

MariFish D1.4a

Drivers for Fisheries Management Report



Drivers for Fisheries Management

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Drivers for Fishery Management

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Executive Summary

1. A survey of fishery managers was carried out using a questionnaire to try to identify the main drivers and priorities in the sustainable management of fisheries in Europe. Fifteen countries participated in the survey producing a total of 23 responses to the survey. The survey considered the importance of fishing, the drivers for management, management measures, expert advice and understanding of science.
2. Respondents were asked to rank their level of agreement with a series of 48 questions on a scale of 1-7. For most questions, the responses covered the whole scale, though typically there were identifiable preferences (modes). In a few cases opinion was clearly divided.
3. Principal Component Analysis (PCA) was used to try to separate the countries into groups with similar responses. For each section of the questionnaire two groups were identified but these differed for each section indicating no universal commonality.
4. Twelve of the fifteen countries did not rate fishing as a high priority economically or politically. The remaining three considered fishing to be important in both aspects.
5. About half the countries rated environmental concerns as the most important drivers while the remainder gave higher priority to socio-economic factors especially stability, and in contrast to the first group, considered the fishing industry to have an important influence on policy.
6. The ecosystem approach was regarded as important but comments on the responses indicated that respondents felt the concept was poorly defined.
7. While there was strong support for economics to be more prominent in both advice and management, the responses to two of the questions indicated that respondents considered biological advice to be more important and more politically acceptable than economic measures.
8. Fleet capacity was considered to be too large and there was support for decommissioning. Eight of the 15 countries rated effort limitation as a high priority.
9. There was a mixed response to technical measures and closed areas in particular. Closed areas were seen as useful but the perceived value of No-Take Zones was mixed.
10. Understanding of scientific advice by the industry and the public was seen as poor, and in the case of fishermen was seen as an impediment to good management. Stronger collaboration between the fishing industry and scientists was the most strongly supported statement.

Introduction

One of the tasks in work-package 1 is:

Using workshop(s), written questionnaires and other gathering methods establish with fishery managers what they consider are the key issues involved in developing strategies for sustainable fisheries.

At the initial meeting of the network a break-out group considered how this task might be addressed. It was agreed that a workshop be held and that in preparation for the meeting data would be gathered using a questionnaire. It was also agreed that the questionnaire would provide an opportunity for respondents to provide free form answers.

It was decided that the questionnaire should be aimed at identifying the principal high level policy drivers for fishery management such as:

- The CFP
- Ecosystem Approach
- Precautionary Approach
- Rio Convention on biodiversity
- WSSD commitments to sustainable fisheries
- Profitable fishing industries
- Social policy, e.g. supporting remote communities, employment
- Environmental protection
- Security of food supply

The workshop should also list any existing policy documents that lay down the strategy for national fishery policy.

In addition the Group felt that the questionnaire should seek information on managers' preferences for instruments such as TACs, closed areas, effort control and technical measures. It should also try to elicit how managers would prefer to deal with uncertainties in the science and the management systems e.g. the use of harvest control rules and, multi-annual approaches.

Following the January 2006 meeting, FRS, the lead organisation for the task, developed a questionnaire that was sent out to all participants. Following the receipt of responses from most countries a workshop was held in London in May 2006 to review a preliminary analysis of the questionnaire results. The workshop generally supported the initial results but made a number of suggestions about the analysis.

Following the workshop questionnaires were received from all the remaining countries. Taking into account the comments at the workshop, a more comprehensive analysis was undertaken on the full data set as reported below.

Methods

Apart from the first section on the profile of the respondents, all the other sections of the questionnaire were designed in a way in which the respondent was invited to agree/disagree with a statement on a scale of 1 to 7 (see Annex 1). A seven point scale was chosen to get a spread for the strength of agreement/disagreement and hence get a greater insight into the degree of support for each statement. Where more than one response was received from a country, a mean was taken and used as the sample for that country. This meant that equal weight was given to all each country in the subsequent analysis.

In the initial analysis, average scores for each statement were calculated and used to rank the statements in order of support. This assumes a degree of homogeneity in the sample and comments during the workshop suggested some kind of stratification might be preferable to reduce the variance of the results and achieve more precise conclusions. The main purpose of MARIFISH is to try to find common ground among the participants in terms of the science they might fund collaboratively. This means that it is desirable to avoid excessive stratification since this loses any identification of common ground. At the extreme it would mean treating each country as a separate stratum. On the other hand, if responses are highly variable, simply averaging over the whole sample risks reducing all responses to the average score (4 in this case) which would mean no preference for any of the statements.

There are a number of ways of choosing a stratification system. One possibility is to group countries by geographical area in the hope that their location aligns with shared priorities. However, this approach presents problems, if, for example, regional seas (Baltic, Mediterranean, North Sea) are used, since some countries have coastlines in more than one sea. It might be possible to group countries by the importance they attach to fishing (section 3 of the questionnaire). This presupposes that subsequent responses are coloured by importance only and without testing the hypothesis, it is difficult to have confidence in such a grouping. In order to avoid these difficulties it was decided to use a post stratification procedure based on the responses by trying to group countries on the basis of the observed similarity of response. This was done by performing a principal components analysis (PCA) on the responses to each section of the questionnaire where each statement is treated as a 'case' and each country a measurement of the 'response' to the statement. Groups with similar response were identified by plotting the loadings of first and second principal components (that generally account for the largest proportion of the sample variance). These were used to separate the countries into two groups for each section of the survey. Two groups were chosen as a compromise between lumping all samples together and high dis-aggregation that would result in only a few or single countries in a group. With only 15 countries, dividing the sample into more than two groups runs a high risk of very small groups that are unrepresentative.

On the basis of the groups identified through the PCA, means were then calculated across the countries in the group for each statement. These were then used to rank the statements in order of their mean score. This gives an indication of their importance to managers.

Results

A total of 23 responses were received from 15 countries. The number of forms returned per country is shown in the following table.

| Country | Abbreviation | Number of responses |
|-------------|--------------|---------------------|
| Germany | Ger | 2 |
| Greece | Hel | 2 |
| Netherlands | Ned | 2 |
| Norway | Nor | 1 |
| Poland | Pol | 1 |
| UK | UK | 2 |
| Spain | Esp | 2 |
| Iceland | Ice | 2 |
| Sweden | Swe | 2 |
| France | Fra | 1 |
| Denmark | Den | 1 |
| Portugal | Por | 1 |
| Cyprus | Cyp | 1 |
| Ireland | Ire | 2 |
| Belgium | Bel | 1 |

Profile of Respondents

Respondents were asked to identify their principal responsibilities in fisheries and the length of time in post. The majority of respondents were ‘fishery managers’ and ‘policy advisors’, though some classed themselves as scientists. Very few were science programme funders (Figure 1a). While the range of experience was variable, about half the respondents had been in post for more than ten years (Figure 1b).

Frequency Distributions

The frequency distributions for the response to each statement are shown in figures are shown in Figures 2 to 6. Typically there is an identifiable preference expressed for each statement. However, in a number of cases opinion is clearly divided (e.g. statement 3.4, Figure 2), or there is simply no tendency (e.g. statement 3.7, Figure 2). The fact that not all distributions have a mode, supports the need to stratify samples if possible to account for the variance.

Importance of Fishing

Questions in this section were intended to discover how important fishing is in each of the countries as perceived by fishery managers. Table 1 shows the PCA component loadings and Figure 7 the plotted values. The countries clearly separate into two distinct groups mainly on the sign of the loadings of the first principal component (PC). It could be argued that Belgium in this plot is unique and should be treated as a separate group.

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However, it has been included in the main group since it shares a large loading on the first PC with others in the group. It can be seen that the loadings for the first PC are large and positive for the main group. These values can be interpreted as a correlation with a common factor and therefore indicate a high degree of covariance between these countries.

Using the groups derived from the PCA, means were calculated for each group and these are shown ranked in Table 2

Group 3a (Iceland, Norway and Spain) agreed that fishing was important culturally, economically and was treated as a priority by government. Group 3b, saw fishing as only important to local communities, unimportant economically and not treated as a priority by government. International relations with other countries were seen as important in both groups. There was no clear perception of the acceptability of environmental damage across countries (Fig 2, 3.7) with similar numbers of responses to scores between 2 and 6. Opinion was neither polarised or consistently in one direction.

Overall, Group 3b was the more representative of the typical response by virtue of its size (12 countries).

In written comments, some respondents commented on the influence of environmental and nature conservation policy as having an important effect on fisheries policy. Some respondents commented that the present importance of fishing was partly the result of the historical importance fishing both economically and in its contribution to food production, implying that at present the true economic/food value of the industry is much lower than its political profile merits. The food processing sector was also mentioned as important, especially where it played a large part in the economy.

Drivers for management

This section is concerned with the external pressures on managers and management agencies that are likely to have an influence on the way fisheries are managed. Table 1 shows the PCA component loadings and Figure 8 the plotted values. As in the previous section the countries clearly separate into two groups mainly on the sign of the loadings of the first principal component (PC). In this case the size of the groups is quite similar. Group 4a typically has a negative loading on the first PC and a positive loading on the second. Group 4b has a positive 1st PC loading and a mixed loading on the second.

Using the groups derived from the PCA, means were calculated for each group and these are shown ranked in Table 3. The most obvious difference between the groups is that Group 4a gave higher scores to socio-economic factors than Group 4b which gave higher scores to environmental factors. Group 4a, for example saw stability, adverse stakeholder reaction, fish supply and social policy as the main drivers. Group 4b saw the Precautionary Approach, pressure from environmental groups, equal access, regional management, environmental concerns and the Ecosystem Approach as the main drivers. In fact there is a tendency for priorities in Group 4a to be the reverse of those in Group 4b. This does need some care in interpretation as the actual scores show that although

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers stability is ranked low in Group 4b, it nevertheless has a positive score (5) and is only a little less than the Group 4a score of 5.36.

There was some agreement between the groups. Both, for example saw climate change as important but felt international treaties such as the Johannesburg summit on sustainable development to be unimportant.

None of the comments from respondents referred to economic issues as drivers for management. However, public opinion was cited as a driver, and in particular, consumer choice in buying from sustainable sources. A number of emerging EU and national directives/strategies were also mentioned.

Management Measures

Questions in this section were intended to identify the types of management measure that were favoured by respondents. Table 1 shows the PCA component loadings and Figure 9 the plotted values. Unlike the previous section the countries do not easily separate into two groups. The separation has been made mainly on the sign of the second PC loadings. The size of the groups is quite similar but because the separation is based on the second PC which accounts for less of the sample variance, it would not be expected that there are large differences between them. One country (Denmark) has been omitted due to its large distance from all other countries.

Using the groups derived from the PCA, means were calculated for each group and these are shown ranked in Table 4.

Both groups agreed that the size of the fishing fleets was wrong, that the correct economic incentives were needed, that closed areas were useful and that decommissioning should be a priority. They both disagreed with the proposition that the fishing industry should bear the full costs of fishing and that economic incentives were more acceptable politically than biologically based regulations. Neither group gave much support for the success of technical measures.

The groups did differ on a number of issues. In contrast to Group 5b, Group 5a felt that quotas were more important for conservation than sharing the resource. They also attached much more weight to management plans. However, Group 5a did not support no-take-zones as useful for fishery management, unlike Group 5b. Group 5b also gave positive support for multi-annual catch limits and effort control which were only weakly supported in Group 5a. The response to effort limitation is perhaps confusing as 8 of the 15 countries scored this statement as '6' (Figure 4, 5.12) which suggests that average scores may not always be appropriate.

Respondents noted that the questionnaire did not have any questions relating to discarding, enforcement and protecting non-target species. This was an omission and any conclusions need to bear this in mind.

Expert Advice

Table 1 shows the PCA component loadings and Figure 9 the plotted values. Like the previous section the countries separate into two groups mainly on the sign of the second PC loadings and it would not be expected that there are large difference between them. One country (Sweden) has been omitted due to its large distance from all other countries.

Using the groups derived from the PCA, means were calculated for each group and these are shown ranked in Table 5.

In both Groups there was strong support for closer collaboration between fishermen and scientists. Ecosystem advice was also believed to be likely to improve management. Not only was scientific advice seen as having a large influence on management, but uncertainties in the science were considered to undermine good management especially by Group 6a. While ICES advice was respected, the level of support was only moderate. There was also only moderate support for more economic advice and, perhaps surprisingly, biological advice was seen as more important than economic advice. The strongest difference between the groups was the support by Group6a that scientists should have a bigger role in determining policy strongly disagreed with by Group 6b.

Public Understanding

As there were few questions in this section there was no attempt to group the results. The ranked means are given in Table 6. There was a strong belief that a better understanding of the science by fishermen would improve the success of fishery management. It was generally believed that the public has a poor understanding of the science and the issues affecting management. In response to question 7.1, some respondents qualified the response to indicate that managers do understand the science. There were also suggestions that scientific advice should be made clearer and more understandable.

Discussion

For the majority of the countries (11 out of 15) involved in the Marifish ERAnet, fishing is not regarded as a high priority economically or politically. There are of course exceptions to this, but typically, fishing is only of importance to local communities. Although there is a strong division of emphasis in relation to the importance of fishing, this is not carried through in the way countries responded to other questions. Using the PCA approach, there was no consistency in the composition of groups, but there was identifiable common ground in the responses of groups of countries.

Examining summaries of the national policy priorities and objectives (Annex 2) it is clear that many of the issues raised in the questionnaire reflect the interests of the countries. Broadly speaking these revolve around social, economic and environmental concerns and all essentially are looking for a profitable industry within a sustainable framework. The emphasis of these three factors differs and in terms of drivers with the main divergence of opinion apparently revolving around the priority given to environmental concerns over

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers socio-economic ones. Perhaps this is most obviously seen in relation to pressure from environmental groups (statement 4.6, Figure 3) and the Precautionary Approach (statement 4.12, Figure 3) which clearly show the division of opinion. Similarly, a socio-economic factor, the supply of fish (4.14, Figure 3) also strongly divided opinion. It is interesting to note that the group that attached higher priority to environmental concerns also gave low weight to the influence of the fishing industry. Environment groups sometimes complain that governments respond more to industry pressure rather than scientific advice. Despite this difference both groups saw the Ecosystem Approach as important, and in view of additional comments (see Annex 1, Drivers, reply 4) about the vagueness of the concept, this is perhaps an area where the ERAnet might collaborate. Regional management also received positive support in both groups.

