

# A group analysis of fishermen perception of the stakes for the future of fisheries in Europe: results of a postal survey.

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## Abstract

For three years, a multidisciplinary group of researchers in social sciences, has analysed the Ethical, Legal and Social Aspects of fisheries management in Europe. In the framework of this ELSA Pêche programme funded under the ELSA line of the FAIR research programme of the European Commission (DG XII, Research), a postal survey has been organised to gather the diversity of opinions among fishermen across Europe. This survey deals with the Ethical, Legal and Social Aspects (ELSA) of fisheries management. A questionnaire has been sent to more than 8,000 boat owners in the following countries : Greece, Italy, Spain, Portugal, France, United-Kingdom, Ireland, the Netherlands, Denmark, Norway and Iceland. More than 1650 answers have been received. The questionnaire has been structured in four items : a global statement on fisheries and marine ecosystems, the problems in fisheries and their causes, governance of human to nature relation and governance of human to human relation in fisheries. Fishermen were asked to give their opinion according to a scale system. The opinion expressed are then analysed according to major characteristic of localisation in Europe (country, maritime space), of the type of activity (gear), of the area of activity (coastal/offshore). Finally the results of a multidimensional analysis of the responses are confronted to the main view expressed by the fishermen representative during the interview conducted in the first phase of the programme.

**Keywords:** European fisheries, Fisheries management, Ethics, Governance, Fishermen perception

In the framework of the ELSA Pêche programme<sup>1</sup> a wide European postal survey on a number of elements in fisheries management and dealing with the Ethical, Legal and Social Aspects of fisheries management has been implemented on 11 countries. A questionnaire has been sent to a total of more than 8,000 fishermen in Greece, Italy, Spain, Portugal, France, United-Kingdom, Ireland, the Netherlands, Denmark, Norway and Iceland. The objective of the survey was to confront the results of the multidimensional analysis of the responses to the main view expressed by the fishermen representatives during the interview conducted in the first phase of the programme.

Four mains themes have been defined and organise the questionnaire:

- A global statement of fisheries and marine ecosystems.
- The problems in fisheries and their causes.
- Governance of human to nature relation in fisheries.
- Governance of human to human relation in fisheries.

Combining postal survey and direct interviews 1657 fishermen have answered to the questionnaire.

Table 1 respondent rate per country

Country	Nb of Respondents	Respondent Rate (%)
Norway	138	19,7%
Denmark	43	7,2%
Iceland	78	28,9%
UK	228	19,0%
Ireland	35	10,0%
Netherlands	27	6,0%
France	320	26,7%
Spain	287	Direct
Portugal	114	Direct
Italy	206	15,3%
Greece	181	Direct
Average respondent rate (excluding Direct interview)	1657	17,6%

<sup>1</sup> Case study reports, project report and the complete survey report are downloadable from the project Website:  
<http://elsa.peche.free.fr>

The respondents' distribution in terms of fishing boats' length and power is rather homogenous whatever the geographic scale. From a technical point of view and according the diversity of fishing gears and vessels at the European scale, a technical typology has been built into 8 groups combining technical criteria and fishing area in order to read more easily the different themes analysis.

The survey analysis is mainly based on multivariate analysis as the individual observations are crossed with nominable variables. Then an interesting statistical property arises because an individual observation is located at the average distance of the modalities owned by it, and a modality is located at the average distance of the individual observations possessing that modality (Bry, 1995). Factorial methods or multivariate analysis establish synthetic representations of wide data tables, generally by the way of graphic representation. These methods aim at reducing the data tables dimensions in order to represent the relationships or associations between individuals and between variables in some low dimension spaces.

#### **A global statement of fisheries and marine ecosystems.**

There's an important relationship between the sea representation and the global statement of fisheries and marine ecosystems. This relationship is also characterised in terms of fleet segment. To a different perception of the sea corresponds a different way to exploit it.

Two main groups of fishermen are opposed in terms of opinions expressed. It concerns the "Deep-sea and coastal fisheries of Northern Atlantic" (Iceland & Norway, but some Mediterranean vessels also belong to this opinion group) and the "Coastal fisheries of Tyrrhennian Sea and Northern Portugal".

For the first group, applying trawl, net, long-line and seine, the sea is first "a place to work and make a living from". Other representations are rarely quoted. This sea representation is combined to a fishing industry which is doing well, to some robust ecosystems and to some fish resources which fluctuate naturally. Concerning interest and rights deserved to some species, the statement goes to some interest at no consideration as all other groups are less clear cut or more in favour to some special rights. This is the most "optimistic group" in terms of global statement.

The Coastal fisheries of Tyrrhennian Sea and Northern Portugal appear at the complete opposite of the Nordic fisheries group. Gears applied are mainly nets or polyvalent vessels based on nets. The sea representation is first expressed in terms of "a place of freedom and dream" and "an inexhaustible source of food. A "place to work" is ranked in last position and this is the only fishermen group who choose this option. Every other groups rank this proposal in first or second place. This perception is also translated in terms of global statement on fisheries and ecosystems. The opinion expressed is more pessimistic and nature centred. Fishing industry is strongly perceived as experiencing problems and fish resources are in danger of irreversible destruction. With the polyvalent non trawl coastal fisheries of Eastern Mediterranean (Greece) and Iberian peninsula (Central Portugal), this is the only group which deserves special rights to some species. This proposal appears as more Mediterranean centred in terms of localisation and non trawl centred in terms of gears applied.

To a different perception of the sea and of marine ecosystems, fishermen also express difference in other themes such as human to nature relation and human to human relation. The "Coastal fisheries of Tyrrhennian Sea and Northern Portugal" could appear as more nature or ecosystem centred than the "Deep-sea and coastal fisheries of Northern Atlantic". The opposition is also found in terms of the importance of environmental NGOs in fisheries management confirming the nature centred position or not. But if coastal fisheries of Tyrrhennian Sea and Northern Portugal are worried about the ecosystems statement they externalise the main causes of their degradation (massive tourism development and climatic changes). At last to influence the management of marine resources, fishermen should have strong alliances with political parties.

On the other hand, deep-sea and coastal fisheries of Northern Atlantic are market oriented as a way to better manage fisheries. Trading of fishing rights is judged as rather good in terms of economic efficiency and moral acceptability and TACs & Quotas are also regarded as good instruments. There's almost no low return from fishing confirming their good opinion in terms of fishing industry statement. "Ban harmful gear only" is judged as rather bad and financial support to fishermen organisation is not important, underlining a wish or a will to internalise fisheries management and coming in opposition to the above group.

