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Changing Perspectives in CFP: Science-based policies to restore Mediterranean Fisheries

by Dario Piselli*
*(Undergraduate Student - Università degli Studi di Siena, Department of Law)

ABSTRACT
In an European context in which the European Union imports fish and fishery products worth US$26.5 billion from suppliers outside its borders (over US$23.7 billion in 2010, which represented in turn an increase of 11 percent from 2009[1]), making the European Union itself the largest market in the world, with about 26 percent of world imports[1] (excluding intra-European Union trade), while at the same time the status of Mediterranean assessed fish stocks (on which the reports are 'sporadic and irregularly updated', according to European Environment Agency) is considered to be outside safe biological limits for 50 % to 78%, of them, with the Adriatic Sea being in the worst condition[2], there is urgent need to revise current European policies with regard to the sustainable management of Mediterranean fisheries (since 2007, catches in the Mediterranean and Black Sea have declined by 15%[3]), with a special attention to be paid to the current subsidies system, the definition and allocation of fishing quotas and measure's implementation. In general, this presentation suggests the need for science-based policies to be adopted by the European Union, refusing 'socio-economic constraints' claims as a way to delay action on fisheries, as well as the necessity of developing more effective enforcement methods in the field, and calls for a stronger cooperation between EU and other Mediterranean countries.

1. General Overview of Mediterranean Fisheries

In the last few decades, the Mediterranean Sea has seen its fisheries shrink at an alarming rate. It is estimated by the Food and Agriculture Organization of the United Nations that catches in this area have declined by 15% since 2007[3], while at the same time Europe as a whole has experienced a constantly growing demand for seafood, creating a deficit between imports and exports that amounted to 10 billion US$ in 2010[4] and resulted in 62% of all fish consumed by Europeans coming from non-European countries in 2011[5]. According to the European Commission, 82% of Mediterranean stocks are over-exploited (with EEA estimates considering 50-78% of them to be 'outside safe biological limits'[2]), while FAO put this number at 50% for over-exploited stocks and at 33% for fully-exploited ones[6][6]. With regard to single species, all hake *(Merluccius merluccius*) and red mullet *(Mullus Barbatus*) are considered over-exploited in the most recent SOFIA report, with main stocks of small pelagic fish (sardine and anchovy) assessed as either fully exploited or over-exploited[6].

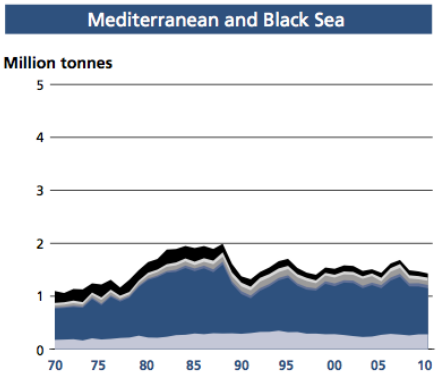

Fig. 1: Capture fisheries production in the Mediterranean for different species of fish. Source: FAO, SOFIA 2012, p.55

The scientific consensus on this particular issue is that if the problem of overfishing is not solved in the next few years, several Mediterranean stocks will suffer a critical collapse, with consequences ranging from the socio-economic impact of declining catches on trade and the livelihoods of coastal communities (with subsequent increase in the dependence on imported seafood) to the environmental costs of an impoverished marine biodiversity and the alteration of the marine trophic web, a process which is already evident in the well-documented proliferation of autotrophic organisms and jellyfish and could be further affected by the increasing penetration of invasive species from the Red Sea or due to introduction in the natural environment.
Despite the fact that EU-27 Member States approximately account for less than 40% of the total catches in the Mediterranean[7], with a major role being played by countries like Turkey, Morocco and Algeria, this presentation will only focus on the role of Common Fisheries Policy (CFP) and its reform proposal in the management of Mediterranean fisheries, as well as examining other EU actions on the issue. However, broader cooperation in fisheries management could be greatly beneficial, and is suggested as one of the solutions for future policies in the region.
In general, the presentation argues that the only way to achieve sustainability in the area's fisheries sector, including trade and consumption, is to restore Mediterranean fish stocks with the help of science-based policies.