In relation to management measures, there was strong general agreement that fleets were too large (strictly speaking they disagreed with the proposition that fleet size was right) and support for decommissioning. There was also support the other major input control, effort limitation in Group 2, and 8 out of 15 countries rated their agreement at 6 (Figure 3. Section 4 - Drivers. Frequency distribution of responses. Figure 4,5.12). For output controls (such as catch controls) and technical measures there was an unclear response. Multi-annual catch limits were seen as fairly positive but there was no clear view on the value of quotas. While closed areas were seen as useful in both groups, technical measures (of which closed areas are an example) were not seen as having been particularly successful. There was also a divergence of opinion about the value of no-take zones as fishery management tools as opposed to conservation tools.

The response to economic factors is also mixed. All strongly agreed that management could be improved by using the right economic incentives and thought economic instruments should be more widely used but thought that economic instruments were less acceptable politically than biologically based regulations.

Questions about advice sought to clarify the relative importance of biological and economic advice and the role of science in the management process. Clearly collaboration between scientists and the industry was seen as important as the understanding of science by fishermen was perceived to have an effect on the success of management (questions 6.1 and 7.2, Figure 4 and Figure 5). Interestingly respondents disagreed with the proposition that economic considerations are more important than biological factors which at face value seems rather counter-intuitive given that fishing is an economic activity. They did, however give support to the view that economic advice should play a larger role in management. This and the support given to the ecosystem based advice suggest that the development of advice needs to focus in these areas.

Conclusions

The analysis of the questionnaire does not reveal any very obvious areas of agreement amongst all countries but it is possible to identify groups of countries that have similar responses. Given that the majority of countries do not consider fishing of major importance it is perhaps not surprising to find that for many countries, environmental issues have become a strong driver in management. In fact the group of countries that gave most priority to environmental issues gave low priority to a profitable industry and

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers was not concerned about adverse stakeholder reaction (Table 3). This clearly points to a need to develop fishery management in an ecosystem context.

Economic drivers did sometimes get significant support but where economic instruments were concerned, there was a perception that they may be difficult to implement from a political perspective. This might explain why there was very little support for the view that the fishing industry should bear the costs of management, a view frequently proposed by economists.

There was also a clear interest in closed areas/no-take zones but the disparity of response suggests that there is a mixed understanding of the value and utility of these measures. Fishery scientists tend to view area restrictions as of limited value when addressing the core problem of over-exploitation, though they may have value in nature conservation or protecting certain vulnerable life stages of populations. It may be that more research on this topic might help to tease out the likely value of no-take zones as tools in fishery management as compared with nature conservation.

Most countries rated fishing as important to local communities and this perhaps points to where socio-economic research effort could be directed. The same group also rated international relations as an important factor (Table 2) which raises a particular challenge for governments that on the one hand have to negotiate the management of shared stocks with their partners, but on the other hand need to develop social policy to support local communities at national or regional level. This is very difficult to achieve successfully if fishery management is applied at a very broad scale with a centralised system. The dilemma would seem to be consistent with trying to develop regional management, which tended to receive high support at least from a large sub-group of countries.

Overall there are no major surprises emerging from this analysis with many of the drivers emerging as might be expected. What is clear, however, is that the relative importance of the different factors encompasses a wide spectrum of opinion and there are no universal truths.

Table 1. Loadings for first and second principal components.

| Country/Component | Section 3- Importance | | Section 4- Drivers | | Section 5- management | | Section 6- Advice | |
|----------------------------|--------------------------|--------|--------------------|--------|--------------------------|--------|----------------------|--------|
| | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 |
| GERMANY | 0.873 | 0.174 | 0.899 | 0.14 | 0.763 | -0.23 | 0.876 | 0.408 |
| GREECE | 0.36 | 0.06 | -0.068 | 0.444 | 0.033 | -0.9 | 0.816 | 0.116 |
| NETHERLA | 0.804 | 0.069 | 0.786 | 0.29 | 0.22 | 0.03 | 0.631 | -0.467 |
| NORWAY | -0.224 | 0.863 | 0.551 | -0.427 | 0.482 | 0.741 | 0.773 | -0.419 |
| POLAND | 0.818 | 0.111 | 0.125 | 0.857 | 0.481 | 0.031 | 0.718 | 0.132 |
| UK | 0.64 | 0.467 | 0.734 | -0.307 | 0.357 | 0.163 | 0.879 | -0.361 |
| SPAIN | -0.433 | 0.819 | -0.373 | 0.052 | 0.402 | -0.802 | 0.917 | 0.206 |
| ICELAND | -0.798 | 0.422 | -0.39 | -0.225 | 0.555 | 0.347 | 0.538 | 0.438 |
| SWEDEN | 0.919 | -0.027 | 0.33 | -0.164 | 0.81 | 0.11 | -0.38 | 0.256 |
| DENMARK | 0.987 | 0.134 | -0.423 | 0.567 | -0.375 | -0.016 | 0.912 | 0.048 |
| PORTUGAL | 0.601 | 0.603 | -0.594 | 0.602 | 0.667 | -0.547 | 0.902 | 0.219 |
| CYPRUS | 0.529 | 0.273 | 0.539 | 0.498 | 0.879 | 0.131 | 0.592 | 0.718 |
| IRELAND | 0.563 | 0.44 | 0.518 | 0.44 | 0.597 | -0.415 | 0.783 | 0.106 |
| BELGIUM | 0.472 | -0.762 | 0.537 | 0.263 | 0.032 | -0.124 | 0.714 | -0.626 |
| FRANCE | 0.754 | -0.312 | -0.195 | 0.13 | 0.694 | 0.44 | 0.466 | -0.519 |
| Percent variance explained | 47 | 21 | 27 | 17 | 30 | 19 | 55 | 15 |

Table 2. Section 3- Importance of fishing. Ranked statements

Group 3a

| Mean score | Number | Statement |
|-------------------|---------------|---|
| 6.50 | 3.4 | Fishing is important part of the culture of my country |
| 6.17 | 3.5 | The fishing industry in my country is important to the social fabric of remote communities |
| 6.00 | 3.2 | The fishing industry is crucial to the economy of my country |
| 5.67 | 3.6 | Fisheries policy in my country is influenced by international relations with other countries |
| 5.33 | 3.1 | Fishing in my country is treated as a high priority in government |
| 3.50 | 3.7 | A certain amount of environmental damage is acceptable in order to create a profitable fishing industry |
| 1.67 | 3.3 | In my country fishing is only important to the economy of local communities |

Group 3b

| Mean score | Number | Statement |
|-------------------|---------------|---|
| 5.71 | 3.3 | In my country fishing is only important to the economy of local communities |
| 5.33 | 3.6 | Fisheries policy in my country is influenced by international relations with other countries |
| 4.50 | 3.4 | Fishing is important part of the culture of my country |
| 4.42 | 3.5 | The fishing industry in my country is important to the social fabric of remote communities |
| 4.33 | 3.7 | A certain amount of environmental damage is acceptable in order to create a profitable fishing industry |
| 3.42 | 3.1 | Fishing in my country is treated as a high priority in government |
| 1.88 | 3.2 | The fishing industry is crucial to the economy of my country |

Table 3. Drivers. Ranked statements

Group 4a

| Mean score | Number | Statement |
|------------|--------|---|
| 5.36 | 4.11 | Stability in the fishing industry should be given higher priority |
| 5.29 | 4.10 | Adverse stakeholder reaction to management plays a role in determining fishery policy in my country |
| 5.29 | 4.14 | The supply of fish from our industry as a source of food is a major consideration in our country |
| 5.07 | 4.9 | Social policy is plays an important part in my country's fishing policy |
| 5.00 | 4.15 | The Ecosystem Approach should be at the heart of fishery policy |
| 4.79 | 4.2 | An efficient and profitable fishing industry is a high priority in my country |
| 4.71 | 4.7 | In my country the fishing industry has a large influence in fishery management |
| 4.71 | 4.16 | Regional management of fisheries would be an important step forward |
| 4.64 | 4.3 | It is important in my country to ensure an equitable access to shared stocks |
| 4.64 | 4.13 | Climate change is likely to affect the management of fisheries |
| 4.36 | 4.1 | Fisheries policy in my country is driven entirely by EU treaties and regulations |
| 4.07 | 4.17 | Wider public opinion has a large influence on fisheries policy in my country |
| 4.00 | 4.8 | It is important to protect the environment even if this reduces the profitability of the fishing industry |
| 3.79 | 4.4 | Environmental concerns related by fishing are an essential part of fishery policy in my country |
| 3.64 | 4.12 | The Precautionary Approach is of major importance in fishery policy in my country |
| 3.14 | 4.6 | Pressure from environmental groups has an influence on the management of fisheries in my country |
| 2.64 | 4.5 | International treaties, such as the WSSD in Johannesburg are more important in determining fisheries management in my country than domestic pressures |

Group 4b

| Mean score | Number | Statement |
|------------|--------|---|
| 5.75 | 4.12 | The Precautionary Approach is of major importance in fishery policy in my country |
| 5.56 | 4.6 | Pressure from environmental groups has an influence on the management of fisheries in my country |
| 5.38 | 4.3 | It is important in my country to ensure an equitable access to shared stocks |
| 5.38 | 4.16 | Regional management of fisheries would be an important step forward |
| 5.31 | 4.4 | Environmental concerns related by fishing are an essential part of fishery policy in my country |
| 5.31 | 4.8 | It is important to protect the environment even if this reduces the profitability of the fishing industry |
| 5.31 | 4.15 | The Ecosystem Approach should be at the heart of fishery policy |
| 5.13 | 4.13 | Climate change is likely to affect the management of fisheries |
| 5.06 | 4.1 | Fisheries policy in my country is driven entirely by EU treaties and regulations |
| 5.00 | 4.11 | Stability in the fishing industry should be given higher priority |
| 4.50 | 4.17 | Wider public opinion has a large influence on fisheries policy in my country |
| 4.25 | 4.7 | In my country the fishing industry has a large influence in fishery management |
| 4.06 | 4.10 | Adverse stakeholder reaction to management plays a role in determining fishery policy in my country |
| 3.88 | 4.2 | An efficient and profitable fishing industry is a high priority in my country |
| 3.81 | 4.9 | Social policy is plays an important part in my country's fishing policy |
| 3.69 | 4.5 | International treaties, such as the WSSD in Johannesburg are more important in determining fisheries management in my country than domestic pressures |
| 2.50 | 4.14 | The supply of fish from our industry as a source of food is a major consideration in our country |

Table 4. Management. Ranked statements

Group 5a

| Mean score | Number | Statement |
|------------|--------|---|
| 6.44 | 5.2 | The size of fishing fleets in Europe is wrong |
| 5.94 | 5.9 | Management plans are needed for all European fisheries |
| 5.50 | 5.4 | Fishery management would be improved if the correct economic incentives were created |
| 5.38 | 5.3 | Closed areas and other area restrictions are useful in managing fisheries |
| 5.19 | 5.1 | Fishing quotas are more important for conserving stocks than for sharing the resource |
| 5.13 | 5.10 | Decommissioning of fishing vessels should be a top priority to reduce over-capacity in Europe |
| 4.93 | 5.11 | Economic instruments should be more widely used to manage the fishing industry |
| 4.69 | 5.6 | Technical measures (e.g. mesh size) have been successful in managing fisheries |
| 4.50 | 5.7 | Multi-annual catch limits would improve fishery management |
| 4.19 | 5.12 | Limiting fishing effort (e.g. days-at-sea) is a good way to manage fisheries |
| 3.86 | 5.13 | Economic instruments are more acceptable politically than biologically based regulations |
| 3.50 | 5.5 | No take zones are better for fishery management than nature conservation |
| 3.19 | 5.8 | The fishing industry should bear the full costs of the management process |

Group 5b

| Mean score | Number | Statement |
|------------|--------|---|
| 6.08 | 5.3 | Closed areas and other area restrictions are useful in managing fisheries |
| 5.83 | 5.2 | The size of fishing fleets in Europe is wrong |
| 5.83 | 5.4 | Fishery management would be improved if the correct economic incentives were created |
| 5.75 | 5.5 | No take zones are better for fishery management than nature conservation |
| 5.58 | 5.7 | Multi-annual catch limits would improve fishery management |
| 5.58 | 5.10 | Decommissioning of fishing vessels should be a top priority to reduce over-capacity in Europe |
| 5.42 | 5.12 | Limiting fishing effort (e.g. days-at-sea) is a good way to manage fisheries |
| 5.17 | 5.11 | Economic instruments should be more widely used to manage the fishing industry |
| 4.58 | 5.9 | Management plans are needed for all European fisheries |
| 4.42 | 5.6 | Technical measures (e.g. mesh size) have been successful in managing fisheries |
| 3.83 | 5.13 | Economic instruments are more acceptable politically than biologically based regulations |
| 3.50 | 5.1 | Fishing quotas are more important for conserving stocks than for sharing the resource |
| 3.42 | 5.8 | The fishing industry should bear the full costs of the management process |