Figure 1 Fishermen's Sea representation and their global statement on fisheries and marine ecosystems

Sea representation		GLOBAL STATEMENT ON FISHERIES AND MARINE ECOSYSTEMS				Optimist ↑  ↓ Pessimist
		Fishing industry	Fish resources	Marine ecosystems	Dolphins, whales, sharks, turtles	
+ ↓ -	<b>Work</b> n-a n-a <b>Freedom</b>	<u>Deap-sea and coastal fisheries of Northern Atlantic (Iceland &amp; Norway)</u> Trawl, net, longline, seine <i>(It is to note some Mediterranean vessels)</i>	+	= +	+	= -
+ ↓ -	<b>Work</b> Danger Food <b>Freedom</b>	<u>Coastal fisheries of Eastern Mediterannean (Greece) and Iberian peninsula (Central Portugal)</u> Polyvalent non Trawl, Net, Longline, Trawl	-	-	=	= +
+ ↓ -	<b>Work</b> Danger <b>Freedom</b> Food	<u>Bay of Biscay/Irish Sea and Channel Fisheries (France &amp; UK)</u> Polyvalent non Trawl, Polyvalent trawl / mainly coastal It is to note vessels from Western Mediterranean Sea	-	-	=	=
+ ↓ -	<b>Work</b> <b>Freedom</b> Food Danger	<u>Coastal fisheries of Western Mediterranean and Adriatic, Fisheries of Northern Sea (Spain, Italy, France &amp; UK)</u> Net, Long-line, Bottom trawl	-	-	=	=
+ ↓ -	Danger <b>Work</b> Food <b>Freedom</b>	<u>Coastal fisheries of Mediterranean Sea (Greece &amp; Italy) &amp; Fisheries of Iberian Peninsula (Northern Portugal)</u> Net, Trawl, Seine, Trap, Polyvalent non Trawl	-	-	=	=
+ ↓ -	<b>Freedom</b> Food Danger <b>Work</b>	<u>Coastal fisheries of Tyrrhennian Sea and Northern Portugal</u> Net or Polyvalent based on net	- -	-	= -	+
+ ↓ -	<b>Work</b> Danger/n-a n-a n-a	<u>N-A FISHERMEN</u> <u>Fisheries from Atlantic to Northern Sea</u> Spain, France, UK, Norway (additional Iceland and Italy) Diversity of gears	- -	- -	= -	= +
+ ↓ -	<b>Work</b> Danger <b>Freedom</b> Food	<u>SAMPLE'S POPULATION</u>	-	-	=	=

THEME H: Future Paths for Rights Based Fisheries Management

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Others fishermen groups take place between this opposition. Global opinion is very close to the average opinion expressed by the sample, especially in terms of statement opinion. They are worried about the industry and resources statements but feel rather less concern concerning marine ecosystem.

In addition to these different groups there is another important one characterised by a non answer behaviour. They mainly come from Atlantic and Channel/Northern Sea, Iceland and Italy complete this group. There is no real differentiation in terms of gears, métiers or power. The group's characteristics remain close to the sample's one. Fishermen from this group feel resentment and appear as rather resigned. They are pessimistic concerning the future of fisheries, don't believe in changes and they will be encountered along most of the other themes studied. Fishing industry is experiencing a lot of problems, fish resources are overexploited, marine ecosystems are disturbed to in danger of irreversible destruction and some species deserve some interest to some special rights. The sea is just a place to work and make a living from associated to a place of danger. They are also the most experienced.

Different factors can influence the sea perception and the way to exploit it. But these perceptions can also be translated in terms of fisheries management options or sea protection as well as in terms of fishermen representatives. Others survey's themes give some more detailed information concerning factors explaining this difference of opinions expressed, such as environmental conditions, forms of socio-economics organisations, etc.

### **The problems in fisheries and their causes.**

This theme appears as the most discriminating one. The first information is that three main groups of opinions merge:

- fishermen who assess that there's no problem;
- those who think that the different propositions correspond effectively to some big problems;
- and those who don't have some really clear cut opinions, balancing between minor and serious.

Discriminating factors between no problem and big problem (graveness of problems) are mainly related to stock depletion and industry difficulties questions. The most contributory answers to the discrimination in terms of individuals giving clear cut answers and those giving no clear cut answers, are mainly related to the Industry difficulties and Fishing communities questions. On the other hand, the lower discriminating power of question related to the reasons of "marine ecosystems degradation" can be noted.

Based on these first discriminating factors, the sample population can be read in terms of groups expressing different opinions on the perception of the problems in fisheries and their causes. But beyond of these differences, there're some common problems to each group.

Common problems to each group are mainly centred on reasons external to fishermen (urban and industrial pollution for instance as the reason of marine ecosystems degradation). Only "damaging fishing practices of some fishermen" and "disappearance of local fishing culture" are quoted as internal factors. It underlines the importance of the local culture in the way to manage fisheries (and its relation to the sea representation). Others causes can sometimes appear as refuge values such too many regulations and taxes, but also and especially those related to the main cause of non-cooperation or poor compliance: too many loans or unfairness of control. Beyond of these common problems, others causes of the above items are more shared beyond fishermen opinions and will contribute to differentiate them from an optimistic perception or situation to a pessimistic one.

#### *The "happiest" Portuguese and Spanish fishermen (337 fishermen – 21,9 % of the sample)*

Facing almost no problem excepted the sampling population's common problems, perceiving as good a global statement about fisheries and marine ecosystems, fishermen from this group could be more conservative without wishing external involvement or additional tools to manage fisheries than those yet existing. Licences and permits or technical measures are perceived as good, organisations and communities are judged as not very important for fisheries management. It concerns mainly the coastal fisheries applying net, long-line and seiners from the Iberian peninsula and the Spanish Mediterranean sea.

The second group of this typology is the complete opposed of the above one, as it could be called the "big problem" group.

#### *The worried fishermen from Mediterranean Sea (521 fishermen – 31,2% of the sample)*

They are mainly coastal fisheries of Mediterranean Sea applying net and polyvalent non trawl. Bigger vessels are also found but shared on a diversity of métiers excepted big seiners. Representative countries are Greece, Italy (except Adriatic Sea) and France. In addition to these most representative vessels, some vessels from the Atlantic complete the group.

These fishermen express a rather pessimistic opinion in the sense that most of causes propositions are quoted as big problems. This is the only group of fishermen saying that climatic changes have an impact on the ecosystem degradation, but they are also the only ones who rise and dare to rise the problem of too many fishermen. This is reinforced by the selfish attitudes of fishermen quoted as a big problem related to the stock depletion.

The relationship with the sea representation is still found: fish resources are overexploited, fishing industry is experiencing problems, marine ecosystems are in danger of irreversible destruction. This group is close to the pessimistic group identified in the global statement analysis and is also be illustrated by the opinions expressed on other themes. Fishermen of this worried group appear as more ecosystems centred and adopt the most a precautionary approach. Despite the fact they apply for subventions and financial support, they also wish to solve problems among themselves.

