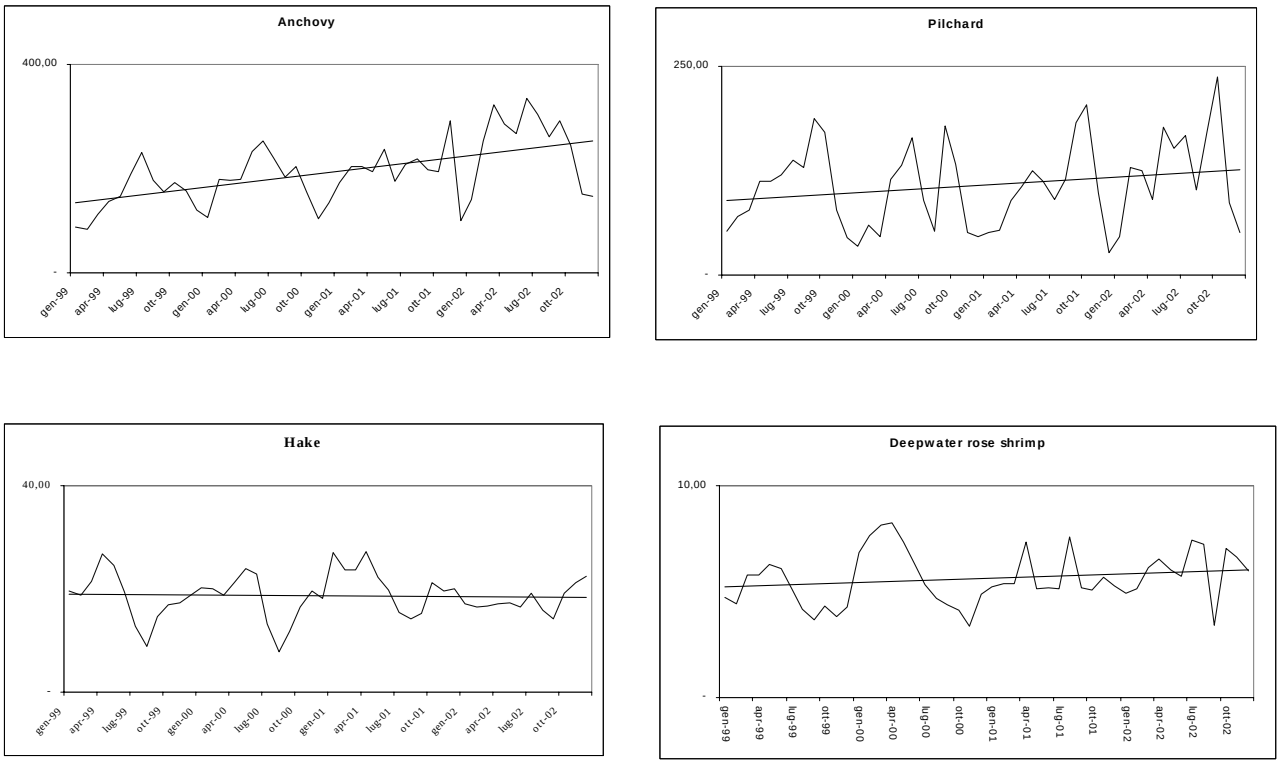
18. The most abundant among the small pelagic species is the pilchard (*Sardina pilchardus*); this species shows less and less pronounced fluctuations still linked to climatic and environmental factors (fig. 2).

19. Only about thirty demersal species out of over a hundred caught by trawlers in the Italian seas are important in terms of biomass and economic value. Among the most important demersal species, there are: hake (Merluccius merluccius), red mullet (Mullus barbatus), greater forkbeard (Phycis blennoides), blue whiting (Micromesistius poutassou), norway lobster (Nephrops norvegicus), giant red shrimp (Aristeomorpha foliacea), blue and red shrimp (Aristeus antennatus), deepwater rose shrimp (Parapenaeus longirostris), common octopus (Octopus vulgaris), horned octopus (Eledone cirrhosa).

20. LPUEs of the most important demersal species are stable (hake, norway lobster) or, in other cases (deepwater rose shrimp, red mullet) are increasing.