1 Food and Agriculture Organization, The State of World Fisheries and Aquaculture 2012 (p.72)
2 European Environment Agency, The European Environment State and Outlook 2010. Marine and Coastal Environment (p.35)
3 Food and Agriculture Organization, The State of World Fisheries and Aquaculture 2012 (p.21)
4 Food and Agriculture Organization, The State of World Fisheries and Aquaculture 2012 (p.76)
5 AIPCE–CEP, Fin Fish Study 2012
6 Food and Agriculture Organization, The State of World Fisheries and Aquaculture 2012 (p.59)
7 FAO Fishstat, Global Capture Production 1950-2011

2. Issues Taken into Consideration

2.1. An assessment of the EU Fishing Fleet in the Mediterranean

The capacity of Europe's fishing fleet, despite data indicating reductions in the size of many European fishing fleets over the last decade, partly as a result of the efforts of Member States to achieve a sustainable balance between fleet capacity and and fishing resources, is still described as 'too high' in the *Report from the Commission to the European Parliament and the Council on Member States' efforts during 2011 to achieve a sustainable balance between fishing capacity and fishing opportunities.*

In particular, conclusions drawn by the EC include the following observations:

- "Many vessels across a range of Member States did not break even financially and were underutilized. Many vessels also had too small revenues to make necessary investments such as modernisation of vessels and gears".
- "In the reviewed period too many fleets were dependent on overfished stocks with respect to maximum sustainable yield, one of the core objectives of the reformed CFP".
- "The current fleet management policy has failed to bring fleets into balance with the resources they exploit. It is not sufficient to rely on compliance with national capacity ceilings (expressed in vessel size (GT) or power (kW)) only."[8]

Power, tonnage and number of vessels, in fact, are not a direct measure of the fishing capacity and, subsequently, of fishing pressure, because at least three additional factors should be considered to assess whether the latter has been reduced: the size of the vessels and their method of fishing (active fishing gears, such as trawls and seine nets, are more efficient than passive gears such as long lines and gill nets), the level of fishing activities (i.e. the number of vessels operating in a fleet and the days at sea) and technological development. This last factor, in particular, allows bigger catches with less effort, and tends to frustrate the decrease in capacity, given that, assuming an yearly 'technological creep' of 3%, "the necessary decrease in capacity that would enable keeping the effective capacity at a constant level would lie around 19.5%"[9], thus far higher than what has been achieved by the European Union.

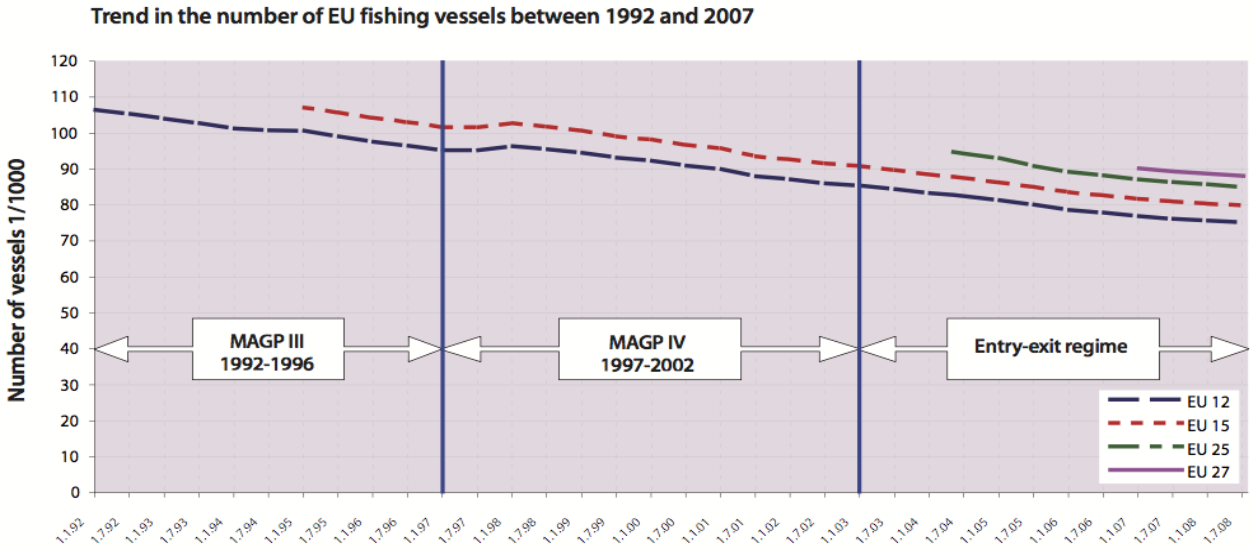

Fig.2: Trend in the number of EU fishing vessels between 1992 and 2007. Source: EEA