Table 5. Advice. Ranked statements

Group 6a

| Mean score | Number | Statement |
|------------|--------|---|
| 6.67 | 6.2 | Fisheries management requires collaboration between scientists and fishermen |
| 6.00 | 6.6 | Uncertainties in the science undermines good fishery management |
| 5.61 | 6.8 | Ecosystem based advice will effect the way fisheries are managed |
| 5.39 | 6.5 | Scientists should have a bigger role in determining fisheries policy |
| 5.17 | 6.1 | Scientific advice has a large influence on the management of fisheries |
| 5.00 | 6.4 | Economic advice should play a larger role in influencing fishery policy |
| 4.94 | 6.3 | ICES advice is respected by managers as reliable and relevant |
| 2.89 | 6.7 | Economic considerations are more important than biological factors in managing the fishing industry |

Group 6b

| Mean score | Number | Statement |
|------------|--------|---|
| 6.33 | 6.2 | Fisheries management requires collaboration between scientists and fishermen |
| 5.67 | 6.1 | Scientific advice has a large influence on the management of fisheries |
| 5.33 | 6.8 | Ecosystem based advice will effect the way fisheries are managed |
| 4.92 | 6.3 | ICES advice is respected by managers as reliable and relevant |
| 4.75 | 6.4 | Economic advice should play a larger role in influencing fishery policy |
| 4.67 | 6.6 | Uncertainties in the science undermines good fishery management |
| 3.75 | 6.7 | Economic considerations are more important than biological factors in managing the fishing industry |
| 2.83 | 6.5 | Scientists should have a bigger role in determining fisheries policy |

Table 6. Understanding. Ranked statements

| Mean score | Number | Statement |
|------------|--------|--|
| 5.93 | 7.2 | Understanding of science by fishermen has an effect on the success of fishery management |
| 3.23 | 7.1 | Scientific advice is widely understood by managers and the public |
| 2.70 | 7.3 | The public have a good understanding of the issues affecting fishery management |

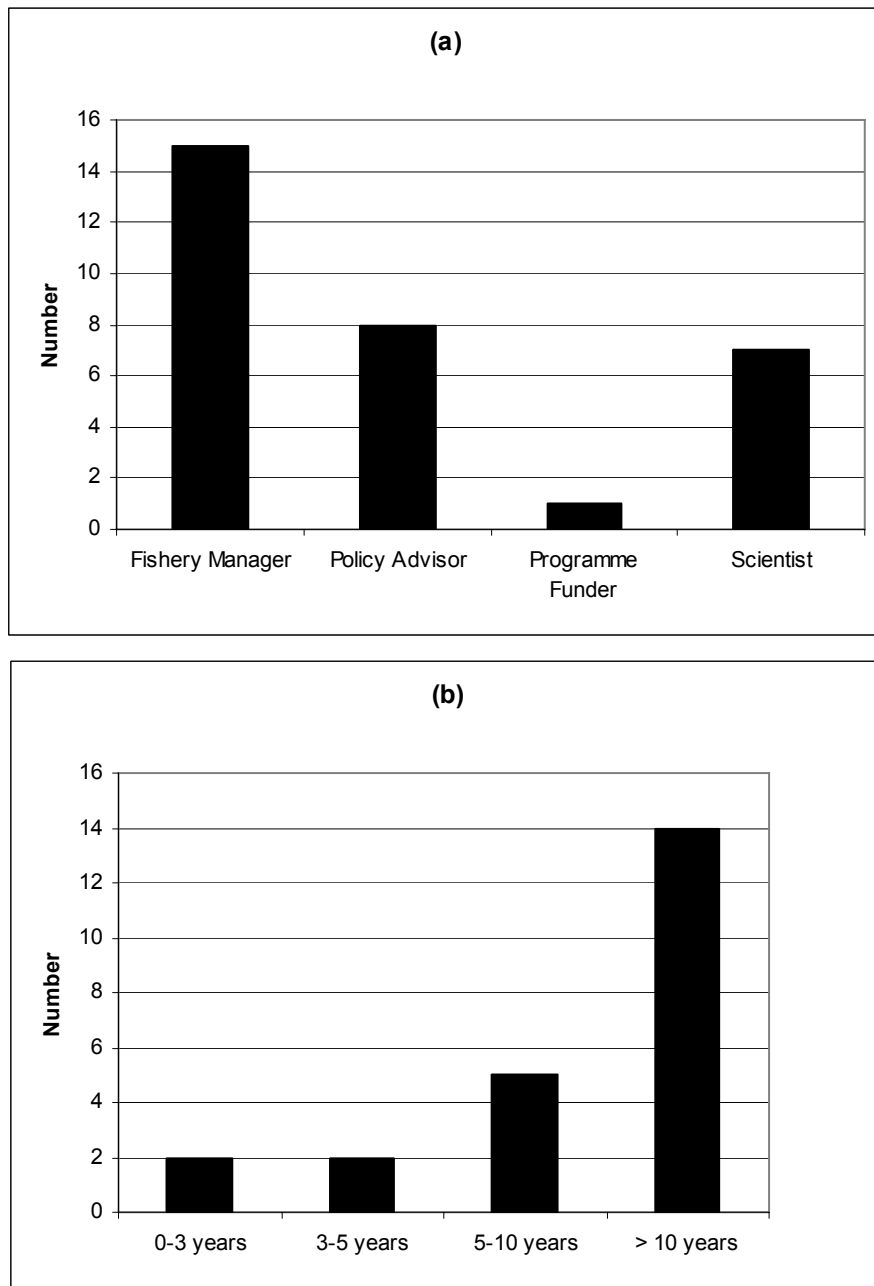


Figure 1. Profile of respondents to questionnaire.

Figure 2. Section 3 - Importance of Fishing. Frequency distribution of responses

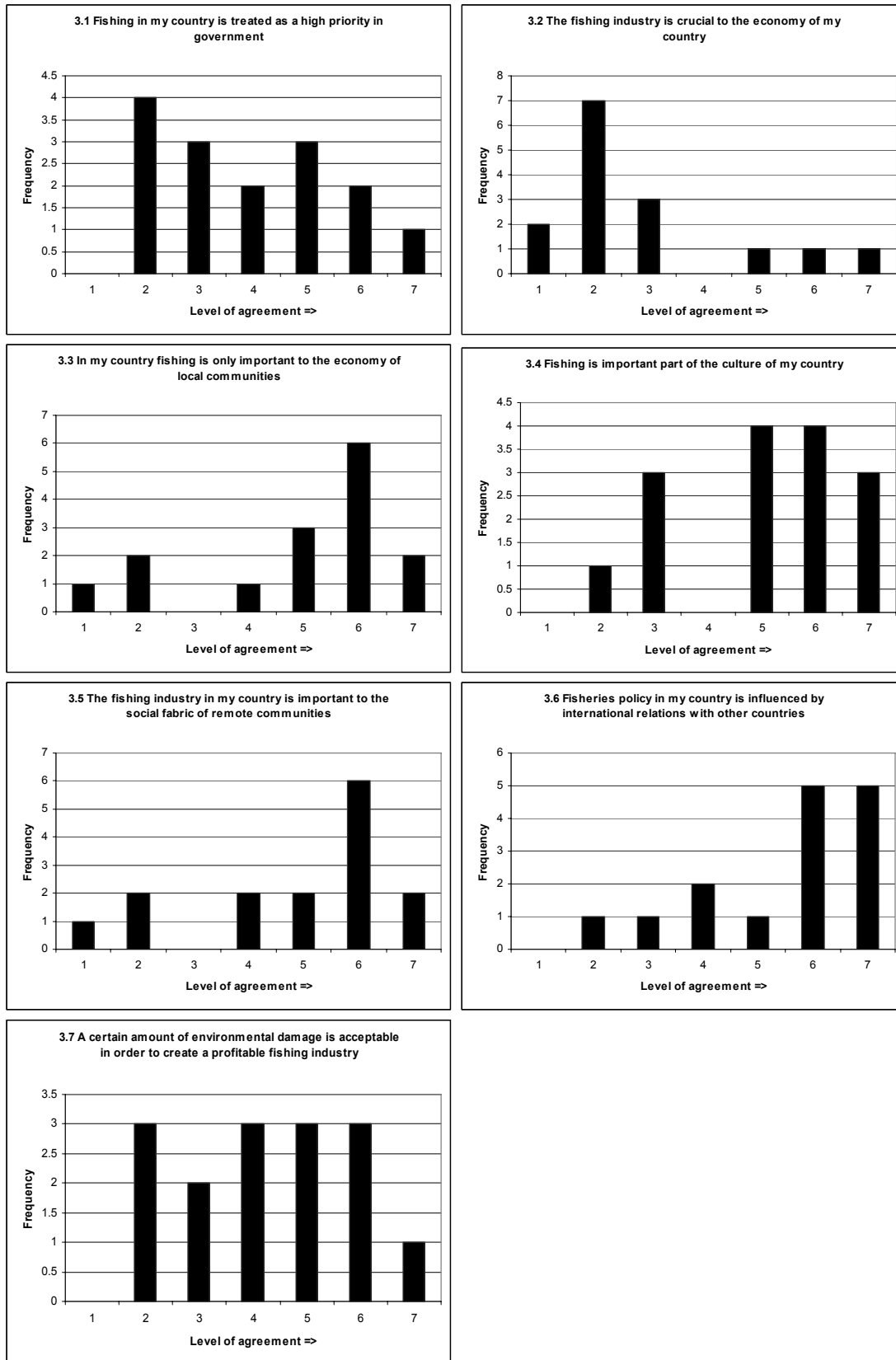


Figure 3. Section 4 - Drivers. Frequency distribution of responses.

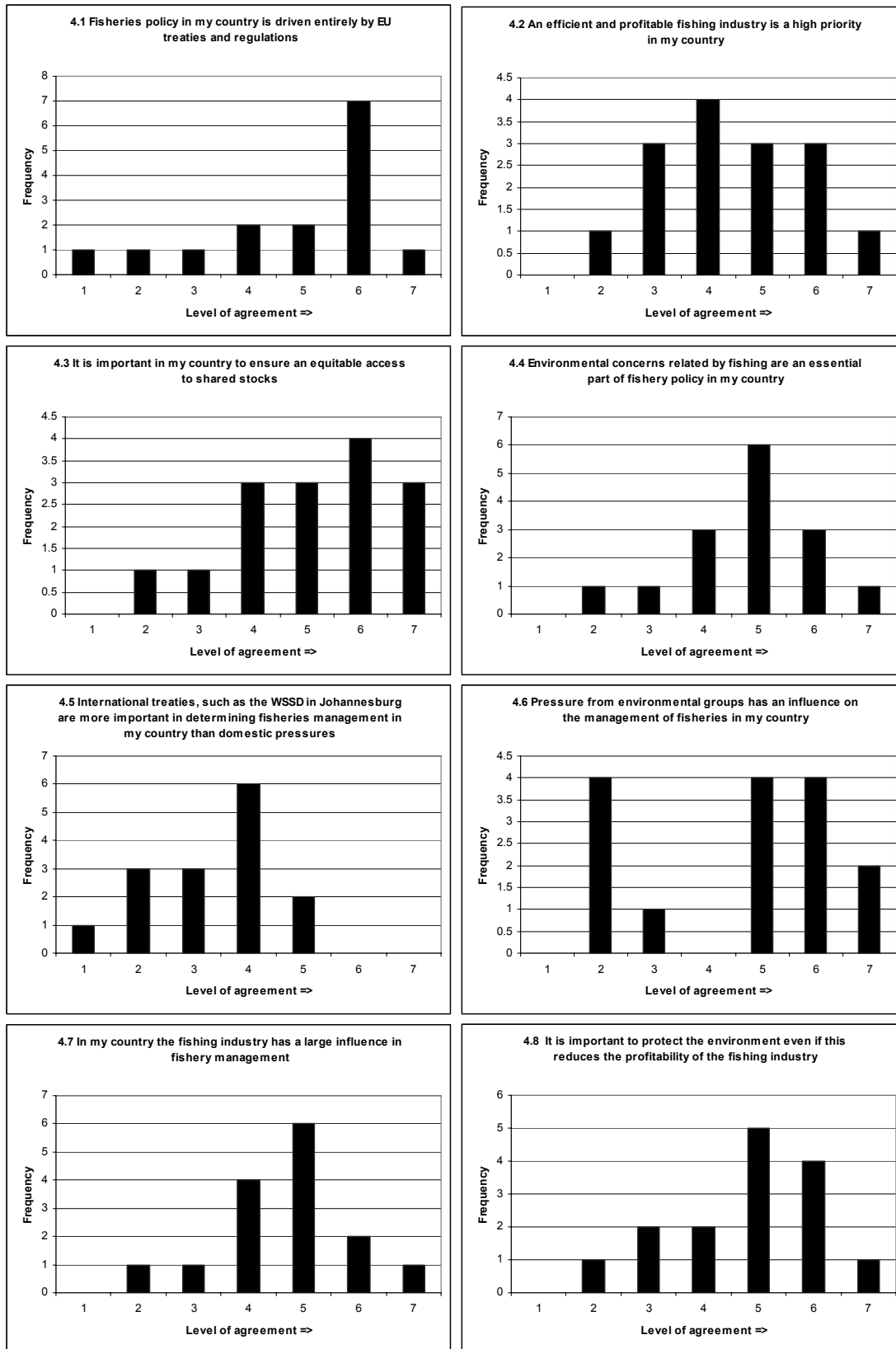


Figure 3. Section 4 - Drivers. Frequency distribution of responses., cont.