Figure 2. LPUEs for anchovy, pilchard, hake and deepwater rose shrimp

monthly data 1999-2002



Source: Irepa-Mipaf

2. Management Systems and Experience

21. The design and implementation of a complete management scheme for the fishing sector in Italy goes back to 1982. Before 1982 the usual biological tools for stock recovery (mesh size, fish minimum size, closed area an the like) were in use, but, as in many other countries, this approach was enable to avoid the occurrence of the traditional resource overexploitation. As a matter of fact, the constant increase in wholesale price induced the constant increase of the fleet size, even if biological parameters were already deteriorating.

22. Due to the greater ecological sensibility and to the state of the resources, the law 41/1982 introduced the actual conservationist policy based on a generalised licensing scheme and, even more important, introduced the National Triennial Plans. The Plans call for the rationalisation and development of the whole fishing industry where not only short and medium term targets, but also long term consideration are included. Until now, six National Triennial plans were enforced.

23. Particular attention has been attached in recent years to fishing effort reduction through the limitation of fishing time and this measure is believed to play a relevant role in the recovering of some stocks.

24. A large number of measures and tools adopted within the national plans were also included in EU policy documents. While the EU programs have global targets, only broken down by gears, the national plan allows for much more detailed decisions and the management goals also consider vessels' dimensions and fishing areas.

2.1 The present situation

25. In the last years, the fishery sector has gone through important changes that involved the structural characteristics of the fleet, the fishery market organisation and the institutional framework.

26. The evolution of the national fishery sector can be summarised as:

27. *Decrease in fishing effort*: control of the fleet's fishing capacity comes under the jurisdiction of the EC regulations and is governed by the Multi-Annual Guidance Plans (MAGPs). Four MAGP plans have been implemented so far; the first three (1983-86, 1987-91 and 1992-1996) did not lead to a reduction in the Italian fishing capacity, because of several administrative and technical problems. Therefore, in Italy, the Community plan that provided for permanent withdrawals was focussed on the last MAGP (1997-2002). Consequently, a marked decrease in fishing units was registered over short period ranging from 1997 to 2002. This fall produced strong social and economic effects on the Italian fishery sector as a whole. In particular, the fishing capacity of the Italian fleet has shown a considerable decline in the last three years; the constant decrease in the average levels of productivity and profitability recorded in various geographical areas and concerning different fishing gears, along with a general cost increase (above all the strong increase in fuel prices), led a number of operators to adhere to the permanent withdrawal. In 2001-2002, the requests for withdrawals involved 1 250 vessels, totalling no less than 21 000 GRT.

28. In parallel, and as a consequence of the decrease in the fleet, a remarkable decline of the activity in terms of fishing days has been recorded (-21% in the period 2000-2002). Depending on the market conditions and in order to avoid the depletion of the resources and to boost long-term sustainability of fishing activities, some vessel owners are oriented towards a decrease in the fishing effort. Such resolution entails a self-imposed choice to reduce the activities and occurs in specific fishing sectors and fleet segments, above all dredges and mid-water pair trawlers.

29. *Self-management approach*: the latter experience is linked to the development of a self-management approach which it is expected to play an important role for the future of the fishery sector. Nowadays, the shifting of responsibility from the central administration to ship owners concerns the clam fishery sector and to a lesser extent, the Adriatic midwater pair trawlers. For instance, in the Marche region, midwater pair trawlers agreed upon a reduction of fishing days and catch levels depending on internal and export market..

30. In this latter segment of the national fleet, the new management approach has achieved the following goals:

- reduction of over-capacity and fishing effort,
- improving product quality,
- considerable growth of saleable gross production, via a strong increase in prices
- reduction of exploitation costs due to a more rational management of resources.

31. A self-management system is able to combine resources protection with economic and social objectives, even if the implementation of this management instruments required the combination of appropriate management measures, their timely introduction, together with high service costs. All these elements have an important role in allowing a segment of the fleet to leave the central administration support and to accept its own responsibility. It is well known that in many industrialised countries fishermen do not intend to forgo government support since, in doing so, their benefits would be higher.