Moreover, while catches in the last ten years have been relatively stable and the fishing capacity remained unsustainable, employment in the catching segment showed a decline by 31% since 2002, a figure which adds further evidence to the vicious circle that exists between technological advancement, the volume of catches and occupation in the fisheries sector. It could even be said that defining sustainable development solutions for fisheries must necessarily involve a policy which acts to limit the impact that technological innovations have on fish stocks and coastal communities, with the obvious exception of progress in the field of work safety.

As noted by the European Commission itself, there's one final issue that undermines a realistic assessment of fishing fleets and the balance between them and biological resources: a lack of complete information, caused by the low level of cooperation by Member States, some of which "are not complying at all with monitoring obligations" (see again *The Report from the Commission on Member States' efforts during 2011 to achieve a sustainable balance between fishing capacity and fishing opportunities,* where it is evidenced that several data categories are either missing, not available, not reported or of bad quality, as most countries do not provide the information required by the DCF).

8 European Commission, Report from the Commission to the European Parliament and the Council on Member States' efforts during 2011 to achieve a sustainable balance between fishing capacity and fishing opportunities (p.9) (2011)

9 EEA, Fishing fleet capacity (CSI 034) - Assessment published Sep 2011

2.2. Public Subsidies to the Fisheries Sector under Axis 1 and in the Future

European Union's Common Fisheries Policy and the Financial Instrument for Fisheries' Guidance (FIFG) came under fire in the past, for what the Commission itself identified as "a conflict between priorities for funding, such as support for the reduction of fishing effort and capacity on the one hand, and aid to modernise and renew the older segments of the European fleet on the other."[10] With the introduction of European Fisheries Fund (EFF), which had the support to the adaption of fleets fishing capacity and effort to available fish resources among its main goals (the o-called Axis 1), the European Union tried to reverse that path, but on the 2011's *Fifth Annual Report on the implementation of EFF,* the Commission reported shortcomings in the implementation of measures, such as in the case of financial aid for permanent or temporary cessation of fishing activities:

"Successive evaluations of the EFF and its predecessor the FIFG have highlighted a recurrent problem with the way permanent cessation is used in practice. It is triggered not so much by the need to adapt the fleet to the resources available but by the economic difficulties of fleets, irrespective of the situation of stocks. The requirement in the EFF of putting in place fishing effort adjustment plans before using permanent cessation has not solved that problem. On the contrary, in some fishing effort adjustment plans, permanent cessation is explicitly presented as a tool to compensate for the reduction of fishing opportunities and to improve the economic viability of the remaining vessels. As a result, permanent cessation is often not targeted on the vessels which exert the most pressure on the stocks but on those with the worst financial prospects, which limits the effectiveness of the capacity adjustment it generates."[11]

According to the European Court of Auditors (ECA), despite support for decommissioning the effective fishing capacity of the EU flees in the period 1992-2008 "taking into account the impact of technological improvements, is estimated to have increased by 14%."[12]

The reform package which is now being discussed by European institutions substitutes EFF with the European Maritime and Fisheries Fund (EMFF) as the new fund for the period 2014-2020, meant to further reduce or eliminate public support for capacity-enhancing subsidies, with an explicit provision stating that, among the operations not eligible for funding, "(a) operations increasing the fishing capacity of the vessel; (b) construction of new fishing vessels, decommissioning or importation of fishing vessels; (c) temporary cessation of fishing activities" are included (art.13, *Proposal for a regulation of the European Parliament and of the Council on the European Maritime and Fisheries Fund* / *COM(2011) 804*)

As evidenced by T. Markus, "where subsidies increase or maintain overcapacities in the production sector, public money is basically financing inefficiencies in the fisheries sector and the burdening of the marine environment"[13], thus making the reform of CFP and EU funds necessary and compelling, but also suggesting the need for an effective enforcement as well as for control over compliance with the provisions adopted.