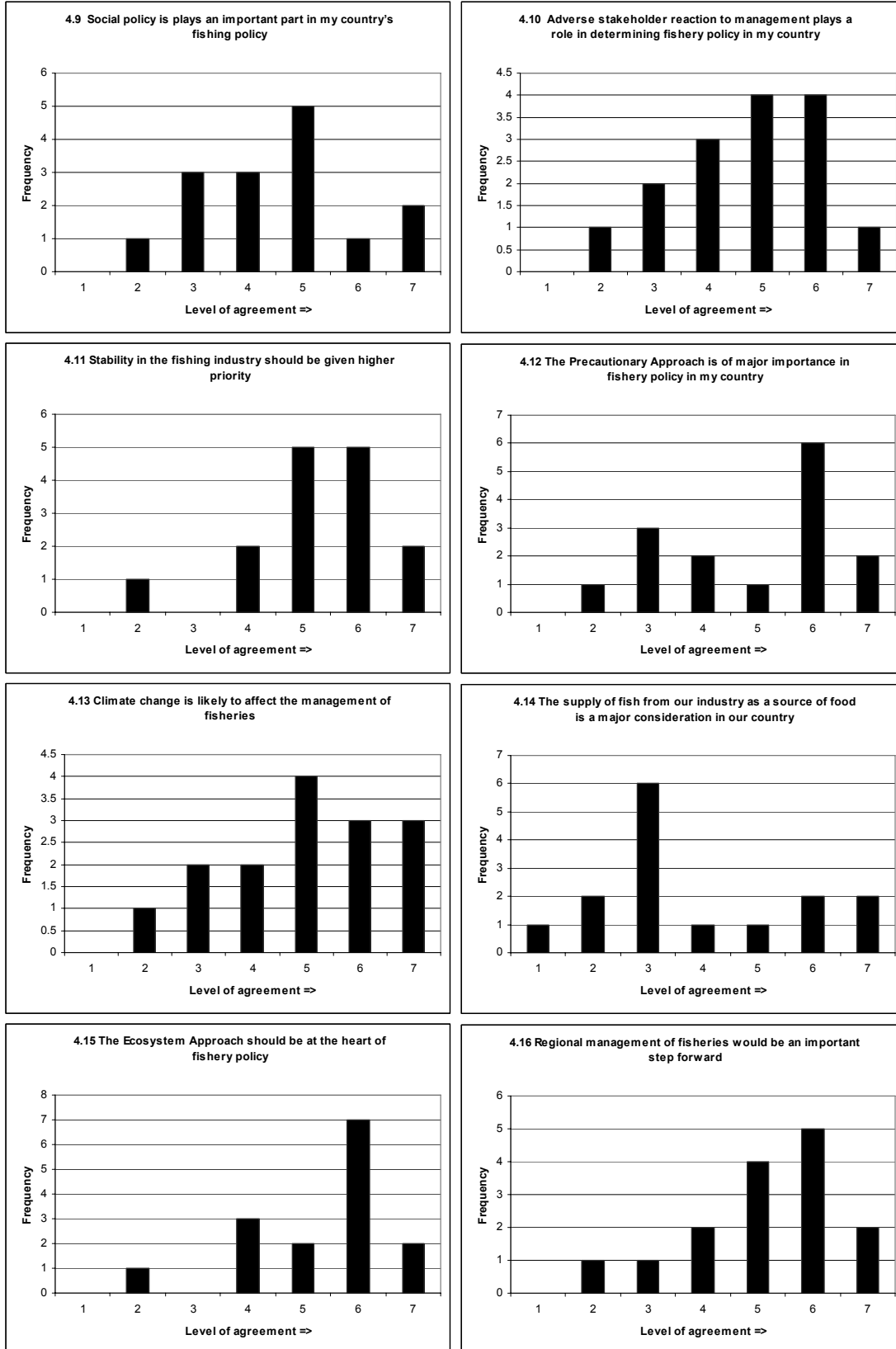


Figure 3. Section 4 - Drivers. Frequency distribution of responses. cont.

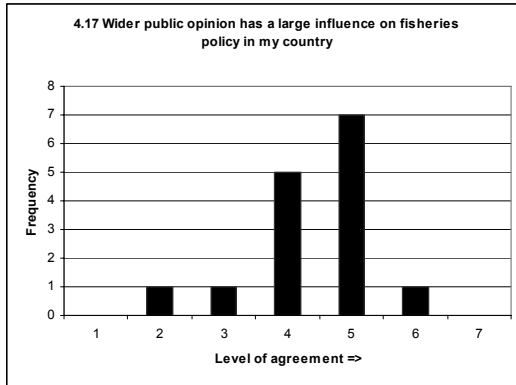


Figure 4. Section 5- Management. Frequency distribution of responses.

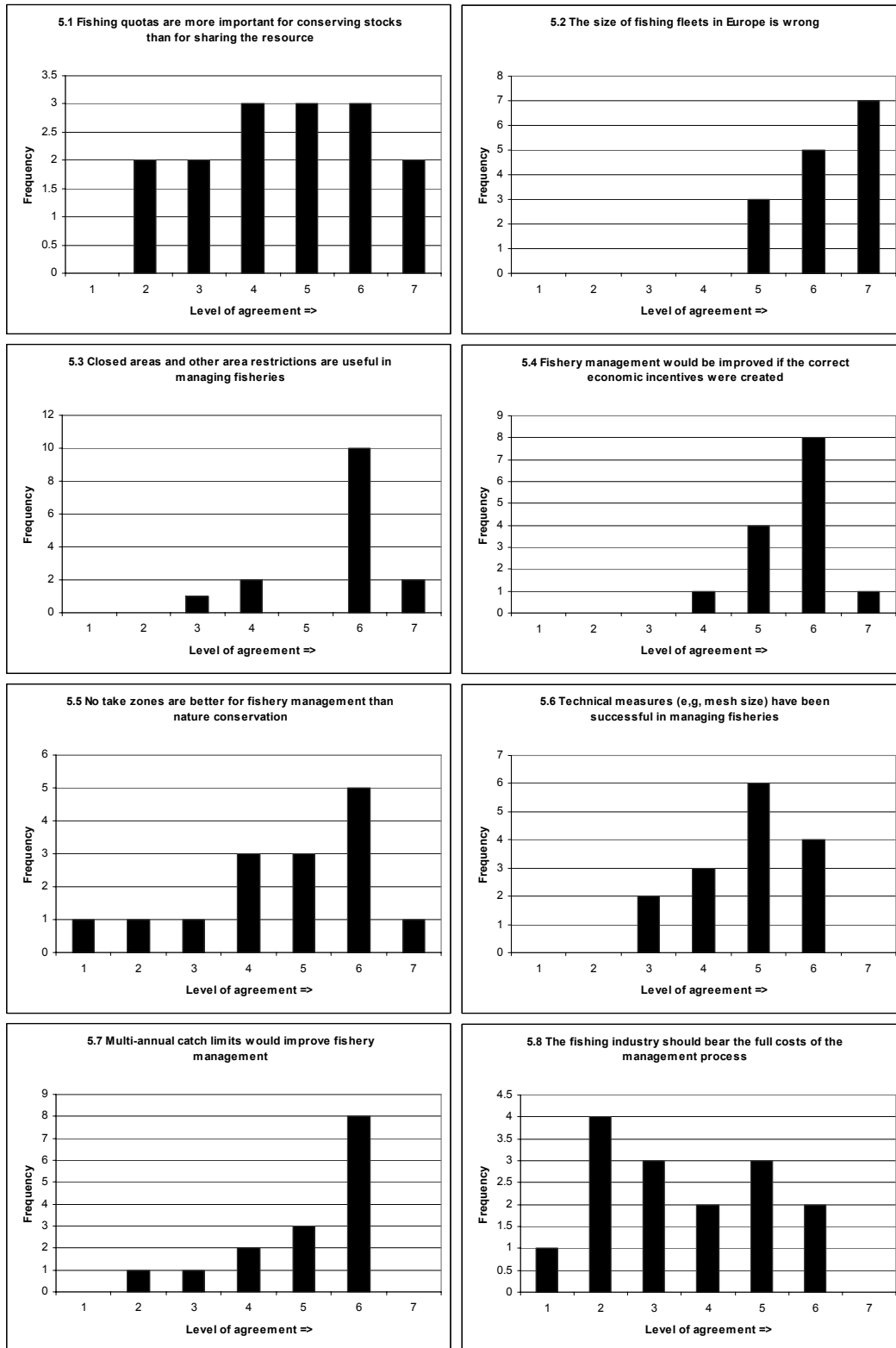


Figure 4. Section 5- Management. Frequency distribution of responses, cont.