32. *Decentralisation process*: Furthermore, during 2001, the General Directorate for Fisheries and Aquaculture has completed the decentralisation process in order to transfer competences to the regions. Under this process, as a prerogative of the central administration, the Ministry of Agriculture and Forestry Policies retained its power to direct, co-ordinate and plan, and also to manage the fleet and the national sea fishery resources. Local authorities, instead, have been entrusted with all competencies in fishery matters previously managed by DG Fishery and Aquaculture: development and protection of aquatic resources, aquaculture, fishing harbour maintenance, processing, trading and inland waters fisheries. Under D.L.143/97, administrative competencies were entrusted to the regions with repercussions in terms of management of the financial resources allocated through the Structural Funds and the VI Triennal Plan. Therefore, in order to ensure effectiveness and efficiency of public expenditure and to safeguard the principle of consistency in planning, close co-operation between central administration and local authorities was called for. Owing to the new competencies assigned to the central administration, such rearrangement will require an increasingly strong development of the co-ordination activity between central and regional levels. In particular, considering that both the monitoring and the control activities fall under the duties of the General Directorate for Fishery and Aquaculture, the work programme has been handled by units specifically created to perform duties requiring statistical competencies besides administrative ones. The management of financial flows demanded an ever-growing attention to the budgetary time limits imposed by the new regulation and an increased assistance for the functioning of the Surveillance and Control Committee.

33. *Fishery market organisation*: the main feature characterising the whole fishing industry since 2000 has most probably been the increase in the average unit price which, after years of gradual decrease, has been slowly rising towards the highest figures. Such price increase is partly due to the growth in the domestic demand for fish products and partly, especially for aquaculture products, to the adoption of initiatives aimed at qualifying products. To face the difficulties of the market, mainly due to the increasing competitiveness of foreign output, and in order to differentiate home products from foreign ones, Italian operators have set up initiatives and research aimed at making domestic products more easily identifiable. The first step taken has been the adoption of trademarks which have developed through the labelling of products either by directly marking the catch or the fish boxes. Afterwards, an ever-increasing number of

operators adopted the system of certification as a means to mark out both fish production processes and final output. Such steps permitted good profit margins which mainly concerned sales of processed or fish farmed products. On the contrary, as for the market of fresh fish, inadequate transparency, lack of information regarding the origins and the quality of products are still causing consumers' mistrust. Until now, 21 Producer Organisations are in activity with the aim to encourage the planning of production and its adjustment to demand, to promote the concentration of supply to stabilise prices and to encourage fishing methods allowing for fishing sustainability (art. 5 of the European Regulation no. 104/2000 of 17 December 1999)

34. *National guidance and modernisation law for fishery and aquaculture*: the national law no.226 of May 18 2001, introduced specific innovative policies. They consist at the assimilation of fishermen to the agriculture entrepreneur, allowing for fiscal and social security benefits; the acknowledgement of the multi-functional role of the fishery enterprise, responsible for the preservation of aquatic ecosystems and the acknowledgement of the legal status of fishery-tourism ("pescaturismo") were also introduced. Particularly, the latter activity is growing rapidly and spreading throughout the country in areas mainly devoted to tourism. This activity offers professional fishermen the opportunity of taking tourists aboard their fishing boats on daily excursions. For this reason, it represents an actual chance to supplement fishermen's income.

3. The Clam Fishery: a Case of Self-management System

35. In Italy, the fishing of bivalve molluscs performed by means of hydraulic dredges is a relatively recent activity. Introduced in the first years of the 70s, this type of fishing activity is mainly concentrated along the Adriatic coast of the country. Its target resource is the autochthonous *Chamelea gallina* (i.e., the clam).

36. The actual clam management system is the outcome of a long process that went from the early '90s. In '80s, fishing capacity increased dramatically and the resource became overexploited. New measures were immediately established at the central level; input and output measures were introduced and a specific licensing scheme was started. A National Management Committee was introduced whose task was to co-ordinate the management measures governing this fleet segment.

37. Towards the end of the '90s, the failure of the strategy which had been adopted by the central management was evident. Fish effort was considered too high and income of the fishermen declined dramatically. The management authority was considered responsible for the failure and fishermen asked for financial support and new rules. Since then a new approach was initiated.

38. The new management program was aimed at:

- shifting of responsibility from the central administration to ship owners,
- replenishment of clam stock and establishment of a sustainable ratio between effort and resource.

39. The National Management Committee was dismissed and Local Management Co-ordination Committees were established. The powers granted to these committees were provided for by a central Regulation, which entitled them to determine daily catch quota, number of fishing days in a week, season closure, maximum landings, area rotation, allowed gears, periods, landing sites, restocking areas, and the like.

40. Basically, they were granted all the powers previously held by the Ministry, which were added to those already in their control.