2.3. TACs and Quotas. The MSY

Under the current Common Fisheries Policy, Total Allowable Catches are set annually by the European Commission for most stocks, every two years for deep sea species and in line with multi-annual management plans for a number of particularly threatened ones. TACs are proposed by the Commission on the basis of scientific advice on the state of the stocks concerned and decided on by the Council of Fisheries Ministers. The European Parliament resolution on the Common Fisheries Policy reform proposal submitted by the EC has been approved on February 6, 2013. After that vote, there have been ongoing negotiations between the Parliament and the Council of Ministers, that finally culminated in the political agreement of May 30. The deal still needs formal approval by the Council and the plenary.

Under the European Parliament resolution, which amended the Commission's proposal, "the Union should improve its Common Fisheries Policy to ensure that, as a matter of priority, by 2015, fishing mortality rates are set at levels that should allow fish stocks to recover, by 2020 at the latest, above levels that are capable of producing the maximum sustainable yield and allow all recovered stocks to be maintained at these levels."[14]

However, the agreement reached with the Council determined that "the Union should improve its Common Fisheries Policy to ensure that the exploitation of marine biological resources restores and maintains populations of harvested stocks within a reasonable timeframe above levels that can produce the maximum sustainable yield. The exploitation rates should be achieved by 2015. Achieving those exploitation rates by a later date should be allowed only if achieving them by 2015 would seriously jeopardise the social and economic sustainability of the fishing fleets involved. Those rates should be achieved as soon after 2015 as possible and under no circumstances later than 2020."[15]

In both cases, the need for fish stocks to be restored to a point in which the MSY is achievable has been hailed as a

10 European Commission, The Common Fisheries' Policy – A user's guide (2008)
11 European Commission, Fifth annual report on implementation of the European Fisheries Fund (2011), COM (2012) 747
12 ECA, Special Report of December 2011 on how EU measures have contributed to adapting the capacity of the EU fishing fleet
13 T. Markus, Towards sustainable fisheries subsidies: Entering a new round of reform under the Common Fisheries Policy - Marine Policy 34 (2010)
14 European Parliament legislative resolution of 6 February 2013 on the proposal for a regulation of the European Parliament and of the Council on the Common Fisheries Policy (COM(2011)0425 – C7-0198/2011 – 2011/0195(COD)), Recital 5
15 Outcome of the 6th and 7th trilogue on the CFP reform held on 28 and 29 May 2013 (Compiled by the Council Secretariat)

positive step forward by European Institutions; nonetheless, MSY itself is contested by many ecologists and fisheries scientists like, most famously, Larkin and Holt, as the assumption that the biological productivity of the population, and hence the rate of sustainable yield that might be taken from it, is determined solely by its size or density is considered manifestly not true. Furthermore, MSY represents the maximum yield that can be obtained by commercial fishing from a stock, thus not taking IUU fishing, marine trophic web and other environmental changes into account; and again, errors in estimating the population dynamics of a species can lead to setting the maximum sustainable yield too high.
Moreover, MSY operates on the premise that fish stocks are correctly and realistically assessed. But assessments in the Mediterranean Sea, although improving, have begun only recently, and not all stocks are assessed every year, thus making it impossible to use these data to look at the development of the state of stocks over time[16]. According to the Mediterranean regulation, EU member states should set up multi-annual plans at a national level, but while there has been progress in the implementation of this obligation, some important delays forced the Commission to start precontentious procedures against several of them[16].

A particular situation exists with regard to the Atlantic Bluefin Tuna *(Thunnus thynnus)*, whose stocks are managed by ICCAT. Quotas have constantly been set in excess of the scientists' recommendation by this institution. For example, in 2007 researchers suggested a a global quota of 15,000 tonnes to maintain current stocks or 10,000 tonnes to allow the fisheries recovery. ICCAT instead chose a quota of 36,000 tonnes, with surveys indicating that up to 60,000 tonnes were actually being taken[17]. The bluefin tuna has been considered 'endangered' for many years now, according to the IUCN Red List of Endangered Species, with experts recommending no more than 7,500 tonnes as the sustainable limit against a >70% decline over the last 40 years.
In 2010, efforts by the United States and other countries, including Monaco, to list the species into the Appendix I of CITES were defeated.