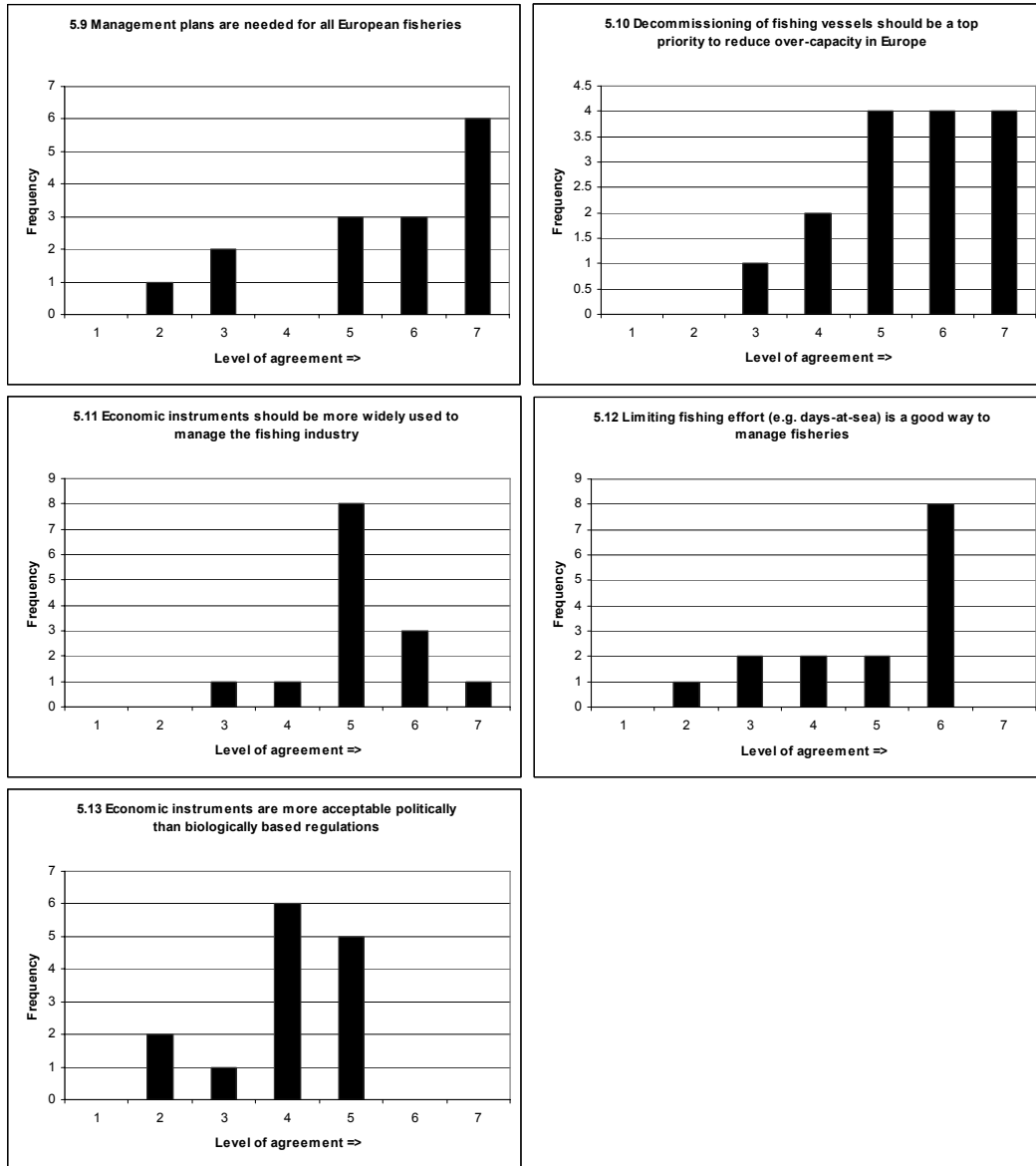


Figure 5. Expert advice. Frequency distribution of responses

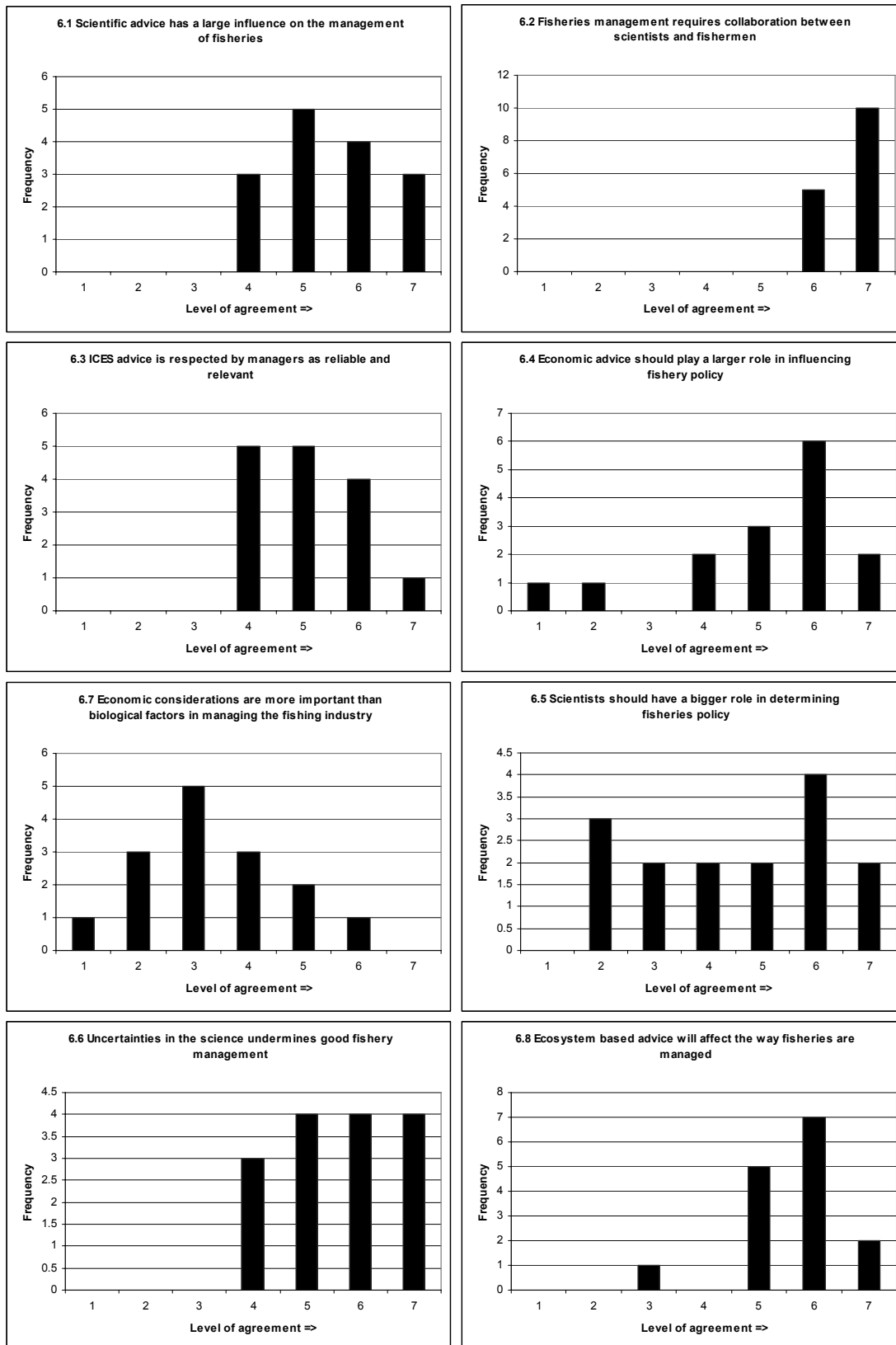
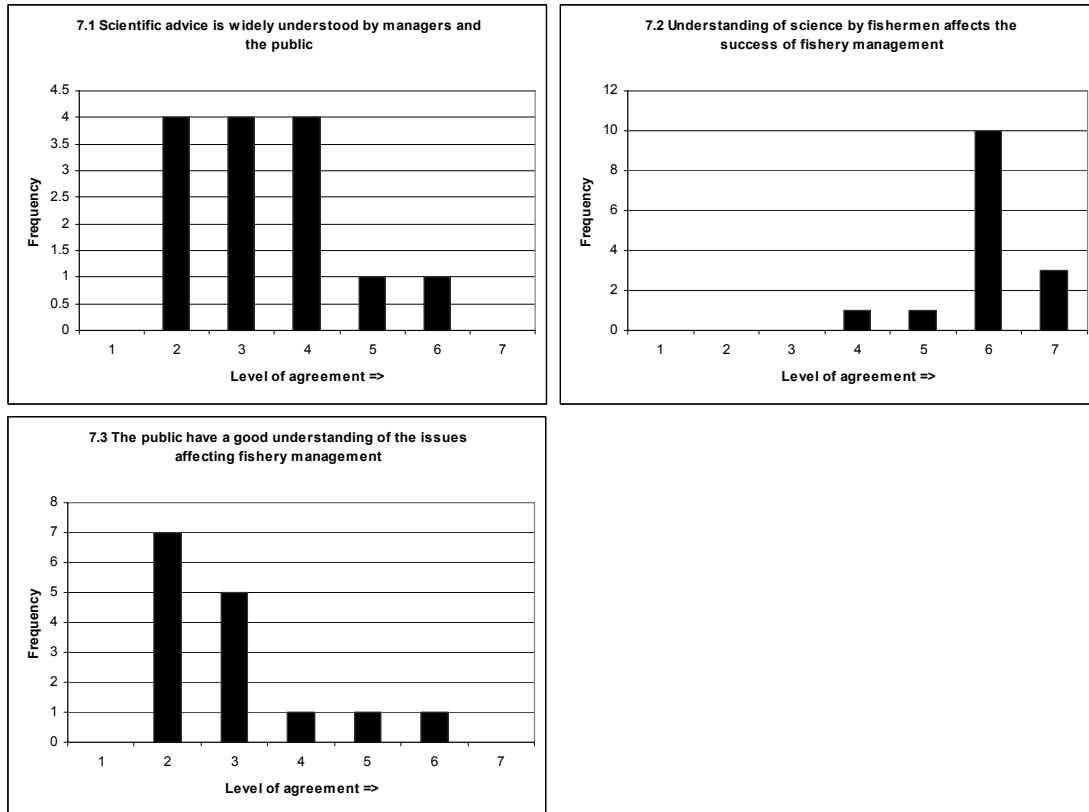


Figure 6. Public understanding. Frequency distribution of responses.



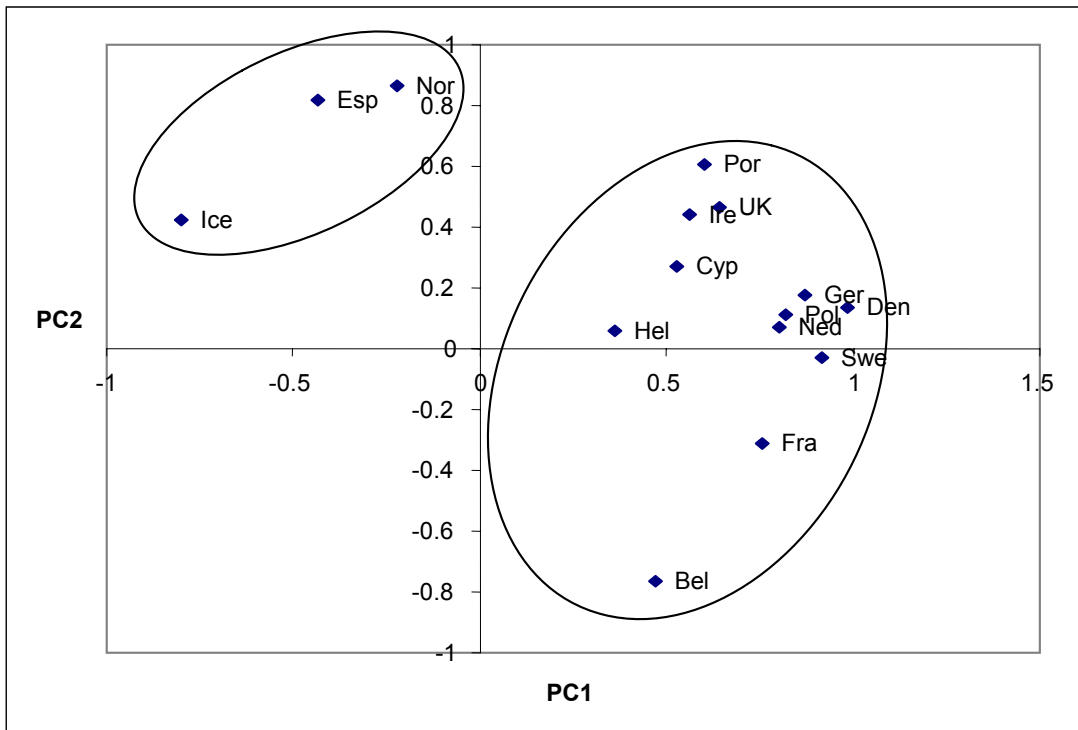


Figure 7. Section 3, Importance of fishing. Component loadings. Letters label the individual countries and circles denote the groups chosen. Group 3a is top left, Group 3b is lower right

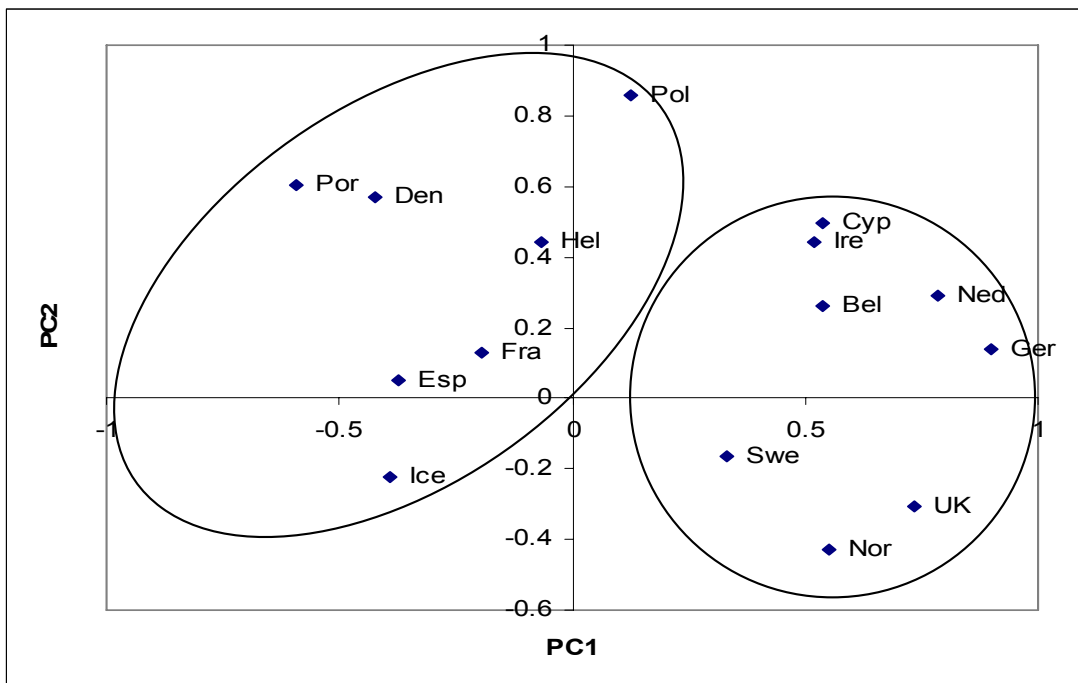


Figure 8. Section 4. Drivers for management. Component loadings. Letters label the individual countries and circles denote the groups chosen. Group 4a is upper left, Group 4b is lower right.

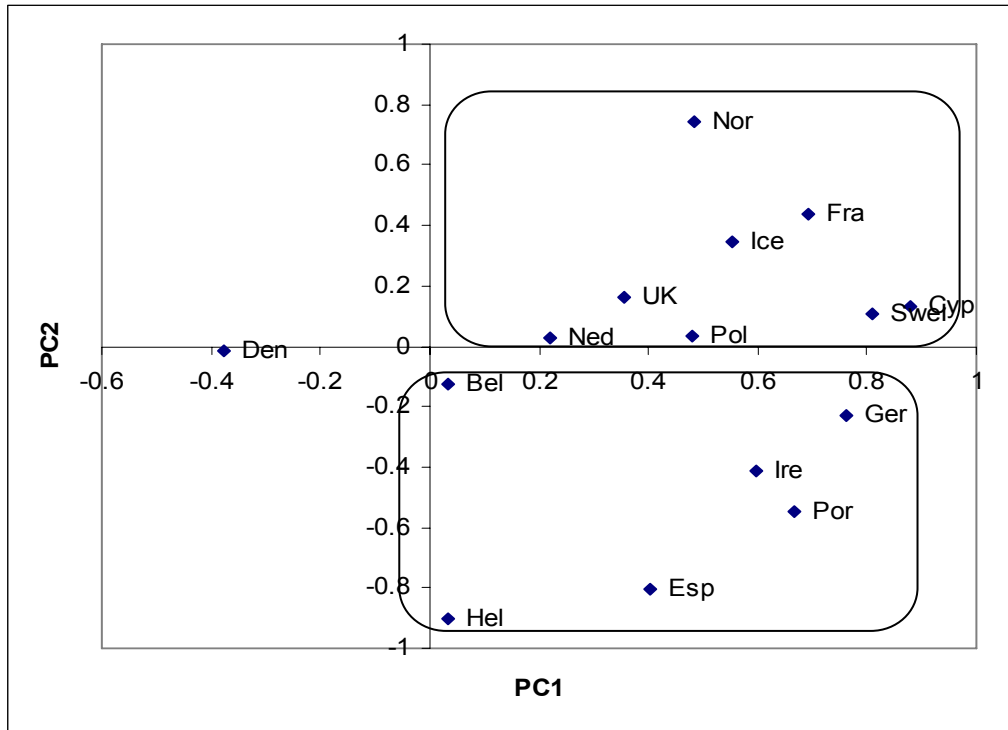


Figure 9. Section 5, Fisheries management tools. Component loadings. Letters label the individual countries and circles denote the groups chosen. Group 5a is upper, group 5b is lower. Denmark is omitted from the groups due to its distance from all other points.

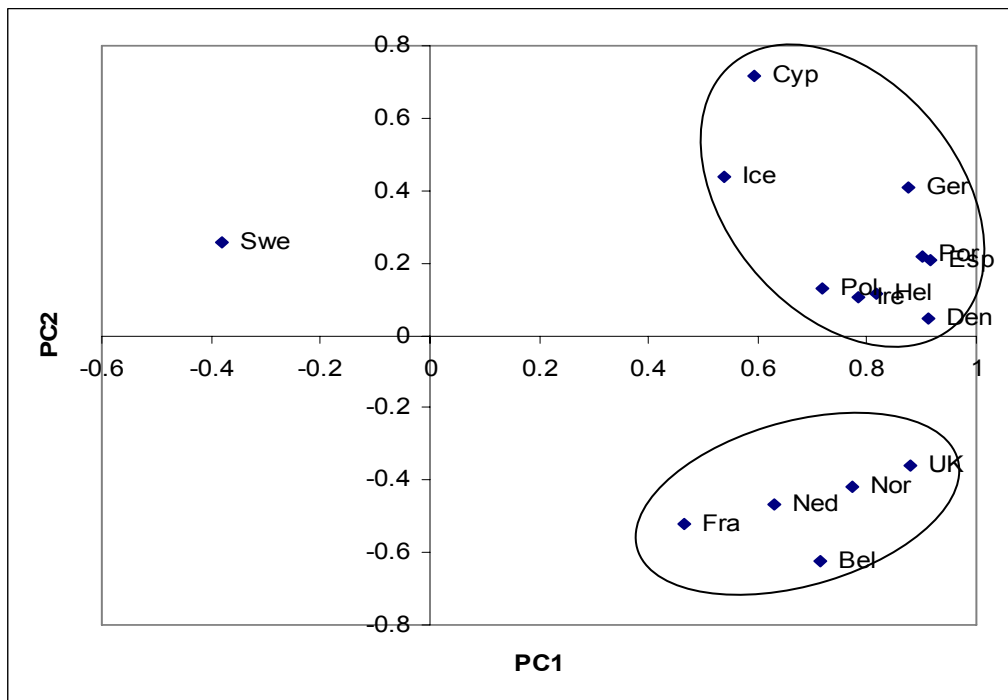


Figure 10. Section 6, Advice. Component loadings. Letters label the individual countries and circles denote the groups chosen. Sweden is omitted from the groups due to its distance from all other points. Group 6a is upper and group 6b is lower.