41. Furthermore, an "inter-consortia" Committee was established at national level. Its aim was to improve the co-ordination of the catch and of the commercial flows among its members. As shown below, this permitted an increase in prices, while reducing the level of exploitation.

42. No other clam licences shall be issued prior to January 1st 2009, a date on which reconsideration on the whole experience is foreseen.

43. It is still too early to draw final conclusions on this experience. However, except in case of an extraordinary environmental catastrophe, the sector is now having excellent results (tab.3).

44. To sum up, over the period 1996-2002 the following events were recorded:

- considerable growth of saleable gross production;
- constant decrease in productive levels; and
- reduction of exploitation costs due to a more rational management of resources.

45. The successful management of the segment was based on a progressive decentralisation of the decision level, ending up with a self management regime where Territorial Use Rights (TURF: Territorial Use Rights for Fisheries) were introduced.

46. A number of interesting issue can be derived from this experience. They can be summarised as follows:

- the sedentary character of the target resource, which is distributed in specific areas easily identified in every fishing district, make things much easier;
- homogeneity of the fishery segment is another important aspect, allowing the introduction of rules largely accepted by all fishermen,
- when territorial exclusive rights are assigned fishermen are ready to take advantage of them,
- the existence of a co management approach plays an important role; a command and control approach would have never been appropriate.

Table 3. Main indicators for clam fishery with hydraulic dredges

(1996-2002)

	1996	2002	Δ %
Incomes/vessel (000 euro)	42	96	129
Gross profit/vessel (000 euro)	14	39	179
Added value/vessel (000 euro)	30	77	157
Incomes (mill. euro)	34	64	88
Gross profit (mill. euro)	12	26	117
Added value (mill. euro)	25	52	108
Licence value (000 euro)	130	500	285

Source: Irepa-Mipaf

4. Management instruments

47. The characteristics of the national fishing industry brought to the introduction of a conservationist policy based on a generalised licensing scheme, considered the most suitable tool for management the industry and the resource

48. Among these characteristics the actual management system has been influenced above all by:

- multispecifity and multigear features of the industry,
- technological interactions among different fishing gears catching the same species (for example small-scale artisan fisheries and bottom trawlers),
- competition with other uses (sport and recreational fisheries, tourism),
- biological structure of Mediterranean stocks (species with a limited recruitment age and a short life cycle),
- fragmentation of the production and low concentration of the landings (total landings are scattered over 100 species)

49. In addition to the licensing scheme, single management measures are introduced (technical measures, limitation of fishing times and other input and output measures). These measures are applied to the whole fishing fleet and in addition to those measures having a general character, some specific instruments are implemented for specific fisheries such as clam, tuna and sardine juveniles.

4.1 Generalised licensing schemes

50. As previously stated, in 1982 a new law was approved and fishing industry as a whole was considered as an unicum to be managed through a planning document drawn each three years and a generalised licensing scheme was put down to manage the industry and the resource.

51. All vessels, fishing by means of all possible gears are required to possess a licence, which is centrally managed by the Direction of Fishery of the Ministry of Agriculture Policy.

52. License are issued by the Ministry to the shipowner; the license specifies detailed terms and conditions for the operations, including limitations of fishing areas, gear use and fishing categories (overseas and ocean-going fishing, mediterranean fishing, in-shore coastal fishing, local coastal fishing, service boats). On the license all the characteristics of the vessel used for the fishing activity are reported in order to identify the vessel (among these, the name of the vessel, the UE number, GT, kW, LOA). Consequently, one fishing license corresponds to one fishing vessel.

53. Licenses are valid for eight years and are renewed on the request of the shipowner.

54. In the last years no new license has been issued, given the stop imposed by the administration. A different situation is designed for the clam fishery; no other clam licences shall be issued prior to 1st January 2009.

55. The system gives the possibility to reissue old licenses in some specific situation, such as:

- licenses can be reissued when old licenses attached to vessels of identical or larger tonnage and power have been withdrawn. The permanent decommissioning of a higher perecentage of tonnage and power is required in case of trawlers, i.e. in case of licences falling within those segments where overcapacity has been assessed. The percentage is set within the measures foreseen in each plan
- licenses can be reissued in case smaller vessels are decommissioned, aiming at the building of a new one whose dimension is not larger than the sum of those withdrawn.
- in specific case; for example, as a consequence of the ban of drifnets, the national plan for the withdrawal and the re-conversion of *spadare* has provided for a re-conversion option; in the case the shipowners had no other fishery authorisation they were entitled to apply for a purse-seiner or a new authorisation for small-scale fishing gears.