Other criticalities stressed under the current CFP are the need for a ban on discards, whose level varies within different fisheries, but can reach up to 50% in the Adriatic longline fisheries for Albacore tuna and swordfish and is particularly high in the case of longlines and hydraulic dredges[18] (although as Mediterranean fisheries are managed through an effort based regime, no over-quota discarding occurs) and which are primarily driven by high-grading and minimum size restrictions; poor compliance by Member States, a complained centralization in the decision-making process and so on.

3. What to do?

3.1. Subsidies

3.1.1. Overview

It is my opinion that the problem of sustainable fisheries in the Mediterranean cannot be solved only by using the very same policy framework that, to a certain extent, 'supervised' the depletion. It is undeniable, in fact, that the decline in employment levels in coastal communities among fishermen is strictly dependent on technological development and the decline in fish stocks, with great importance to be put to the general economic crisis and a lack of attractiveness by the coastal communities and their livelihoods' opportunities, rather than on the modest reduction in Mediterranean fleet size. At the same time, the great increase in the demand for seafood has driven the market, causing a decrease in prices to go along with the huge supply, aquaculture competition and consumers' demand of cheaper species.
Many experts predict a future increase in fish prices if the production is reduced, a factor which involves the positive aspect of more added value for producers[19] (but also the issue of an increasing pressure on the species that become more valuable).

3.1.2. Reserve support for small scale fisheries; fuel subsidies

To break the vicious circle that exists between increasing demand for seafood, overexploitation and the depression of coastal communities, the CFP should be radically rethought: besides from proposing an higher aid intensity rate and some special special measures for small scale coastal fleets, EU legislators should focus on gradually reducing subsidies to large vessels and reserve most of the funds for the above-mentioned, as a way to promote the livelihoods of small fishermen in coastal communities. In particular, subsidies for technological innovation should be allowed under strict scrutiny and only for small fleets; moreover, within the concept of allowable technological innovation policymakers must not include energy efficient engines (see Alain Cadec's amendments), as it would translate into an hidden enhancement of capacity, and only permit investments in work safety, gears selectivity, hygiene and control equipment (maybe by increasing the respective amounts). A financial incentive on energy efficiency could still be supported only if matched by a parallel investment into capacity reduction.
In fact, it shall not be forgotten that, as the European Court of Auditors recently stated, vessels with fuel efficient

16 European Commission, Communication from the Commission to the Council concerning a consultation on Fishing Opportunities for 2014 - COM/2013/319
17 D. Jolly; J. Broder., U.N. Rejects Export Ban on Atlantic Bluefin Tuna. (New York Times, 18.03.2010).
18 European Commission, Impact Assessment of Discard Reducing Policies (Final Report, June 2011)
19 B. Basurco et al., The Mediterranean fisheries sector: a review of facts and figures (in Basurco B., The Mediterranean fisheries sector. A reference publication for the VII meeting of Ministers of agriculture and fisheries of CIHEAM member countries - Zaragoza, Spain, 4 february 2008)

engines still have an incentive to increase their fishing effort, for instance by spending more hours at sea[20].

Fuel subsidies seem to be excluded by the provision of the Title V, Chapter I, as article 27 of the EMFF proposal states that "operating costs are not eligible unless otherwise expressly provided for in this Chapter". However, it shall be avoided that, under investments on energy efficiency, Member States are tempted to include measures that could be fuel incentives in disguise.

However, part of the funding not used for the technological innovation of large vessels could be used to improve the livelihoods of fishermen which are dependent on those vessels under other chapters of the legislation.

3.1.3. Funding for advisory services

Funding for advisory services (lump sums not exceeding the maximum amount of 3.000€), which is possible under art.29 of the Commission's proposals for feasibility studies on project potentially eligible for support or professional advice on business and marketing strategies, shall be scrapped and substituted by funding for a comprehensive advisory service on the potential environmental and long-term socioeconomic impact of the measures proposed by fishermen or the organization of fishermen, or to increase the amount of support allocated for to the creation of partnerships between fishermen and scientists (art.30).

3.1.4. Fishing ports, landing sites and shelters

Support for the innovation, energy efficiency, environmental protection through financing investments in fishing ports infrastructures (art.41) must be made object of the greatest scrutiny to avoid the subsidization of operations that are not coherent with the goals mentioned above. Whenever a similar project is proposed by a Member State, the approval shall go through evaluation by an independent body, possibly at the Union level.