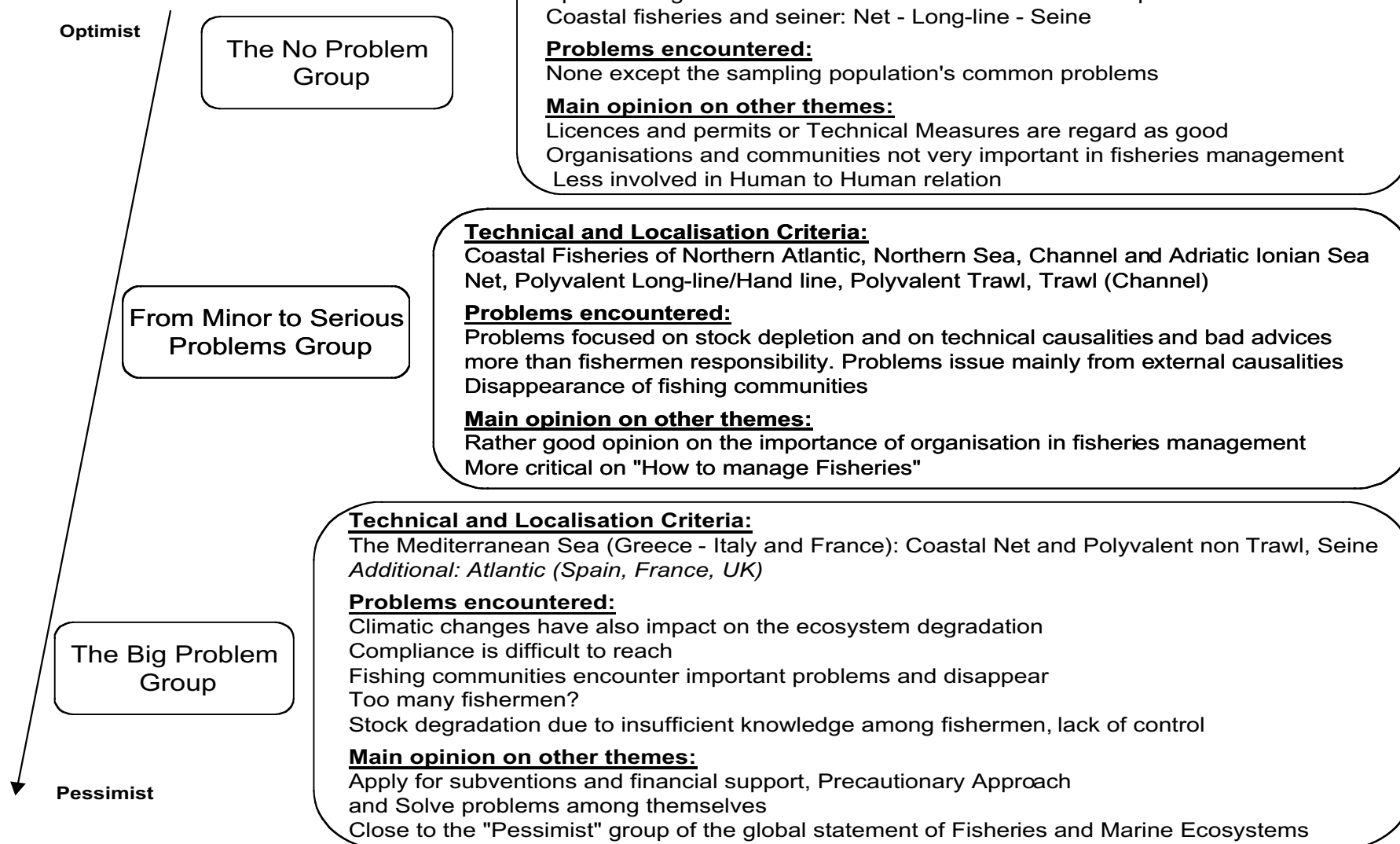
Balancing in terms of opinions between minor and serious problems in fisheries, a third group takes place between the two opinion groups already studied.

*"From minor to serious problems" (585 fishermen – 36,3% of the sample)*

These fishermen are mainly characterised by coastal fisheries of Northern Atlantic, fisheries of Northern Sea, Channel and Adriatic and Ionian Sea. Gear applied are nets or vessels are polyvalent with long-line/hand line or polyvalent trawl. Some pure trawlers appear but they mainly belong to the Channel fisheries (with also some additional big métiers of Atlantic but they have not well cut opinion and count for only 10%).

Figure 2 Typology of fishermen according to their opinion about problems in fisheries and their causes

**Perception of the problems in fisheries and their causes**



Beyond of the general opinion about common problems, this group is representative of fishermen with no clear cut opinion about fisheries problems and their causes: either causes propositions are minor or serious (close to the sample population's opinion). The analysis underlines a perception which externalises the causalities of problems in fisheries. Fishermen are not guilty, main difficulties come from technical progress, economic and financial pressure, bad advices (from scientists), etc. This comes in opposition to fishermen of the worried group who involve more fishermen's responsibility. The disappearance of solidarity as a source of problems in fishing communities is also quoted - in addition to the common opinion about the difficulty of recruitment and the disappearance of the local culture. It is reinforced by a trend to an ageing fleet as the recruitment of young fishers has to face less attractive working conditions furthermore that the supreme motivation or the hope of operating one day its own ship has been well damaged. Their sea representation is clear: it is a place of work and danger. There's a stronger optimistic view about the global statement of ecosystems and resources: fish resources are more fluctuating and fishing industry is more coping compared to the global answer of the sample.

Opinion expressed on the other themes of the survey is a rather good opinion on the importance of organisation in fisheries management. But fishermen are more critical on how to manage fisheries with a negative global opinion about most of proposals tools, but they're more agree with the sea protection propositions.

Some of metiers already distinguished (especially Nordic deep-sea vessels) seems strangely absent from the opinion expressed about the problems in fisheries and their causes. The non answer groups catch a part of the information.

Characterised with evidence on previous themes (fleet technical typology, sea representation, etc.), the deep-sea Nordics vessels should belong to the "happiest" group of the present theme study, as it could be thought they don't encounter specific or particular problem (ecosystems, industry or resources' statements are considered as good and they perceive the sea as a place of work).

The first group of non-answer is represented by the big fishing vessels from Northern Atlantic and Greece (net, polyvalent trawl and seine). The other group of non answer is characterised by some coastal fisheries of Northern Atlantic (those which don't belong to the minor or serious problems group), and coastal to medium fisheries of the Western Atlantic (Bay of Biscay and Ireland Sea) with additional vessels from the Channel. Main gears applied are long-line/hand line, polyvalent non trawl and polyvalent trawl (based on bottom trawl mainly). For these two groups, beyond of a non interest for this theme, the problems in fisheries and their causes could be felt as a fact to be obliged to justify themselves regarding a global statement perceived as rather good.

Opinion groups identified remain strongly linked to their sea perception. Even if the groups are not exactly the same, they remain a little bit close with, for instance, a worry of some Mediterranean fisheries close to their sea perception. Another important characteristic is the tendency to either externalise or to either involve fishermen responsibilities in fisheries problems. But fishers are also and often differentiated on the other themes of the survey. A different perception of the sea and some different problems in fisheries related to different contexts, should also be translated through a different approach in terms of fisheries management and in terms of relation to nature.

### **Governance of human to nature relation in fisheries.**

This theme aims at studying criteria and means to manage fisheries and protect the sea. It strongly discriminates fishermen.

Globally the most appreciated measures are related to the sea protection through precautionary measures, the less appreciated measures are related to technical measures for fisheries management. Fishermen discrimination according approbation to proposal measures is mainly based on the best way to protect ecosystem as discrimination in terms of opinion expressed (clear cut opinion or no) is mainly based on fisheries management instruments.