4.2 Experience with time and area restriction

56. At the moment, the licensing scheme is used to limit fishing effort by controlling inputs, but other collateral measures, either based on input or output control, have been introduced. This is the case of time restriction that can be considered a traditional management tool in the Italian fisheries.

57. Year by year, a temporary closure is established for bottom and pelagic trawlers. The duration of the period is variable from one year to another (Table 4).

58. In 2001, a new modality for the implementation of temporary withdrawal has been approved. Rules that allowed for the creation of measures called “fishing technical temporary withdrawal” in previous years, have confirmed their social validity after the modifications introduced by EEC Regulation No 2792/99. In particular, Article 12 states that, in the presence of specific programmes for the conservation of aquatic resources, in order to promote the temporary interruption of the fishing activity member states may pass nationally financed accompanying social measures for fishers. Furthermore, Article 16 allows for the possibility of offering to the fishers and boat owners indemnities for temporary withdrawal, only in the presence of specific circumstances, such as a non foreseeable event due to biological causes.

59. The closure calendar is chosen from year to year and is related to the spawning season. Given the strong multispecificity of the Mediterranean fisheries, the closure will affect some species more than others (in particular, positive outcomes are registered for red mullets but not for European hake and Norway lobster). Moreover, the biological outcome of this measure was rather positive in the more productive areas (eastern fishing grounds, which are known to be richer and with a large continental shelf), wile less efficient in the less productive area (western fishing grounds and short continental shelf). In order to consider such differences, the closure is subdivided in two or three periods of time. Usually the Adriatic sea stops fishing from mid-July to mid-August, lower Adriatic and Ionian stop from mid-August to mid-September. Tyrrhenian sea stops mid-September to mid-October. Moreover, the closure is compulsory for the eastern fishing grounds, while it is facultative in the western grounds. This measure secures a premium per day/vessel.

60. The race to fish after the closure has been limited by reducing activity to 4 fishing days for a 60-day period after the closure is over (from Monday to Thursday).

61. Temporary withdrawl is used to control fishing effort in conjunction with the measure of capacity control. It is well known that, whenever fishing capacity is not fully employed, the overall effort might be

boosted by increasing fishing time. Therefore, an increase in fishing time is likely to occur particularly when the withdrawal of the existing vessels is associated with a rise in the profits of the fisheries still in activity. Consequently, if the time variable is not monitored simultaneously, there is a considerable risk of wasting financial resources. For example, for the Adriatic trawlers, it was possible to reveal how in the year 2000, in spite of the large reduction in tonnage, the fishing effort of single vessels remained almost unchanged compared to the previous year. Indeed, if capacity in terms of average tonnage decreased by 17.5%. the level of utilisation in terms of days' activity grew almost by 19%.

Table 4. Periods and typology of the interruptions to fishing activity in Italy

(1988-2002)