3.1.5. Aquaculture

Support for aquaculture seems out of place in the CFP reform. Being aquaculture the fastest growing sector of seafood production, the provision of support for off-shore aquaculture is counterproductive and uneconomical. Moreover, Chapter II of the EMFF proposal in its entirety seems extremely off balanced with regard to the support of sustainable aquaculture; in particular, it makes no mentions of the potential impact of offshore aquaculture on wild stocks and no distinction between the farming of carnivorous species and the farming of non-carnivorous species. EMFF's provisions with regard to aquaculture (and the general measures suggested by the European Parliament) shall explicitly exclude support for the aquaculture of carnivorous species and invest in control of the existing sites instead; moreover, the fund shall exclude any kind of support for the use of veterinary medicines and shall not cover the loss derived from animal diseases when they are dependent on an unsustainable management of the site. Finally, it should explicitly exclude support, and probably discourage, practices like wild tuna farming in fattening cages and salmon farming, two practices which presents the highest environmental cost of all aquaculture activities.

In general, EMFF funding with regard to aquaculture shall be totally reshaped, especially because the Strategic Guidelines proposed by the Commission did not properly address the criticalities that I underlined; it would be of great concern to adopt a similar funding scheme without proper rules. Especially, EU support for an increased environmental quality of aquaculture should not be pursued on a voluntary basis, with funding as an incentive, but rather be made object of an obligation of environmental protection on producers.

3.2. Ending Discards and Defining Quotas

As a primary point of conversation, it shall be noted (as above) that many scientists discredit the use of MSY as the correct mean of managing fisheries. Thus we should wonder whether it is a good choice to put it as a pillar of the CFP reform. In fact, the CFP reform proposal seems to adopt the precautionary approach as another pillar, but those two criteria are potentially in conflict as stock assessments are never reliable enough to justify MSY-dependent TACs. Apart from the fact that the deal between the Parliament and the Council postponed the adoption of Fishing Mortality Rates that are coherent with the MSY in cases where such a measure would threaten the livelihoods of fishermen (which is against science and economy since an over-exploitation of fishing stocks can represent a short-term gain at best), some stocks are so overfished that, if not properly a ban, then a reduction of TACs strictly based on a precautionary approach shall be needed, and unless the situation of the stock has not stabilized, MSY rates shall not come into force.

Actually, the 'precautionary approach' defined in the CFP reform proposal is strictly shaped to prevent inaction against data deficiencies, but makes no mention of the need to avoid setting quotas that are going to result in an unsustainable harvest of fish stocks, for example by taking into consideration the probability of by-catches, IUU fishing, environmental change and the margin of error in the stocks assessment of the determination of growth rate.
Many scientific theories have been proposed as alternatives to MSY, the most notable being OSY (Optimum Sustainable Yield, which is defined as the "largest economical yield of a renewable resource achievable over a long time period without decreasing the ability of the population or its environment to support the continuation of this level of yield)"

20 European Court of Auditors, Special Report n°12/2011

and MEY (Maximum Economic Yield), which are usually lower than MSY, even if more complicated to define. Whatever the approach, it is clear that, as Larkin put in its famous 'Epitaph for MSY' (1977), “it has at last been recognized that there is no obligation to harvest a species just because it is there. After all, if you think about it, there is a good crop of robins to be harvested, and a potential yield from cats and dogs, if protein is the only consideration”[21]: or, in other words, we should ask ourselves if setting a MSY at all costs is probably prone to breaches and over-exploitation. How much exploitation is safe?

On policy's side, it is attributed to the Council and the Parliament, according to the ordinary legislative procedure (art.9 of the European Parliament's legislative resolution on the proposal for a regulation on the Common Fisheries Policy[22]), the power to establish multi-annual plans of management: their decisions shall be based on scientific advices, and the same obligation is posed on the Council for the fixation of TACs (art.16). However, the best way to separate legislation from stock assessment and the recommendation of quotas is to make the advice binding. Eventual bans suggested by the STECF or other bodies shall be explicitly included in the decision-making process and made binding as well: in other words, it would be highly beneficial to identify an independent scientific committee which should be able to work on all the data collected by researchers and Member States in order to integrate the final decision with a binding scientific recommendation. The EU institutions' role shall be to provide coastal communities with proper support in case TAC and fishing mortality rates that could have an impact on the livelihoods of fishermen are set.