But whatever the groups there's a general agreement to say that access fees, levies or taxes are regarded as very bad. This is the same for "the best thing to when we are not sure about the risks or consequences" also regarded as very bad. On the other hand, "Ban harmful gears only", as the best way to protect ecosystems and "Declare a total moratorium when there's a risk of extinction", as a way to protect species, are regarded as good to very good. Finally everybody agree with the ways to protect ecosystems excepted Western Mediterranean fisheries which disagree with marine reserves and scientific management of ecosystems.

Illustrated by technical and localisation variables, it can be roughly said that:

- Dutch, Britain and Italian fishermen are rather not in favour to the proposed measures as Greek fishermen are rather in favour of these measures.

- Fishermen characterised by "polyvalent non trawl" are globally favourable to the whole measures. Fishermen characterised by "bottom trawl" or "polyvalent trawl and dredge" are rather non favourable to the proposed measures.

But strong regional factors exist beyond of the country level. Crossing discriminating factors underlines some strong oppositions between opinion groups and allows to characterise them more in depth in terms of behaviour. More especially related to the ways to protect species, the tradability of fishing rights, the restriction access and the precautionary approach, the main fishermen groups are the followings. They are also characterised at the light of the other survey's themes which let already appear some relationships between the ways to manage fisheries and protect the sea and other themes, such as the sea perception for instance.

<b>Don't Trade Fishing Rights!</b>	<b>UK and France: Channel - Bay of Biscay/Irish Sea</b> (Industrial and Polyvalent Trawl)
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This group opposed to the trading of fishing rights is also opposed to instruments based on outputs and prefers those based on inputs. Fishermen are very favourable to solve the problem of juveniles catches (77%) and then to leave them in the sea (73%). Stock depletion causes are tentatively externalised, but fishermen claim for external support both from civilian society and in terms of subsidies. They are also very sensitive to solidarity with local communities, within fishermen and through the fishing industry. Nevertheless they are rather unfavourable to scientists advices and scientists involvement in fisheries management.

If Industrial and Polyvalent Trawl is chosen to illustrate this group, it is rather difficult to give a real technical identity to these fishermen. Neither vessels' length nor gears can really characterise this group compared to the European scale.

<b>Trade Fishing Rights!</b>	<b>Fisheries of Northern Atlantic (Iceland and West Norway)</b> Industrial and some Coastal: Trawl, Line and Net
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This group appears as the less ecological centred but rather market oriented. Preferences towards output instruments to manage fisheries are significant. Fisheries statement is good and then there's no needs of public subvention. Fishermen should solve their problems among themselves and must remain independent. But that doesn't mean that there's no interest for external advices to ensure the good statement of fisheries. This group rises an opposition markets/ecological approach.

<b>Perhaps we can Trade Fishing Rights?</b>	<b>Iberian Peninsula, Mediterranean Spain and Adriatic/Sicilia</b> Seine, Trawl, Polyvalent non Trawl (Pot) - rather industrial
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Representative of some no clear cut opinions, these fishermen agree with almost all proposals except political alliances. If trading of fishing rights can solve problems then why don't trade them even if it's judged bad from a moral point of view. All kind of support is accepted. This group is rather centred on big industrial vessels.

<b>Protect the Ecosystems to all prices and by all means!</b>	<b>Mediterranean Coastal Fisheries (Except Spain)</b> Net and Polyvalent non Trawl
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Appearing as the most ecosystems and nature centred, this group is strongly in favour of the most drastic measures to protect the ecosystems. This is related to the set up of marine parks, the ban of harmful gears as well as the implementation of access restrictions and fishing periods. It is also ready to trade fishing rights, even if it is judged as bad in terms of moral acceptability, if it can contribute to the protection of ecosystems and resources. This protection is the foundation of a fishing industry in good health and of a good fisheries management. This is reinforce by the fact that this group is the most precautionary one.

<b>Let us manage by ourselves!</b>	<b>Western Mediterranean: Tyrrhenian Sea; Some Coastal Fisheries of Channel and B.Biscay/Irish Sea</b> Long-line, Net, Polyvalent Trawl
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"Leave us in peace" could be the maxim of this group. We can manage by ourselves better than the actual management, but there's a need for public subsidies. Main causes of stock depletion and ecosystems degradation are also and mainly external to fishermen behaviour and out of their responsibility field. Finally, fisheries belong to fishermen. This group is also close to the pessimist one concerning the global statement of marine ecosystems. For these fishermen, the sea is first a place of freedom.

The non-answer groups are still found and are still the same than those characterised on the study of fisheries problems and their causes. Similar reasons will explain the same behaviour.



Some relationship between the different survey's themes through certain groups grows stronger and stronger. This is particularly true for some fisheries of the Northern Atlantic and for some coastal Mediterranean fisheries. The study of the last theme – Fishermen, fishing communities and fisheries management – completes the analysis of fishermen perceptions.

#### **Governance of human to human relation in fisheries.**

Solely analysed, this theme related to fishermen, fishing communities and fisheries management appears as a rather weak discriminating theme among European fishermen. Groups are extremely difficult to read in terms of métiers as the main group represent half of the sample. Numerous questions are often evidence for fishermen such as those related to solidarity and fishing communities, leading to some weak or very few discriminating factors and maybe there's a failure in the questioning on this theme. Thus everybody agree with education and training but also with support from public as some kind of important supports. If fishermen's organisations, fishing communities and scientists are judged important or very important in the management of fisheries, it can sometimes lead to some contradictions with the previous theme studied (especially concerning the importance of scientists). This discrimination is not really interesting without a cross analysis with the others themes.

There're few negative opinions and main opposition took place between important and very important concerning the different proposals. Differences based on the “Not important” option are mainly expressed in terms of financial support or not, in terms of some problems to solve among fishermen and in terms of importance of environmental NGO's as a proxy of the nature centred position already met on previous themes studied. To synthesis, almost all organisations proposed to be involved in fisheries management are judged from important to very important.

Table 2 Fishermen's opinion groups on human to human relations

<b>GROUPS</b>	<b>GLOBAL OPINION</b>
<b>Coastal Fisheries of Iberian Peninsula &amp; Western Mediterranean</b> Net, Long-line, Bottom Trawl & Seine	All organisations are important for fisheries management except alliances with political parties
<b>Fisheries of UK (East) and Eastern Mediterranean (Greece)</b> Seine and Bottom Trawl	Similar to the above group but: - Representation on committees making decisions is more favoured than organisations including all fishermen - Environmental NGOs are less important
<b>Polyvalent non Trawl from Portugal and Greece</b> Long-line and Net (Coastal)	Organisations are important for fisheries management except politicians and administration, but: - Fishermen shouldn't solve all problems among themselves - Environmental NGOs are also important
<b>Fisheries of Northern Atlantic (Iceland Norway)</b> Industrial & Coastal: Trawl, Line & Net	Organisations are very important and fishermen should solve problems among themselves but: - Financial support and public subsidies are not important - Environmental NGOs are not important
<b>Large diversity of gears and regions</b> Almost all regions and gears are represented Close to the average sample's answer	Organisation, support, etc. are very important for fisheries management, fishermen should solve problems among themselves but: - It strongly requires financial support and public subsidies - Environmental NGOs are important
<b>Non-answer:</b> <ul style="list-style-type: none"> <li>- Medium Bottom Trawl and dredge mainly from the Bay of Biscay/Irish Sea (additional: Channel, Nth. Sea, Med.) UK, France &amp; Ireland</li> <li>- Greek seiner, Norwegian coastal liner (some Italian)</li> </ul>	

Coastal Fisheries of Iberian Peninsula & Western Mediterranean and Fisheries of UK (East) and Eastern Mediterranean (Greece) are very similar but the second one is more determined, especially in expressing there's no need of organisation per species and the less importance of environmental NGO's.