Year	North and Centre Adriatic sea	South Adriatic sea	Tyirrenian sea	Ionic sea
1988	6 Aug.-19 Sept. (c.)	6 Aug.-19 Sept. (c.)	1 Sept.-15 Oct. (c.)	1 Sept.-15 Oct. (c.)
1989	1 Aug.-15 Sept. (c.)	4 Aug.-18 Sept. (c.)	15 Sept. - 30 Oct. (c.)	15 Sept. - 30 Oct. (c.)
1990	1 July - 14 Aug. (c.)	1 July - 14 Aug. (c.)	15 Aug. - 28 Sept. (c.)	1 July - 14 Aug. (c.)
1991				
1992	25 July - 7 Sept. (c.)	25 July - 7 Sept. (c.)	16 Sept. - 30 Oct. (c.)	16 Sept. - 30 Oct. (c.)
1993	25 July - 7 Sept. (c.)	25 July - 7 Sept. (c.)	16 Sept. - 30 Oct. (f.)	16 Sept. - 30 Oct. . (f.)
1994	4 Aug.- 8 Sept. (c.)	15 July-19 Aug. (c.)	12 Sept.-15 Oct. (f.)	12 Sept.-15 Oct. . (f.)
1995	24 July - 28 Agu. (c.) 7 Agu. - 11 Sept. (c.) 12 Agu. - 16 Sept. (c.)	24 July - 28 Aug. (c.) 7 Aug. - 11 Sept. (c.) 12 Aug. - 16 Sept. (c.)	14 Sept. -18 Oct. (f.)	14 Sept. -18 Oct. . (f.)
1996	31 July - 13 Sept. (c.)	31 July - 13 Sept. (c.)	31 Agu. - 14 Oct. (c.)	31 Agu. - 14 Oct. (c.)
1997	31 July - 13 Sept. (c.)	31 July - 13 Sept. (c.)	22 Sept. - 5 Nov. (c.)	22 Sept. - 5 nov (c.)
1998	20 July - 2 Sept. (c.)	20 July - 2 Sept. (c.)	14 Sept. -28 Oct. (f.)	14 Sept. -28 Oct. . (f.)
1999	14 May - 3 June ("Bellico" f.) 4 June - 15 July (c.) 16 July - 31 Agu. (f.)	14 May - 3 June ("Bellico" f.) 4 June - 15 July (c.) 16 July - 31 Agu. (f.)	20 Sept. - 17 Oct.(f.)	20 Sept. - 17 Oct. (f.)
2000	20 July - 1 Sept. (c.)	20 July - 1 Sept. (c.)	2 Sept. - 1 Oct.	3 July - 1 Aug. (c.)
2001	1 -30 Aug. (c.)	1 -30 Aug. (c.)	Lazio: 27 Aug.-25 Sept. (c.) Campania: 15 Sept.-14 Oct. (c.) Gioia Tauro: 1-30 Sept. (c.) Vibo Valentia: 7 Sept.- 6 Oct. (c.)	15 Sept.-14 Oct. (f.)
2002	24 July – 04 Sept. Trieste – Rimini (c.) 05 Aug. – 18 Sept. Pesaro – Pescara (c.)	08 July - 21 Aug. (c.)	8 Jul. - 16 Oct. (f.)	2 Sept .- 16 Oct. (c.)

Note: c.: compulsory f.: facultative
Source: Mipaf

62. Finally, a seasonal time closure has been introduced in tuna fishery too. It is prohibited to take bluefin tuna with an encicling net from 1 to 31 May in the Adriatic sea and from 16 July to 15 August in the whole Mediterranean sea (Council regulation no. 812/2000); it is also prohibited to fish for bluefin tuna using surface-set longlines from vessels greater than 24 m in length during the period from 1 June to 31 July each year (Council regulation no.1075/1996).

4.3 Selective gears and fish size (1626/94)

63. The EU Rule 1626/94 establishes technical limits and minimum fish sizes for the conservation of fishery resources in the Mediterranean.

64. Before EU Rule, measures based on selective gears and mesh size were largely used for the management of Italian resources; for example a 40 mm. minimum mesh size rule for bottom trawling has been in force from the beginning of the 80s.

65. In Annex II of the Council Regulation no. 1626/94, minimum requirements relating to the characteristics of the main type of fishing gear are reported. Restrictions apply to the following gears:

- Dredges: the maximum breadth of dredges is 4 m
- Encircling nets (seines and lampara nets): the length of netting is restricted to 800 m and the drop to 120 m, except in the case of tuna seiners
- Bottom-set nets (gillnets and entangling nets)and trammel nets: the maximum drop of bottom-set nets is 4 m, and it is prohibited to have on board and set more than 5 000 m of bottom-set nets per vessel
- Bottom-set longline: it is prohibited to have on board and set more than 7 000 m of longline per vessel
- Surface-set longline (floating): it is prohibited to have on board and set more than 60 km of longline per vessel.

66. In case of towed nets, the mesh size is limited to 40 mm. And for the encircling nets the limit is fixed to 14 mm.

67. The use of trawls, seines or similar nets is prohibited within three nautical miles of the coast except where a derogation is provided for in national legislation. This is the case of the "Bianchetto"(*Sardina pilchardus fry*) and "Rossetto" (*Aphia minuta mediterranea*) fisheries, that are codified as "special fisheries". These fisheries are carried out during wintertime (15 January - 15 March as a rule) for a period of 60 days. These fisheries have a long history and represent one the most important small-scale activity. The socio-economic impact of the "Bianchetto" and "Rossetto" fishery is very high at local level.