As a conclusion, it shall be made mandatory for all European fisheries, and especially the Mediterranean ones, to adopt multi-annual management plans that contain detailed assessment of the stocks' status and the use of TACs, despite the long standing history of Mediterranean regulations, which have always been based on the fishing effort. Therefore, it shall be made compulsory to reach a minimum level of reliableness in the collection of data, under which TACs are reduced according to the precautionary approach or funding is scrapped (which would also encourage the organizations of producers and the coastal communities to be involved in the scientific and political process and to support their countries' efforts in achieving sufficient compliance towards EU requirements).

On discards, it is shameful that bans have been proposed in some cases starting from 2016 and 2017: where discards are already happening despite the use of proper gears, a ban could be implemented tomorrow, by providing funding on the utilization of low-grade species, non commercial species and undersized individuals as fishmeal or to give scientists some much-needed realistic data for stocks assessment. Obviously, at the same time funding shall be used for the purchase of more selective gears where this does not happen already.

3.3. Implementation, Cooperation and Compliance

With regard to implementation, aspects of the need for Members States, authorities and fishermen to cooperate to obtain a sustainable level of exploitation of fisheries have already been cited throughout this presentation. Much remains to be done in this field, as the misuse of European funds, illegal practices, indifference towards the regulations are well documented issues that still affect most Mediterranean countries and the very same nature of fishing activities makes it difficult to achieve an adequate level of compliance.

On one hand, measures shall have the possibility to be enforced by Member States, and where necessary harsher sanctions shall be put in place. For example, according to the Commission's proposal (art.12), the EMFF shall exclude from funding 'operators involved in the operation, management or ownership of fishing vessels included in the Union IUU vessel list', 'operators who committed other cases of non compliance with the CFP rules which seriously jeopardise the sustainability of the stocks concerned' and so on, but this applies 'only for an identified period of time'. This is, to a certain extent, unacceptable, as gains from IUU fishing would more than likely counterbalance the absence of support for that limited amount of time. Thus, to make the sanction more convincing, the punishment shall include a permanent exclusion from the EMFF, or an exclusion of indefinite time, dependent on a future re-evaluation of the operators' performance. As for Member States, when fishing activities, in particular, 'seriously jeopardise the sustainability of stocks concerned', and this behavior is put forward in full conscience, penal sanctions shall be enforced.

On the other hand, cooperation is the key to good management of fisheries. Incentives shall be provided for fishermen who operate sustainably when they report illegal practices, the misuse of funds and so on, to encourage a 'community-based management' that isolates illegality and favors transparency and participation. More funds shall also be used to encourage fishermen to contribute to stocks assessment, as it should happen with by-catches, and for the fishermen who achieve the best results in reporting their catches. Another idea could be to favor the the use of Community-based quotas in place of or beside ITQs, which are reportedly a good alternative to other measures but underestimate the fact that the perspective of individual gains far outweighs the fear of being caught if harsher sanction are not put in place.

21 P.A. Larkin, An Epitaph for the Concept of Maximum Sustained Yield (Transactions of the American Fisheries Society, 1977)

22 European Parliament legislative resolution of 6 February 2013 on the proposal for a regulation of the European Parliament and of the Council on the Common Fisheries Policy (COM(2011)0425 – C7-0198/2011 – 2011/0195(COD))

4. Conclusion

Finally, I come to a solution which crosses the border of European countries to conclude my presentation. As many suggested, and as I also noted above, a new scientific body, totally focused on the Mediterranean Sea, could help improve the knowledge of the region's stocks, provided that its recommendations are held binding. This scientific body could also be designed as an authority that encompasses all Mediterranean countries, for a coherent and cooperative management of fisheries in the *Mare Nostrum*, and provides scientific advice (which, again, needs to be binding) in order for it to be included in all Mediterranean countries' decision-making process. The General Fisheries Commission for the Mediterranean (GFCM), in fact, is not enough.

It is urgent that all Mediterranean States recognize the need for a common, shared management of fish stocks, despite all the differences that exist from country to country: the only way to do so is to have scientific knowledge of the stocks' status and to transfer this knowledge into the decision-making process, by fixing science-based TACs in all states (whatever the remaining part of the fisheries policy is in every single state).

Otherwise, and it is already happening, management turns into conservation, which is a prelude for destruction: and policymakers will have to take full responsibility in that case, for not listening to science.

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