Polyvalent non trawl from Portugal and Greece marks mainly its difference by the rather ecological nature of problems to be solved among fishermen and importance giving to environmental NGO's. Others problems to solve depend much on other organisations at a supra fishermen level, maybe due to the requirement of fairness and to take a decision to solve these problems (fleet over-capacity).

Opinions expressed by fisheries of Northern Atlantic (Iceland Norway: Industrial & Coastal: Trawl, Line & Net) have been already perceived on the previous themes. Fishermen should manage by themselves and not to be dependant from public subsidies to the industry or financial support to fishermen organisations. Alliances with political parties are also rejected and it is the group which expresses less importance to environmental NGO's and no need of organisation per species.

For the last group, rather non well determined in terms of gears and regions, every proposals related to organisations, support, solidarity or communities are very important. The only one which is rejected is the alliances with political parties. In terms of solidarity to fishermen and problems to solve among themselves, this the closest group to the fisheries of Northern Atlantic.

The dimension of this theme is much more interesting in relation with the other survey's themes, especially by considering their relationship and crossed exchanges.

### **Synthesis**

If each theme illustrates some relations with others, “Problems in fisheries and their causes” catch the main part of information when all themes are considerate simultaneously. Considering this theme as illustrative when analysing the others, the European survey underlines some relationships between the sea perception, the way to exploit it and the way to manage fisheries. It can take several dimensions: in terms of gear, localisation, together or separately. Impact of local organisation, culture, etc., are other elements determining these relations.

The first and strongest element is the opposition North / South through industrial and some coastal fisheries of Northern Atlantic on one side and Mediterranean coastal fisheries applying net or polyvalent non trawl vessels on the other side. It concerns mainly Iceland and Norway (West coast) and all Mediterranean countries except Spain, but localisation evolves according the theme studied. It is also and respectively translated in terms of market oriented or nature sensitive centred. Market oriented through the trading of fishing rights combined to a rather positive opinion in terms of global statement and the will to avoid public subsidies but the wish to benefit from scientists. On the other hand the ecological concern of these Mediterranean coastal fisheries is combined to a pessimistic global statement and the agreement to most of proposal tools or option to manage fisheries, even those related to the tradability of fishing rights, despite a moral acceptability judged as very bad, if it can reach the objective to protect ecosystems. Combining strong ecological concerns and market tools it illustrates that markets are then not strictly or automatically opposed to ecological concerns in some fishermen's opinion.

But another Mediterranean fishermen group also “ecological centred” and pessimistic concerning the global statement of ecosystems, express another opinion in terms of management proposals. Strictly opposed to the tradability of fishing rights, the Western Mediterranean fisheries (Tyrrhenian Sea) complete by some coastal fisheries of Channel and the Bay of Biscay are rather opposed to any measures which don't depend directly from fishermen, except subsidies. Then beyond of this “common” North/South opposition, other factors than localisation or metier can influence the way to manage fisheries and the sector perception as illustrated by other fishermen opinion groups.

Mix groups (already represented by Thyrenian and Channel fisheries) are illustrative of factors going beyond of localisation criteria. This is especially the case of UK and French Channel fisheries and from the Bay of Biscay and the Irish Sea. Represented by industrial and polyvalent trawlers they appear as strongly opposed to the tradability of fishing rights as well as TACs and quotas and prefer licence or technical measure. Close to the Nordic fisheries in terms of gears and fleet segment, they express a total opposite opinion according the threat to loose access to the resource facing more capitalistic power fishermen.

Big Greek seiners and coastal fisheries of Northern Atlantic represent another kind of group illustrative of factors going beyond of gears or metiers applied and of the opposition small vessels big vessels. There're are here characterised by a non answer behaviour already studied and there're also the older fishermen of the survey. To an additional level it sometimes becomes impossible to characterise both in terms of metier and localisation an opinion group, such as fishers considering that organisation and support to fisheries are important and that they should solve problems among themselves, requiring subsidies and considering environmental NGO's.

At last between strong opinions expressed, a wide range of fishermen are found with no clear cut opinion. If it mainly concerns Iberia peninsula fisheries, many of these fishermen express they're no real problem despite a rather pessimistic global statement. They agree with the different proposals if it can improve the fisheries sector situation, but there's no hurry.

Some different gears, practices or métiers induce different opinion groups (Northern fisheries compared to Western Mediterranean) but also some different gears and localisation express close or similar opinions (Big Greek seiners and coastal fisheries of Northern Atlantic). Importance of social and cultural factors is also crucial but on the other hand some oppositions such as market/communities are not so clear. Some of these factors are more readable at the national scale but it was out of the scope of this survey aiming at gathering fishermen's opinion at the European scale. But material exists and could provide other scale analysis or technical entries.

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Working paper n°6 : Gregory Valatin - "Fisheries management in the Netherlands : an overview".

Working paper n°7 : Serge Collet - "Institutions et aménagement des pêches en Italie : une nouvelle dynamique".

Working paper n°8 : Katia Frangoudes - "La gestion des pêches et le dispositif institutionnel en Grèce".

Working paper n°9 : Florence Vivier - "La politique de la gestion de pêches au Portugal".

Working paper n°10 : Sébastien Metz - "La gestion des pêches en Espagne".

Working paper n°11 : Katia Frangoudes - "Reproduction et organisation sociale des pêches côtières en Méditerranée".

Working paper n°12 : Denis Bailly & Serge Collet - "An ethical approach to re-think the present and the future of the Common Fisheries Policy in the European Union".