Annex 1: Additional Comments extracted from Marifish ‘Drivers’ Questionnaire

2 Main principles of fisheries strategy/policy

Reply 1

Management measures aiming at keeping fishing effort under control and rationalising the exploitation of the resources

Reply 2

Control of fishing effort (gear, seasonal and area restrictions)
Structural interventions
Fish market measures

Reply 3

- 1) Implementation CFP: transition to sustainability and to get inspections right on an European scale (level playing field)
- 2) Balancing fisheries, nature and environment
-within the framework of Natura 2000
- Implementation management plan North Sea 2015, about the integration of different users functions.
- 3) Adapting fisheries by reducing capacity and stimulating innovation, like a more differentiated fisheries: other techniques , less bottom trawling

Reply 4

- economical orientated fishery policy
- market mechanisms have attention
- non-discriminating regulation
- concerning stock conservation: a strive for stability in catch possibilities within the framework of the precautionary approach
- long-term stock management and/ or recovery plans; effort management need to be more emphasised in fish stock management
- level playing field: Improvement in cooperation between member states and European commission in inspection and enforcement

Reply 5

Sustainable exploitation of the living marine resources
Maximising economic yield
Precautionary approach and ecosystem basement
Capacity adaptation in fleets

Reply 6

Top priority in the Sectoral Operational Program for 2004/2006 is reduction of fishing capacity by 40%.

Reply 7

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers

1. Integrating fisheries management with the management of the marine environment.
2. Working towards an EU Common Fisheries Policy which is more responsive and adaptive.
3. Seeking to improve the governance of fisheries both at EU level through RACs and at national level through involving stakeholder in fisheries science commissioning.
4. Building long-term profitability by moving management more towards a large stock strategy and trying to ensure that the size of the fleet is consistent with the fishing opportunities available.
5. Basing management decisions on sound science.

Reply 8

There are three strands (sustainable, well managed and profitability) which must all move forward at the same time, i.e. the whole supply chain must be considered (net to plate).

The ecosystem approach must be considered.

Improve the ways in which the supply chain is managed.

Reply 9

- To watch for the responsible and well-balanced exploitation of the fisheries resources, encouraging their sustainable development and to adopt the accurate measures to protect, preserve and regenerate such resources and their ecosystems.
- To improve the conditions of the fishing activity, and the fishermen's standard of living.
- To adjust the fishing effort to the situation of the stocks.
- To promote the development of competitive and economically viable companies in fishing sector, providing well market orientation.
- To promote the improvement of the productive structure of extractive, marketing and processing sectors, improving the use and increasing the added value of fishery products.
- To encourage continue training of professionals of fishing industry.
- To promote association in fishing industry.
- To encourage compensatory measures to the economic and social imbalances that may take place in fishing dependent regions.
- To assure the supply and to promote the consumption of fishery products, especially of surpluses and underexploited.
- To promote responsible marketing of fishery products, contributing to conservation of stocks.
- To improve the quality of products, transparency of market and consumer information.
- To promote the oceanographic and fisheries research

Reply 10

There are many documents from the Bd. Of Fisheries and the government. As EU members, the basic should reasonably be the Common Fisheries policy (CFP) and also international agreements such as FAO and other UN declarations/agreements.

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers

Reply 11

Core Policy Goal – To maximise the contribution of the seafood sector to the economies of coastal regions.

Strategic Objectives (1 to 5)

1 - To implement national policies negotiated within the CFP framework which support a long term sustainable fishing industry for Coastal communities.

2- To promote sustainable development of the seafood sector

3- To contribute to the conservation of fish stocks through effective fisheries management systems

4 – to ensure that the states continually increasing regulatory obligations under European Law in respect of fisheries control are met.

5 – to provide transparent, equitable and user friendly licensing and registration arrangements for sea fishing boats and ensure compliance with EU determined fishing fleet capacity limits and reporting requirements

Reply 12

Sustainability

Consideration of ecological and economic aspects

Decisions on the basis of scientific advice taking into account the precautionary approach

Involvement of the stakeholders in the decision making process

Principle of relative stability

Reply 13

Sustainability

Multiannual eco-system oriented management

Precedence of science according to the precautionary principle

Relative stability in the EC management and in the allocation of national quotas

Improvement of technical measures, in particular selectivity

Reduction of by-catches

Establishment of protected zones and closed seasons to favour reproduction

Bringing in line capacity and fishing opportunities

Improvement of inspection

Reply 14

- Modernisation of the fishing fleet, ports and transforming industry.
- Evaluation and, if needed, adaptation of quota management system, fleet policy and market organisation, in co-operation with the stakeholders.
- Better co-operation and communication between scientists and fishing industry.
- More sustainable fishery by the research on new fishing methods and on the potential of mariculture.
- Re-organisation of fishery education and training.

Reply 15

MariFish: Strengthening the links between European marine fisheries science and fisheries management

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers

To manage the fish stocks as a sustainable natural resource.

Reply 16

There is no general policy or strategy. In specific cases, such as stock recovery (e.g. hake), short-term actions are implemented.

Reply 17

Sustainable development of the fisheries sector. Supply the market with fishery products of reasonable prices. Protection of the natural environment.

3 Importance of Fishing

Reply 1

The socio-economic significance of fishing becomes higher, taking into account that fishing is distributed along coasts and small islands.

Reply 2

Socio-economic structure of local communities especially in areas where there is no many alternative opportunities for employment.

Reply 3

- 1) Our country is a gateway for (flat) fish to Europe, this is partly based on our landings
- 2) Relationship inland fisheries and tourism

Reply 4

Fisheries have a disproportionate level of political attention in relation to the size of the industry, although this is not in itself bad.

Reply 5

Fishing industry our country provides 0.03% GDP and is economically important mainly for coastal areas. Landing value in 2005 amounted up to 153 mln PLN. Processing sector, however is more important and its sale value amounted 2 649 mln PLN.

Reply 6

The processing side is important economically.

Notes:

Question 3.3. Answer holds true when processing is included in 'fishing'.

Question 3.6 International relations meaning EU relations, if EU not included then answer would change to 1.

Question 3.7 Sustainability is the key here.

Reply 7

- 1 Health benefit of eating fish
- 2 Our country has a number of remote communities and countering depopulation of these communities is a serious issue
- 3 Internal party politics have to be considered, especially when defending regional interests against decisions reached in central government

Reply 8

The high rate of consumption of fishery products

Reply 9

Proximity of our country to the most productive fishing grounds in EU.

Greater Public awareness of sustainable development issues in relation to the sea.

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers

Reply 10

Part of regional policy

Reply 11

Fishing is a factor in the tourist industry as tourists from urban areas expect fishing cutters to be a part of their vocational experience on the coast.

The processing industry has a bearing on the economy in certain coastal areas.

Reply 12

- Extensive coast line ⇔ Old fishing tradition ⇔ Social Habits ⇔ High rate consumption of fishery products

Reply 13

- Question 3.6 : Answer would be 7 in case EU Member States are taken into account.

- Question 3.7: Every fishery activity causes a certain amount of environmental damage, which has to be limited to a minimum

Reply 14

Harbour blocking

Strong lobbying from local politicians

4 Drivers

Reply 1

In addition to international and EU treaties and regulations fishing policy is also driven by national regulations

Reply 2

There are influences of other regulations. Like

- Habitat directions
- Marine strategy
- Increasing spatial pressures on the North Sea

Question 4.1. Shellfish fisheries and inland fisheries not driven by EU

Question 4.16: Our country would like to give RACs more responsibilities, like stock conservation within EU/CFP framework

Reply 3

Consumer choice/buying patterns. Consumers choosing fish from sustainable sources.

Uncertainty in the science. The effect of this uncertainty makes change more difficult, there is a need for more confident and robust evidence to support change.

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers

Historical factors. The fact that fisheries were more economically important in the recent past carries political weight/importance through to the present day.

Sustainable Development is the Government's over-riding objective.

Notes:

Question 4.1 There are aspects that are left to national discretion e.g. the organisation of quota management and fishing inside the 6 mile.

Question 4.3 Relative stability is important for our country.

Question 4.5 Overall this is true but domestic, short-term pressures have come to the fore and lead to over-fishing.

Question 4.7. The fishing industry is the stake holder that we listen to the most but does not have such a big influence.

Question 4.8 Depends on the situation. There are instances where protecting the environment takes precedent, e.g. dolphins, over economic cost.

Question 4.12 Majority of fisheries policy is based on CFP which enshrines the precautionary approach.

Question 4.13 Depends on the timescale involved.

Question 4.15 There is uncertainty as to what the EA means exactly.

Question 4.16 Some uncertainty also over what regional management will mean

Reply 4

1 There are fiscal constraints when spending tax payers' money

2 There is a general UK policy not to prop up ailing industries with subsidies

3 A recent move to delegate some decision making to a more regional level

4 Wider UK policy which may constrain Scottish initiatives

5 History plays a part – a) a long history of sea fishing

b) recent history of de-commissioning (no more)

6 Integration of marine users e.g. mining, sport fishing, water sports, commercial fishing

Reply 5

Major Drivers are:

- CFP Framework
- Political Agenda (particularly regarding regulatory compliance)
- Industry
- Public Opinion (particularly in relation to sustainable use of ocean resources)

Reply 6

Question 4.13: Climate change affects fish stocks very much, especially North Sea cod.

In this way there is an effect on management, by the instauration of recovery plans. In the other way, scientific advice likes not to take climate change into account, and as such, it doesn't seem to affect management.

Reply 7

Fuel costs

5 Management

Reply 1

To establish a fishery management, is important to take into account biological social and economic characteristics.

Reply 2

Question 5.12. Effort management may lead to negative effects like fishing for high valued fish only. A combination of quota and effort management is preferable.

Reply 3

Question 5.3. Is closed areas defines as tools to achieve specific managements goals, for example protecting juvenile fish?

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers

Reply 4

None of these questions mentions discarding which is a major issue with management, and one that we are not dealing with effectively.

Problems in current set up. Certain management measures are EU responsibility e.g. catch/effort limits, some are mixed e.g. technical measures and some are more national e.g. decommissioning and other forms of grant aid.

No marine environment issues are covered in the questions. Managing the impacts of fishing on non-target species and on habitats is a key issue for fish management.

Notes:

Question 5.4. Not sure what economic incentives might be.

Question 5.8. Some costs are considered to be ‘public good’ costs e.g. acoustic deterrents on nets, and do not benefit the industry - hence it is correct for government to bear some costs.

Question 5.9 Management plans are needed for shared stocks but not for all fisheries e.g. scallop, crab, lobster, bass stocks are not managed at European level. There is good rationale for management plans at national level.

Question 5.10 Decommissioning should be a national responsibility. Not for us to say across Europe. It is up to the individual states how to reduce effort.

Question 5.12 Attractive from an enforcement angle, but other measures are potentially more effective e.g. technical measures. There is wide interpretation of fishing effort e.g. how to measure

Question 5.13 Not sure what are economic instruments. Assumed to include grants for environmentally friendly gear.

Reply 5

1 No questions on enforcement

2 Enforcement must be regarded as part of overall policy

3 Good data gathering is essential – this includes the monitoring of past decisions

4 How decisions are reached play an important part in enforcement

Reply 6

A question should have been included in relation to compliance and its impact on fisheries management ? This is a big issue and does not appear to be dealt with in the questionnaire !

Reply 7

The distinction between “economic tools” and “reglementary tools” is artificial (theoretical); the first ones are included with the control in the means to make the second more efficient.

6 Expert Advice

Reply 1

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers

Scientific and technical literature on fisheries still remains dispersed

Reply 2

- Make uncertainties in biological advice transparent
- Ex ante evaluation of biological and economical measures
- Scientists should formulate management options and consequences (scenario's)
- Cooperation between biologists and economists

Reply 3

Ecosystem based advice will play a role in the future, is not yet in operation

Reply 4

Most managers accept that smaller fleets with higher profits is the aim, but difficult to achieve in reality e.g. cod recovery plans from Commission are for days at sea restrictions, rather than decommissioning.

Notes:

Question 6.3 generally but not always. High degree of uncertainty over the science yet the management system requires precision for setting quotas.

Question 6.5 Policy is already strongly driven by scientists, therefore it should continue at the same level.

Question 6.8. Too much uncertainty over the meaning of ecosystem based management

Reply 5

- 1 Science is at the centre but could be articulated in a more transparent and speedier way
- 2 The Commission tends to take the most cautious and most environmentally friendly line – this is not always helpful as it leads to difficult negotiations
- 3 The independence and integrity of the scientific institutes is essential

Rider to Question 6.6 – Uncertainties need to be articulated more honestly

Reply 6

Ecosystem Approach still seems mysterious and not well understood even by scientists !

Another possible question STECF advice is respected by managers as reliable and relevant !

Role and value of National Laboratories in relation to expert advice – are they valued and respected by managers ?