68. In case of fish size, a specific national legislation has been in place from 1963 and a minimum size has been attached to each single species. The EU Rule 1626/94 establishes a new set of fish sizes, which are lower that those being fished by the allowed mesh size. Moreover, compliance on limits on fish size from fishers is difficult to achieve for a number of reasons. In particular, when the catch is made of many species at the same time and they are taken on board when they are already dead, it is useless to throw them away, given that in most case there is a market. The enforcement costs to control the respect of such restrictions are also extremely high. This is due to the dimension of the vessels and to their number which is widespread over 8,000 km of coast.

4.4 Other vessel and gear restrictions

69. A set of limits on vessel dimension is introduced in the clam fishery and in the case of *Sardina pilchardus fry* fishery. In both cases a 10 GRT limit was imposed on vessel. Other measures were associated with this one as their function was only conservative and no role to them in terms of stocks recovering.

4.5 Individual quotas

70. Within the Mediterranean and particularly the Italian fisheries, no output restrictions, quotas or TAC's have been so far established except for sedentary species like clams (see paragraph 3) or highly migratory species such as bluefin tuna. This is due to the multispecificity of the fisheries where, because of the existence of mixed stocks, fishermen cannot shift from the catch of one species to another when their quota has been achieved.

71. In 1997 the EU joined the International Commission for the Conservation of Atlantic Tunas, which provided for the Total Allowable Catch (TAC) of Thunnus thynnus within the Community waters. Pursuant to the measures established by this inter-governmental body, the European Community has assigned the available quotas among the Member States[1] and established specific provisions governing fishing activities, such as temporary withdrawals and minimum catch size.

72. In addition, the national legislation provided for criteria directed to:

a) establish which vessels to include in the list of those allowed to fish bluefin tuna; and

b) allocate Individual Quotas (IQ) of tuna fishery.

73. The TAC is shared among longline, seine and recreational fishery, as well as *tonnare* and UNCL (quotas earmarked for possible compensations).

74. Vessels performing longline and seine tuna fishery shall be registered in the list of the Directorate-General of Fisheries and Aquaculture. This list records all the vessels allowed to perform longline or seine tuna fishery by the pertinent licence or temporary authorizations which ship owners are entitled to request by submitting the relevant application.

75. As for longline fishery, the application shall include statistic statements containing data of the tuna catches made in the years 1995, 1996, 1997 and 1998.

76. To date, the overall quota allocated to the longline segment is shared among the registered vessels according to the average value of catches recorded in the statistic statements of each vessel. The quotas are then determined on the basis of the best two years out of the four recorded by each boat.

77. The allocation of quota among the registered seine vessels follows the modalities given below:

- vessel tonnage multiplied by coefficient 1 if the vessel is only licensed for seine fishing;
- vessel tonnage multiplied by coefficient 0.5 if the vessel is also licensed for another fishing system;
- vessel tonnage multiplied by coefficient 0.33 if the vessel is also licensed for two or more fishing systems.

78. The total annual quota for the seine system is broken down among vessels according to the tonnage resulting from the application of the above coefficients.

79. The sports fishermen of bluefin tuna are also required to register on the relevant list of the Directorate-General of Fisheries and Aquaculture. From the 1st May to the 30th September, their activity is restricted to a weekly total catch of one single tunny per vessel.

80. Following the above-mentioned criteria, the overall TAC of 2004 is equal to 4,920 tons and has been allocated as follows:

[1] Art. 2 of Reg. CE n. 49/1999 establishes the percentages of the annual quota of East Atlantic and Mediterranean bluefin tuna stocks assigned to the Community to be broken down among Member States: France: 33.89%, Greece: 1.77%, Italy: 26.75%, Portugal: 3.23% and Spain: 34.35%.

Table 5. Overall TAC

(2004)

System	Quota (ton.)
Longline	492.00
Seine	3788.4o
Recreational fishery	172.20
Tonnare (tuna fix trap)	221.40
UNCL (unclassified)	246.00
Total	4920.00

81. Following the bluefin tuna fishing campaign of 2003, the producers' associations whose boats had been licensed to perform bluefin tuna longline and seine fishing were entitled to allocate the total allowed quota among vessels. A single producers' association is assigned a quota that is equal to the sum of the quotas owned by each unit belonging to the association. Within a single association, it is possible to compensate the unexploited shares of the quota by the surpluses harvested by members until reaching the fixed threshold.