#### Appendix:

- Fishermen answers to the questionnaire
- General respondents' fleet characteristics according localisation and technical criteria

## A. General characteristics of the 1657 respondents:

### A0. What region or country do you live in : (See charts in Report and Appendix)

A1. Are you : fishing boat owner: 80% skipper: 70% crew-member: 10%

A2. Are you involved in the management of : one fishing boat: 86% or more than one: 14%

### A3. What are the technical characteristics of your current or most recent fishing boat :

Overall Length: < 12 meters: 43% 12 – 16 meters: 19% > 16 meters: 38%  
Power: <= 90 kW: 34% 90 – 250 kW: 32% > 250 kW: 33%

Year of purchase: < 5 years: 31% 5 – 10 years: 18% 10 – 20 years: 29% > 20 years: 22%  
Age: < 10 years: 22% 10 – 19 years: 32% 20 – 29 years: 25% >= 30 years: 22%

### A4. What are the main fishing gears on this boat :

Pelagic Trawl	9%	Day seine	10%	Dredge	10%
Demersal Trawl	32%	Night Seine	9%	Trap/Pot	20%
Surface Nets	7%	Long line	27%	Other	15%
Bottom Nets	38%	Hand/Pole line	13%		

### A5. Do you fish :

- Closed to the coast (0 to 3 miles) 46% - Inshore zone (3 to 12 miles) 57%  
- Off-shore (12 to 200 miles) 33% - Beyond of 200 miles 4%

### A6. Do you have other sources of income Yes 12% / No 88%

### A7. How old are you :

Age: <= 35 years: 18% 36 – 45 years: 32% 46 – 55 years: 31% > 55 years: 20%

## B : Global State of Fisheries and Marine Ecosystems

### B1. What does the sea represent for you (rank 1, 2, 3, 4 from the most important to the less important) :

- An inexhaustible source of food "4" Non answer : 29%  
- A place of freedom and dream "3" 26%  
- A place to work and make a living from "1" 2%  
- A place of danger and a hard life "2" 18%

### Among the following opinions, with which would you agree more:

B2. In your opinion, the fishing industry is :	- Experiencing problems	66%	Non answer 0,4%
	- Coping	28%	
	- Doing well	5%	
B3. In your opinion, fish resources are :	- In good condition	5%	1,3%
	- Fluctuating naturally	30%	
	- Overexploited	65%	
B4. In your opinion, marine ecosystems are :	- In danger of irreversible destruction	20%	2,4%
	- Disturbed by human action	68%	
	- Still robust and regenerating	12%	
B5. In your opinion, do some species like dolphins, whales, sharks, turtles deserve :	- Special rights	33%	1,7%
	- Some interest	47%	
	- No special consideration	20%	

## C : The Problems in Fisheries and their Causes

Difficulties in fisheries have many different causes. Among the following propositions, please indicate to what extent you consider them as “not a problem” (1), “a minor problem” (2), “a serious problem” (3) or “a very serious problem” (4). (Leave blank if you don't have any opinion).

<b>C1 : The sources of marine ecosystems degradation :</b>	<b>n-a</b>	<b>Not a problem</b>	<b>Minor</b>	<b>Serious</b>	<b>Big problem</b>
Urban and industrial pollution	4%	7%	15%	41%	37%
Massive tourism development	7%	35%	38%	19%	8%
Damaging fishing practices of some fishermen	4%	5%	18%	40%	37%
Climatic changes	8%	17%	33%	33%	17%
The spread of aquaculture	8%	32%	30%	23%	14%
<b>C2. The sources of fish stock depletion :</b>	<b>n-a</b>	<b>Not a problem</b>	<b>Minor</b>	<b>Serious</b>	<b>Big problem</b>
Technological progress	5%	14%	26%	39%	21%
Selfish attitudes of fishermen	5%	11%	26%	40%	22%
Insufficient knowledge among fishermen	8%	27%	32%	28%	12%
Lack of Knowledge among scientists	7%	11%	24%	40%	25%
Insufficient control and enforcement	5%	14%	23%	31%	31%
Too many fishermen	5%	35%	28%	20%	17%
<b>C3. The causes of the fishing industry difficulties :</b>	<b>n-a</b>	<b>Not a problem</b>	<b>Minor</b>	<b>Serious</b>	<b>Big problem</b>
Poor organisation of marketing	7%	17%	25%	34%	23%
Fishermen are not sufficiently business minded	7%	22%	35%	30%	13%
Lack of concern for the quality of fish	7%	28%	30%	29%	13%
Lack of training and education	9%	27%	32%	27%	14%
Too many regulations and taxes	4%	5%	14%	30%	51%
The low return from fishing	5%	6%	15%	37%	42%
<b>C4. The main cause of non-cooperation or poor compliance among some fishermen:</b>	<b>n-a</b>	<b>Not a problem</b>	<b>Minor</b>	<b>Serious</b>	<b>Big problem</b>
Too many loans to pay back	5%	11%	19%	39%	31%
Individualism of fishermen	7%	13%	30%	37%	19%
Unfairness of control	6%	10%	18%	36%	36%
Low risk of being caught	9%	24%	29%	27%	20%
<b>C5. The sources of problems in fishing communities :</b>	<b>n-a</b>	<b>Not a problem</b>	<b>Minor</b>	<b>Serious</b>	<b>Big problem</b>
Difficulty to recruit young people to fishing	3%	6%	9%	33%	51%
Disappearance of local fishing culture	5%	8%	15%	43%	34%
Disappearance of solidarity among fishermen	5%	13%	24%	39%	24%
Decrease in the pride of being a fisherman	4%	23%	23%	28%	25%

## D: How to Manage Fisheries or Protect the Sea

Various measures can be implemented to manage fisheries or to protect the sea. For you, are the following measures “very good”(1), “good” (2), “bad” (3) or “very bad” (4). (Leave blank if you don't have any opinion).