Reply 7

Scientific advice should be improved and should play a more important role in fisheries management.

Reply 8

Fisheries science should take a more holistic approach.

Reply 9

Question 6.5 - Scientists do presently play a big role

7 Public Understanding

Reply 1

- economic unit in EC
- we need new financial instruments
- we need to learn from other natural resource management knowledge
- we need to execute and learn from policy evaluation and management evaluation also on European level (CFP lasts 10 year, an evaluation is necessary after 4 and 8 year)
-

Reply 2

(Public) support is important for fisheries management. Co management is an important way to achieve this. Participation in policy formulation and development need to become more important. E.g. via RACs, the creation of regional involvement. Research in this realm is necessary, for instance the development of knowledge on economic incentives in relation to the behaviour of fishermen

Reply 3

The understanding of stake holders has improved and scientists and managers should realise that they can benefit from the knowledge of fishermen. A three way partnership can be nothing but good for the future

Reply 4

Question 7.1

There is a difference between the understanding of scientific advice by managers and public.

Perhaps these questions should have been separated?

Reply 5

Science should have a language that there is a better understanding by stakeholders and the public.

Reply 6

Science should use a more understandable language. There is a gap between of understanding between scientists and managers and even more between scientists and the public, especially the fishing sector that has tremendous problems to support the findings of science.

Reply 7

In our country public opinion and the media are in general not concerned by the problems of sustainable management of fisheries resources

Annex 2 : OVERVIEW OF NATIONAL FISHERY POLICIES/STRATEGIES

CYPRUS

Industry Snapshot

2005

- Fishing Fleet 700 vessels, of which over 85% are under 12 metres and fish close to the coast
- The catching sector provides jobs for approximately 1000 people
- Picarel is the main species landed, accounting for 30% of catches
- Total contribution of the capture fisheries and aquaculture production to the economy of Cyprus valued at 40,5 million CYP (approx. 70 million euro)
- Production of the capture fisheries and aquaculture reached 5500 tons
- Aquaculture production of sea bass and sea bream (1950 tons), blue fin tuna (1480 tons), marine shrimp (5 tons) and trout (70 tons)
- Production of processed fisheries products was 5000 tons

OVERALL AIM OF THE NATIONAL POLICY FOR THE FISHERIES SECTOR

The National Policy for the Fisheries Sector is described in the Single Programming Document for Fisheries (2004 – 2006). Its overall aims are to:

- Achieve a competitive and sustainable commercial fishing industry
- Become capable of offering to the consumers high quality products
- Meet the market demand
- Meet the European and international competition

PRINCIPAL OBJECTIVES OF THE POLICY

Axis I: Adjustment of Fishing Effort

- Scheme for the scrapping of fishing vessels
- Adjusting fishing effort at levels that correspond to the available fish stocks
- Scheme for the protection of historical heritage

Axis II: Fleet Renewal and Modernisation

- Scheme for the improvement of safety, hygiene and quality of products

Axis III: Protection and development of aquatic resources, aquaculture, fishing port facilities, processing of fish and inland fishing

- Sustainable and balanced development of aquaculture, mainly in the coastal area
- Scheme for the expansion of processing units and farms

Axis IV: Technical Assistance

- Collection of data and feasibility studies

FUTURE PLANNING

The National Strategic Plan for Fisheries (2007 – 2013) contains the aims and priorities of the Government in relation to the Common Fisheries Policy. Its main aims are the:

- Sustainable management of fishing resources, by promoting environmentally friendly methods
- Sustainable development of aquaculture
- Viable development of the processing and trading sectors, giving emphasis on quality
- Improvement of the competitiveness of the fishing sector
- Protection of the marine environment

Further details are available from:

Web Site of the Department of Fisheries and Marine Research www.moa.gov.cy/moa/dfmr

DENMARK

Industry snapshot

- Total fleet approximately 3,270 vessels, 71% of which are under 10 m
- DK vessels land 1.2 million tonnes annually (average 2000 to 2005) with a value of €420 million
- By weight (and value), landings by DK vessels: demersal 7% (46%), pelagic 11% (12%), industrial 72% (23%) and shellfish 10% (19%)
- DK vessel landings have declined by approximately a third over 10 years by weight, but value is relatively unchanged
- Number of fishermen (part and full-time) is approximately 4,000

OVERALL AIM OF NATIONAL FISHERIES MANAGEMENT PLANS

To create a framework allowing for the largest possible sustainable yield of the Danish fishing and aquaculture sector, where the resources are exploited with due recognition of the objective of regional development and ecological sustainability.

Sustainable yield entails that the present activity of the Danish Fishing sector does not limit future opportunities and refers to commercial, socio-economic and cultural values.

It is imperative, that the sector continuously develops and strengthens the competitiveness on a biological and environmentally sustainable basis. It is of particular importance that catches and unintended impacts on the environment are kept within sustainable limits.

A fleet structure including both off shore and costal vessels, is of importance in order to maintain the employment in the primary fishery. Such fleet structure contributes to a multi chorded Danish fishery with the conditions required to optimize the quality and to utilize all fishing possibilities. Furthermore, there is a need for modernizing the Danish fleet to allow the requirements concerning work environment and safety, cost level, selectivity, and product quality to be met.

Independent qualified scientific advice is a precondition for a successful management of the fisheries sector. The necessary advice can only be given if research of high quality takes place together with ongoing monitoring of the fish stocks, the ecosystems and the fisheries. The research and advisory work are strengthened through ongoing public investments in fisheries research and optimal utilisation of the possibilities for support within EU programmes. The advisory system will be made more transparent and up to date through increased involvement by stakeholders in monitoring, research and advice.

GERMANY

Industry snapshot

- Total fleet (2005) 2121 vessels, of which 1624 (77 %) are 10 m and under.
- German vessels landed 240,000 tonnes with a value of € 177 mill. of which 125 tonnes (€ 84 mill.) were landed abroad (2004).
- By weight (and value), landings of German vessels (inside and outside of Germany) were pelagic 60 % (25 %), demersal 26 % (51 %) and shellfish 14 % (24 %).
- Landings of German vessels have increased by approximately 17 % over 10 years by weight. The value has increased approximately 24 %
- Number of fishermen: 3727
- Most important in terms of catches were herring (69000 tonnes – € 20 mill) horse mackerel (23600 t - € 8 mill), mackerel (23400 t - € 14 mill), in terms of value shrimp (16000 - € 32 mill.) and cod (11500 t - € 27mill.)

Principles of the German fisheries policy

The Common Fisheries Policy is the framework in which the German fisheries policy is defined. There is currently no alternative to the CFP.

The German fisheries policy is focused on the ecological compatibility and sustainability of the fisheries policy and on conservation of marine ecosystems in view of the continued decline in stocks. To achieve this

- annual catch limits are to be established by the Fisheries Council exclusively on the basis of scientific advice in line with the precautionary principle;
- future policy decisions should focus on developing multi-annual eco-system oriented management strategies encompassing several fish species;
- technical measures should be tightened and improved further;
- particular emphasis should be put on measures reducing discards, in particular of juvenile fish. Germany is in favour of pilot projects exploring the feasibility of an obligation to land all catches;
- protected zones and closed areas, including no take zones, should be established to favour reproduction of fish stocks.
- industrial fisheries should be prohibited in the long run and reduced in the short run.
- fishing effort is to be reduced EU wide by:
 - permanent capacity reductions in the EU fishing fleet, where necessary with public funds.
 - temporary closures where appropriate (as for instance in the Baltic Sea)
 - days at sea schemes, to the extent necessary and supplementary to the TAC and quota system, for the protection of particularly threatened stocks
- the CFP has to be effectively enforced,
- fishing and other relevant data have to be collected comprehensively to allow proper scientific advice.

GREECE

Industry Snapshot

- Total fleet approximately 18,960 vessels, 89.7% of which below 10 m in length (LOA)
- Most of the vessels belong to the small scale fishery segment (17,226; 94.3%) while the rest of the fleet is composed of bottom otter trawlers (347; 1.9%), purse-seiners (298; 1.63%) and beach-seiners (400; 2.19%)
- Greek vessels land 164,000 tonnes with a value of 645 m€
- By weight, landings in Greece by national fleet are: crustaceans 5.8%, demersal 38%, pelagic 45%, mollusks 0.7% and cephalopods 10.5%
- Number of fishermen (part time and full time) is approximately 32,300 (2005 figure)

Overall aim of national fisheries management plans

The management of Greek fisheries sector is essential in order to achieve sustainability of the resources, protect and conserve the marine environment and support the socio-economic status of the local fishing communities. The aims for the next period focus on the conservation of the marine environment in relation to the fishing operations, welfare and security of products and personnel on board, manage fishing effort and avoid overcapitalization of the fleet. Fishing effort needs to be adjusted to the available resources. Support should be available for the modernization of the fleet.

Principal objective

To establish sustainable balance between the fishing resources and their exploitation in accordance to the principles of the reformed Common Fishery Policy. In view of limited scientific data on biological resources, the precautionary approach to the management of the stocks will be utilized.

Key elements of Greek plans – means

The key elements of the management plans are:

- adjustments of fishing effort aiming to (a) modernization of the fleet (b) decommissioning of the fleet considering specific technical characteristics (mainly vessels smaller than 7m LOA) and geographic distribution (mainly vessels operating in closed gulfs and close to sensitive ecosystems)
- provision of special support to the small scale fishery aiming to prevent reduction of rural communities, improve security of fishing operations, improve quality of landed products and the conservation of coastal marine environment
- socio-economic measures to cope with the effects of the reformed common fishery policy to the Greek fishing sector. Special interest will be given to the new fishermen entering the fishing workforce in order to obtain their fishing gear and vessel and improve their skills
- promote research on the state of the most commercially important stocks in order to improve our understanding on the biology, abundance and distribution of the stocks, their state and their economic value

ICELAND

Industry snapshot

- Total fleet approximately 1600 vessels. In 2004 the fleet consisted of 672 small undecked boat, 855 decked vessels and 87 trawlers.
- Icelandic vessels land nearly 2,000,000 tonnes with a value exceeding \$2,000,000,000 (1,571M euros) annually.
- By weight (and value) landings by Icelandic national fleet are: demersal 21% (77%), pelagic 76% (16%) and shellfish 3% (7%)
- Icelandic vessel landings have ranged between 1.5 – 2 million tonnes during the last decade.
- Number of employees in the fishing and fish processing industry were approximately 11,000 in 2003.

OVERALL AIM OF NATIONAL FISHERIES MANAGEMENT PLANS

Ensure maximum yield and sustainable utilisation of marine resources to support the nation's livelihood

PRINCIPAL OBJECTIVES

- To maintain the ocean's health.
- To achieve sustainable utilization of all marine resources.
- To make every effort to preserve the ocean's biodiversity and ecosystem.
- To ensure that all decisions are based on the best available scientific and economic information available.
- To participate proactively in international forums to positively influence currents and trends in discussion on ocean-related issues.
- To promote free trade for seafood products in international trade.
- To ensure that consumers can choose Icelandic seafood knowing they are safe and healthy products.
- To ensure that individuals and enterprises in the Icelandic fisheries sector have clear and comprehensive non-discriminatory guidelines to follow that create a positive working environment which strengthens the sector's competitive position internationally.

SOME KEY ELEMENTS OF OUR POLICY

The Icelandic policy on international co-operation for ocean management and utilization is based on three pillars:

- the United Nations Convention on the Law of the Sea,
- the concept of sustainable development
- the view that the responsibility for the conservation and utilisation of marine ecosystems is best placed in the hands of those states directly affected and with the greatest interest at stake.

The first principle of the Rio Declaration is of particular relevance: *“Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.”*

Further details are available from: *Close to the Sea, Icelandic Ministry of Fisheries, 2005*
<http://eng.sjavarutvegsraduneyti.is/Publications/nr/1088>

IRELAND

Industry snapshot

- The Irish Fishing Fleet consists of about 1,550 vessels. The vast majority (88%) of these are small (<15 meters in length) vessels fishing mainly in inshore areas. There are approximately 135 vessels larger than 24 meters in length of which the majority are multipurpose vessels targeting whitefish, pelagic species and/or bivalve molluscs. There are 23 vessels larger than 24 meters in length engaged in fishing for pelagic species.
- Of the vessels in the Irish fleet, 898 use predominately passive gears and 652 predominantly towed gears. The total tonnage (GT) of the fleet is 84,638 with an associated engine power of 207,739 (kW)
- The total landings in 2001 amounted to 324,858 tonnes with an associated value of €281 million. Demersal species accounted for 39,090 tonnes (€95 million): pelagic species 223,740 (€79 million) and Shellfish species 62,228 tonnes (€106 million)
- The fishing and aquaculture sector employ 15,000 people and the value of the final point of sale of seafood sold in Ireland or exported was €700 million in 2004

Source of Information

www.dcmnr.gov.ie and ec.europa.eu/fisheries/fleetstatistics

Overall Aim of National Fisheries Policies and Strategies Policies

Growth of the seafood sector fits with the national spatial and regional development strategies of the Irish government and has strong development potential as part of a high quality, value added, national food industry. The Programme for Government set out a number of priorities for the sea fisheries sector including, the introduction of a new fleet policy, a long term strategy for sustainable development of our fishing industry, development of fishery harbours and effective management and service structures.

The Core Policy Goals (which relate to fisheries and aquaculture) are set out in the Statement of Strategy 2005-2007 and include;

- To maximise the contribution of the seafood sector to the economies of coastal regions
- To support and manage the sustainable use and development of Irelands marine territory
- To develop national marine research capability which supports the innovation and sustainable development of the marine sector and protection of the marine environment.

(Further Information www.dcmnr.gov.ie)

Future Policy Drivers for Fisheries

The Seafood Sector in Ireland is going through a period of significant change. A new Marine Research and Innovation Strategy (Sea Change 2007-2013) will be published in October 2006 and will set out a new direction for the Marine (including Seafood) Sector built on research and development, innovation and technology transfer. A major independent review of the Irish Fishing Industry is under way and will report to Government in November 2006. The new National Development Plan 2007 to 2013 (NDP) will be launched in early 2007 and will include funding opportunities for the seafood sector.