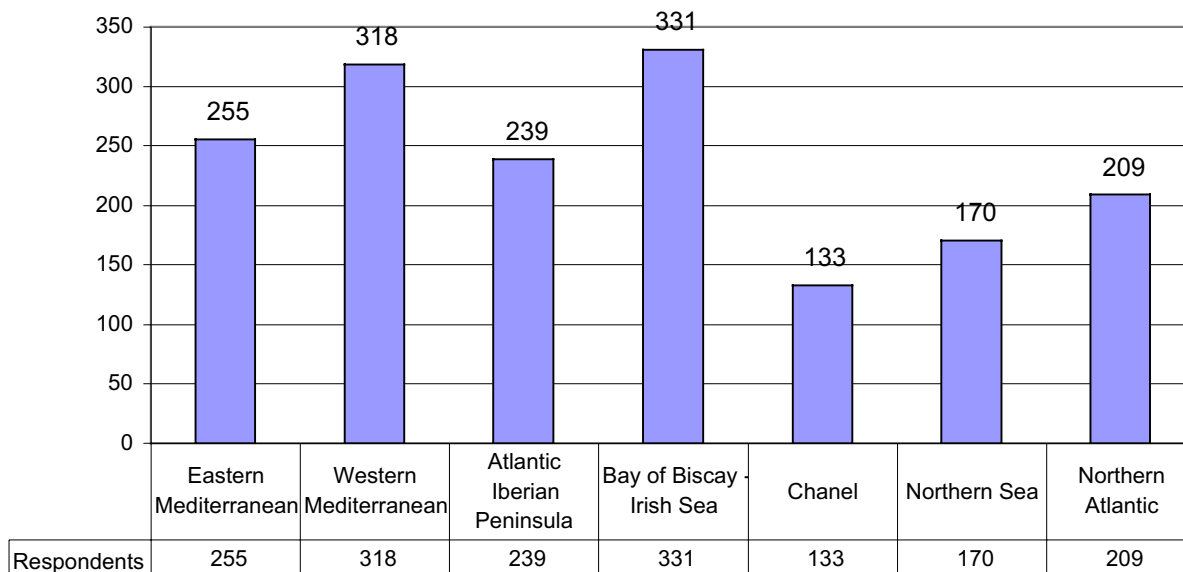
<b>D1. How do you regard the following instruments ?</b>	<b>n-a</b>	<b>Very Good</b>	<b>Good</b>	<b>Bad</b>	<b>Very Bad</b>
TACs and quotas	14%	15%	42%	28%	15%
Licences and fishing permits	8%	17%	46%	23%	14%
Technical measures (mesh size, length of net, engine power, etc.)	4%	25%	48%	16%	11%
Fishing time (seasons, days at sea, etc...)	7%	23%	39%	21%	17%
Restricted access to fishing areas (closed areas, limited access)	8%	23%	39%	23%	15%
Access fees, levies or taxes	14%	3%	13%	36%	48%
<b>D2. How do you perceive the trading of fishing rights (ITQs, tradable licences or days at sea, ...) :</b>	<b>n-a</b>	<b>Very Good</b>	<b>Good</b>	<b>Bad</b>	<b>Very Bad</b>
In terms of economic efficiency	19%	13%	34%	29%	25%
In terms of moral acceptability	22%	7%	29%	32%	32%
<b>D3. What are the best ways to protect marine Ecosystems?</b>	<b>n-a</b>	<b>Very Good</b>	<b>Good</b>	<b>Bad</b>	<b>Very Bad</b>
Ban harmful gears only	5%	51%	34%	10%	6%
Set up marine parks or reserves with restrictions on fishing	8%	23%	45%	22%	11%
Scientific management of ecosystems	9%	24%	50%	17%	9%
Increase ecological education and awareness	8%	36%	54%	6%	4%
<b>D4. What are the best ways to protect fish species ?</b>	<b>n-a</b>	<b>Very Good</b>	<b>Good</b>	<b>Bad</b>	<b>Very Bad</b>
Leave them under the responsibility of local fishermen	5%	24%	35%	27%	14%
Leave the young fish of commercial species in the sea	5%	57%	33%	8%	2%
Ban fishing of species important for the ecosystem	10%	32%	39%	23%	6%
Declare a total moratorium when there is a risk of extinction	7%	43%	37%	15%	5%
<b>D5. What is the best thing to do when we are not sure About the risks or consequences ?</b>	<b>n-a</b>	<b>Very Good</b>	<b>Good</b>	<b>Bad</b>	<b>Very Bad</b>
Continue and ignore the risks	7%	1%	4%	45%	49%
Continue and do more research at the same time	4%	24%	58%	14%	3%
Stop until we know more	9%	14%	36%	34%	16%

## E: Fishermen, fishing communities and fisheries management

Management requires that organisations are set up and decisions taken and implemented. How do you see the importance of the following. Please, tick « very important » (1), « important » (2) , « less important » (3) or « not important » (4). (Leave blank if you don't have any opinion).

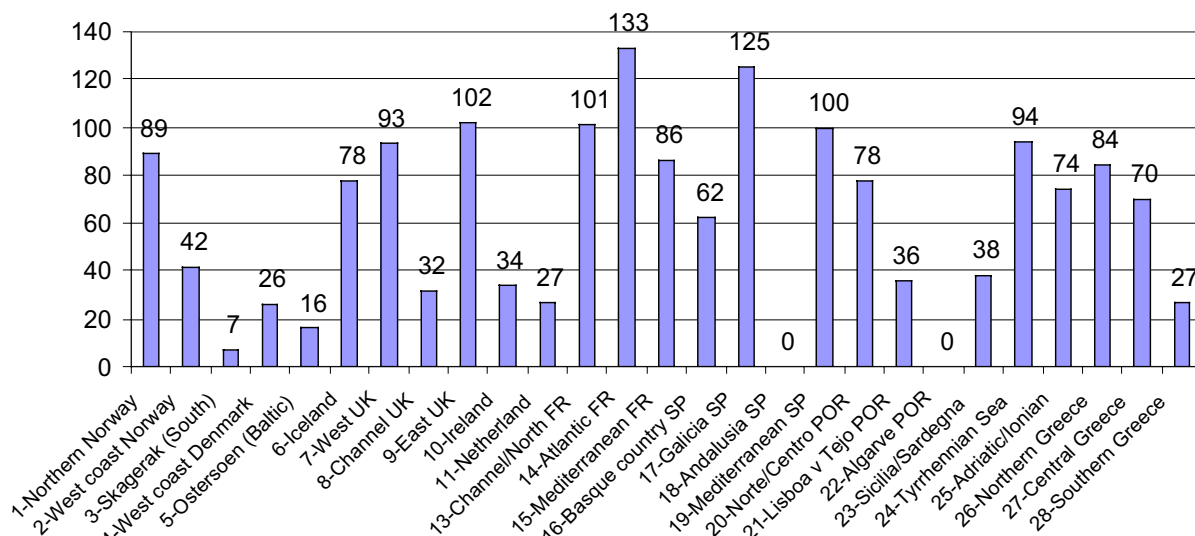
<b>E1. To influence the management of marine resources, Fishermen should have :</b>	<b>n-a</b>	<b>Very important</b>	<b>Important</b>	<b>Less important</b>	<b>Not important</b>
Organisations including all fishermen	4%	61%	31%	6%	3%
Organisations by type of gear used	5%	37%	41%	16%	6%
Organisations by type of species targeted	9%	21%	36%	28%	14%
Representation on committees making decisions	5%	65%	27%	4%	4%
Strong alliances with political parties	6%	20%	20%	21%	39%
<b>E2. What kind of support is important ?</b>	<b>n-a</b>	<b>Very important</b>	<b>Important</b>	<b>Less important</b>	<b>Not important</b>
Financial support to fishermen organisations	4%	46%	36%	11%	7%
Public subsidies to the fishing industry	5%	40%	35%	15%	10%
Education and training for fishermen and fish-workers	4%	49%	40%	8%	4%
Support from the public	5%	43%	38%	15%	5%
<b>E3. What kind of solidarity is important for fishermen?</b>	<b>n-a</b>	<b>Very important</b>	<b>Important</b>	<b>Less important</b>	<b>Not important</b>
Solidarity with the local community	5%	49%	40%	10%	2%
Solidarity with other fishermen	3%	63%	33%	3%	0%
Solidarity within the fishing industry	4%	59%	33%	7%	1%
<b>E4. Is it important for fishermen to solve the following Problems among themselves ?</b>	<b>n-a</b>	<b>Very important</b>	<b>Important</b>	<b>Less important</b>	<b>Not important</b>
Fleet over-capacity	7%	44%	38%	11%	7%
Monitoring and enforcement of regulations	5%	48%	40%	8%	5%
Imbalance between catches and market opportunities	8%	48%	42%	8%	2%
Gear conflict on the fishing grounds	5%	47%	37%	11%	5%
Catching of juvenile fish	5%	61%	29%	5%	4%
Disturbing the balance of ecosystems	9%	44%	41%	11%	4%
<b>E5. Which of the following groups is important in The management of fisheries ?</b>	<b>n-a</b>	<b>Very important</b>	<b>Important</b>	<b>Less important</b>	<b>Not important</b>
Environmental NGOs	9%	12%	35%	32%	21%
Fishermen's organisations	3%	63%	33%	3%	1%
Politicians and administrations	7%	19%	33%	28%	20%
Fishing communities	5%	47%	42%	9%	2%
Scientists	4%	33%	47%	14%	6%

### Respondents per Maritime Fronts



%	15%	19%	14%	21%	8%	10%	13%
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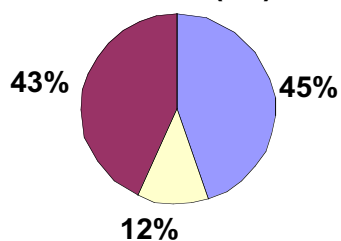
### Respondents per regions



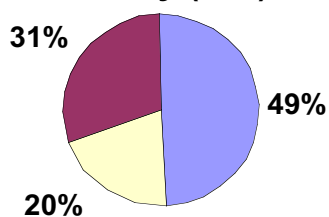


	More than 16 m
	12 m to 16 m
	Less than 12 m

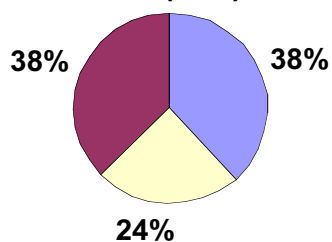
**Iceland (77)**



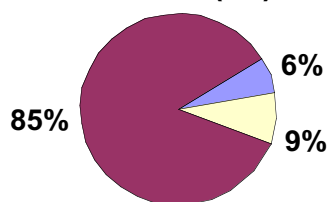
**Norway (138)**



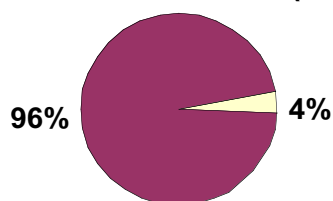
**UK (227)**



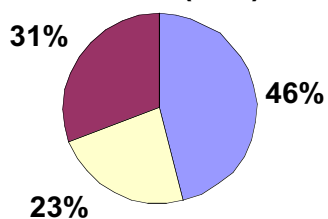
**Ireland (35)**



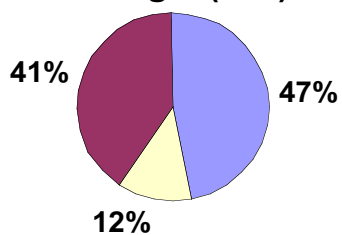
**The Netherlands (27)**



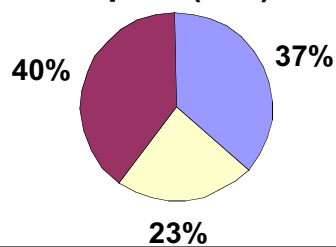
**France (320)**



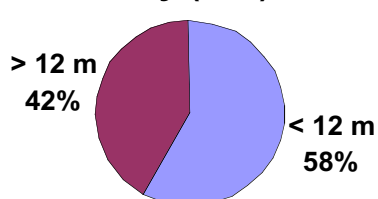
**Portugal (114)**



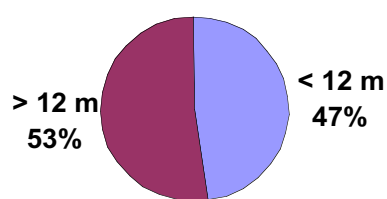
**Spain (287)**



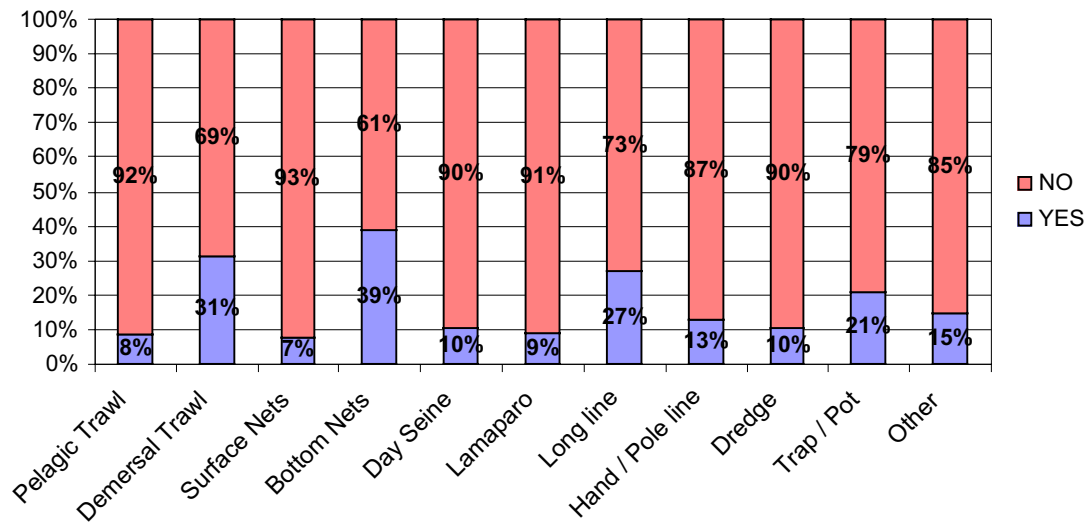
**Italy (206)**



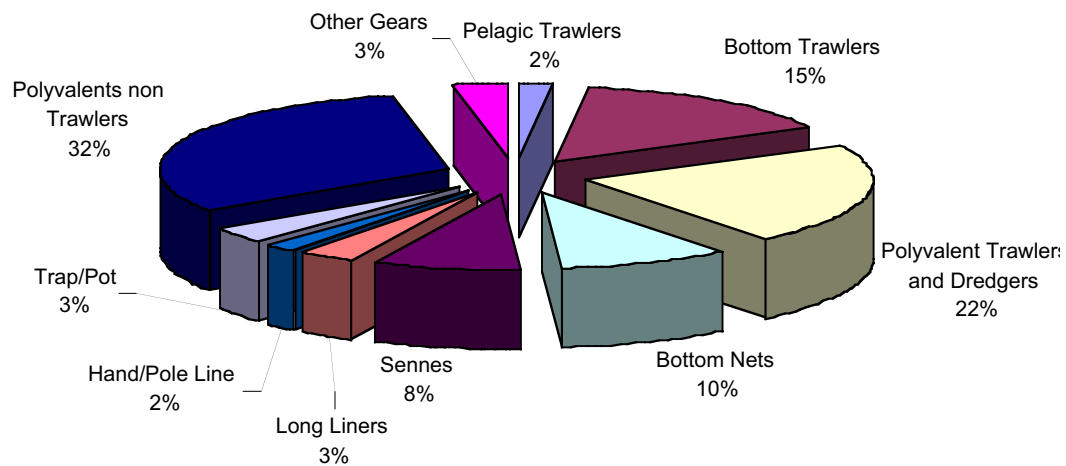
**Greece (181)**



### Gears used among respondents



### A priori technical typology



## Respondents' Fleet technical typology