THE NETHERLANDS

Industry snapshot

- The Dutch fleet consists of 473 vessels with a total of 558,000 HP: 367 cutters; 17 large high sea trawlers; 69 mussel vessels and 20 other coastal vessels.
- The total revenue of the Dutch high sea and coastal fishing industry as a whole was €411 million in 2004. For the North Sea cutter fleet revenues were €245 million. The large-scale high sea fishing fleet achieved a total gross revenue of €131 million.
- On Dutch auctions 107,000 tonnes of fish was landed by Dutch and under foreign flag operating Dutch vessels with a value of €326 million, 87% of these landings is flatfish.
- Number of fishermen is 2,439
- Over the last seven years the cutter fleet has been scaled down by 10%. Engine power decreased by 17% and the use of oil by 25%.

OVERALL AIM OF NATIONAL FISHERIES MANAGEMENT PLANS

The Dutch policy aims to improve responsible fisheries, based on sustainability. In implementing this policy the focus is on the distribution of responsibilities in fisheries between the industry and the government and on the relation between fisheries and nature.

PRINCIPAL OBJECTIVE(S)

Fisheries are social, economic and cultural valuable to the Netherlands. The fishery chain should therefore remain cost effective while at the same time consequences of fisheries for the ecosystem should be reduced. The sector needs to take societal responsibility.

SOME KEY ELEMENTS OF OUR PLANNING

- The role of Dutch fisheries policies is strongly internationally orientated, among others as a consequence of the Common Fisheries Policy.
- Fisheries policy in the Netherlands is based on an ITQ and a co management system.
- In some situations a decrease in capacity is necessary. The ministry financially supported fishermen that voluntarily ended their business in 2005 and 2006.
- The ministry strives on the one hand at a sustainable level of the fish stocks and on the other at a continuing socio-economic perspective for the fisheries. Great fluctuations in total allowable catches are therefore undesirable. The ministry works in EU association towards recovery plans for stocks under pressure (e.g. North Sea plaice). These recovery plans provide certainty about catch possibilities for the fishermen.
- In order to relieve the maritime environment the ministry stimulates the development of environmental friendly gears; especially the electro beam trawl (pulskor)
- The ministry stimulates the development of aquaculture, within certain preconditions, like ecological sound production and killing methods.

Further details are available from:

General: www.minlnv.nl

Figures: "Visserij in cijfers 2004": www.lei.wur.nl/

Future: Advice Task Force Sustainable North Sea Fisheries: www.pvis.nl

NORWAY

Industry snapshot

- Total fleet approximately 7,700 vessels of which 60% are below 10 m. (2005 figures).
- Norwegian vessels land 2,5 million tonnes with a first hand value of 11,7 billion (1000-million) NOK (2005 figures) Vessels below 10m represent less than 4 % of the total first hand value.
- By weight (and value) the landings by national fleet are: demersal 24 % (49 %), pelagic 68 % (44 %), shellfish 2% (7 %), seaweed 6 % (less than 0,5 %)
- Over the last 10 years total annual landings have varied between 2,5 and 3,0 million tonnes while the total first hand value (nominal value) has been in the range from 8,7 to 11,7 billion NOK.

PRINCIPAL OBJECTIVES

Sustainability is the key element of our management strategy of the living marine resources. The management of fish stocks, both as a vital part of the ecosystem and as a renewable food resource, is to be in accordance with the precautionary approach reference points and agreed management plans. The precautionary approach and ecosystem based management also imply taking into account aspects like protection of habitats, multi-species interactions including various types of by-catches, pollution, change of climate, genetic diversification and food safety.

The management of the fisheries shall contribute to maximizing economic yield. The economic well being of the fishing fleet is important with a view to: reducing over-fishing of quotas and other violation of fisheries regulations, securing good jobs for the fishermen, preserving the main pattern of settlement along the coast.

A vital part of our management objective is to adjust the catching capacity of the fishing fleet to the amount of available resources. Overcapacity is the “root of all evil”; e.g. it leads to infringements of fisheries regulations which in turn creates a need for a high level of enforcement at sea and in port as well as a high level of administrative costs in general.

SOME KEY ELEMENTS OF OUR PLANNING

- Norway has a strong commitment to international cooperation concerning all aspects of management of the marine living resources. Most of our fish resources are shared with other coastal states; a fact that calls for international cooperation. Biological and environmental research, for the sake of ensuring both high quality and legitimacy, should be carried out jointly by scientist from various countries concerned.
- In order to achieve a better balance between fishing capacity and available resources all Norwegian fishing vessels are subject to both output (quotas) and input (various types of licences, registration requirements etc) regulations.
- Our national management system is set up with a view to ensuring participation by all relevant stake holders as well as a sufficiently high degree of legitimacy for the different regulatory measures.
- High quality science in different areas as part of the advisory process is considered vital. Close cooperation between marine scientists and economists have on several occasions produced solid management advice.

Reference (our national policy):

Stortingsmelding nr 19 (2004-2005) Marin Næringsutvikling. Den blå åker. (white paper)
Stortingsmelding nr. 51 (1997-1998) Perspektiver på utvikling av norsk fiskerinæring (white paper)
Fiskeri- og kystdepartementets miljøhandlingsplan 2005-2008

POLAND

Industry snapshot

- Number of fishing vessels by the end of 2005 - 975 vessels of which 595 (61%) up to 10m (compared to 2003 reduction by about 40% as result of scrapping program)
- Landings in 2005 are about 124,000 tonnes with value 153,000,000 PLN (50.2M USD or 39.3M euro)
- Number of fishermen by the end of 2005 are about 3600.
- Sale value of processing sector 2,694,000 PLN (884,212 USD or 691,700 euro) and employment of about 14.000.

OVERALL AIM OF NATIONAL FISHERIES MANAGEMENT PLANS

There is no clearly defined fisheries management plan as management policy depends in major part on CFP. However “*Strategy for fisheries development in 2007-2013*”, approved by the Council of Ministers, is the basic fisheries policy document in Poland. In accordance with this document, overall aim of Polish fisheries policy for years 2007-2013 is rational exploitation of living aquatic resources, improvement of effectiveness and competitiveness of fisheries sector to ensure permanent contribution of the sector to the national economy.

PRINCIPAL OBJECTIVES

Principal objectives are:

- Increase economic performance of the sector
- Obtain sustainable balance between fishing capacity and resources available
- Social protection of population dependent on fisheries and aquaculture
- Protection and development of coastal fisheries
- Improved safety and quality of seafood products
- Development of aquaculture
- Modernization of fishing fleet and fishing ports infrastructure

SOME KEY ELEMENTS OF OUR PLANNING

We support necessity of rebuilding of cod stocks in the Baltic, however, long term management plans need to be guided by sound research based on reliable catch data.

Sustainable balance between fishing capacity and resources available could be achieved to a lesser extent by a reduction of the fleet (as it was reduced by 40% during 2004-2006) but more on other management measures (closed periods, areas). Closer cooperation between science, fisheries sector and administration is essential for efficient and responsible fisheries management.

Enforcement and compliance are important elements of fisheries management.

Further details are available from:

<http://www.minrol.gov.pl/DesktopDefault.aspx>

PORTUGAL

Industry snapshot (2004 figures)

- Total fleet approximately 10,100 vessels
- Portuguese fleet landed 221.312 tonnes with a corresponding value of 354 million euros
- Fish import exceeds export by 225,100 tonnes implying a commercial deficit of approximately 670,000 euros
- Fish intake per capita: 59.3 kg/hab/year (Source: FAO)

OVERALL AIM OF NATIONAL FISHERY STRATEGY

Although a national fishery policy with long-term objectives doesn't exist, we are taking actions in order to make our fishing industry modern, sustainable and competitive.

SOME GUIDELINES OF OUR POLICIES

- We are taking measures to restore depleted stocks (e.g. hake, Norway lobster) and protect vulnerable marine species and habitats (e.g. establishment of Marine Protected Areas).
- We are currently making an effort to renew/modernise our fleet in order to reduce costs in fishing activity and consequently make it more profitable.
- Due to the relatively low abundance of large stocks of fish in Portuguese waters (as a result of a narrow continental platform), the activity of our fleet in foreign fishery grounds is of extreme importance to the national fishery industry.
- Participation in Regional Fishery Organisations (e.g. NAFO) has a key role in securing the accessibility and maintaining the activity of our fleet in foreign fishery grounds (e.g. Newfoundland).
- Scientific advisory has an increasing role in determining fishery policies/strategies

Further details are available from:

www.dg-pescas.pt

Industry snapshot

- Total fleet approximately 13.693 vessels, 67% of which are under 9 m and 78% under 12 m. (to date 1/12/2005)
- Spanish vessels land 897.000 tonnes ⁽¹⁾
- Bv weight (and value). landings by national fleet were 929.933 Tn (1.851.498.000 €) ⁽²⁾

⁽¹⁾ From the OECD statistics of total annual catch of fishery products by EU Member States, Iceland and Norway and other major fishing nations from all oceans and internal waters of the world. The data are expressed in the live weight equivalent of the landings. This is the weight as the product is taken from the water (that is, before processing) but excludes any products which are not landed. Data from 2003

⁽²⁾ 2001 data

OVERALL AIM OF NATIONAL FISHERIES POLICIES/STRATEGIES

To find a way of managing marine fisheries that is consistent with sustainable exploitation of resources and ensures the maintenance of fishing operations. In brief, the objective is “responsible fishing”.

PRINCIPAL OBJECTIVES

These are the main objectives of the Marine Fisheries Act 3/2001, which is the pillar for the organisation of the sector and the commercialisation of fisheries products. Through this act we aim to establish a regime for the conservation, protection and regeneration of fishery resources, and the regulation of professional and recreational fishing activities. It's the single, standard framework applicable throughout the country.

- To develop a strategy consistent with the comprehensive marine ecosystem-based approach
- To watch for the responsible and well-balanced exploitation of the fisheries resources, encouraging their sustainable development and to adopt the accurate measures to protect, preserve and regenerate such resources and their ecosystems
- To improve the conditions of the fishing activity, and the fishermen's standard of living
- To adjust the fleet fishing effort to the situation of the stocks
- To promote the development of competitive and economically viable companies in fishing sector, providing well market orientation
- To promote the improvement of the extractive, trading and processing sectors, improving its yield and increasing the added value of fishery products
- To encourage continue training of professionals of the fishing industry
- To promote association within the fishing sector
- To encourage compensatory measures for the economic and social imbalances that may take place in fishing dependent regions
- To ensure the supply and promote the consumption of fishery products, particularly surpluses and underexploited resources
- To promote accountability on trade of fishery products, contributing to the conservation of stocks
- To improve product quality, trade transparency and consumer information.
- To promote oceanographic and fisheries research, with the aim to monitor the fisheries currently exploited, identify new fishing areas and species with a view to diversifying the fleet's activity

Further details are available from:

Marine Fisheries Act 3/2001 (Ley 3/2001, de Pesca Marítima del Estado)

OCDE Spanish Review of Fisheries 200-2001 and OEDC Fisheries statistics.

SWEDEN

Industry snapshot

- Total fleet approximately 1,600 vessels, 79% of which are 12 m and under
- Swedish vessels land 262,272 tonnes with a value of 87.4 million €
- By weight (and value), landings into Sweden by national fleet are: demersal 70% (57%), pelagic 29% (24%), shellfish 1% (19%)
- Swedish vessel landings have declined by approximately by 1/3 over 10 years by weight, but the value is relatively unchanged.
- Number of fishermen is approximately 1,900

(2004 figures)

OVERALL AIM OF NATIONAL FISHERIES MANAGEMENT PLANS

The fish resources should be managed in a long-term and sustainable way according to the precautionary principle the ecosystem approach.

PRINCIPAL OBJECTIVES

The natural resource and a well functioning ecosystem are needed for the fishery, and should be the base for restrictions. This can be accomplished by long term TAC's, multi species models and ecosystem-based management and long-term management plans, all this with the precautionary principle in mind.

A change in both size and structure of the fishing fleet is needed. The capacity and effort should be adjusted to the fish resources. The technical improvements should be taken into account when changing the size and structure of the fishing fleet.

To strengthen the local community and the socio-economic values of fishery, the conditions for the fishing tourism should be improved.

SOME KEY ELEMENTS OF OUR PLANNING

- Reduce the size, capacity and fishing effort of our national fleet by more effective political steering.
- Conduct a more selective fishing on mature fish with minimal by-catch and discharge.
- Improve the control of fisheries, for example landings, fishing methods and number of vessels.
- Increase the reliability of fishery science and respect scientific advice.
- The government subsidies to the fishery should be more selective. Instead of a direct subsidy, that is the case today, it should be selected in favor for: 1. Reduction of the fishing fleet capacity, 2. Development of more ecological aquacultures and fish products, 3. Protection of aquatic flora and fauna, 4. Sustainable development of local communities.
- Have a more liberal trade with third country, to be able to meet the demand of fish and fish products within the union.
- Develop new structures and collaboration on national, regional and EU scale. To create more effective forms of management. The coastal waters should for example be managed on a more regional scale, where the local community is part of the management.
- The current legal rules for fishery should be revised to support the ecosystem based approach.

UNITED KINGDOM

Industry snapshot

- Total fleet approximately 6,600 vessels, 67% of which are 10m and under
- UK vessels land 653,000 tonnes with a value of £513m (755M euro)
- By weight (and value), landings into UK by national fleet are: demersal 34% (41%), pelagic 39% (16%) and shellfish 27% (43%)
- UK vessel landings have declined by approximately a quarter over 10 years by weight, but value is relatively unchanged

OVERALL AIM OF NATIONAL FISHERIES MANAGEMENT PLANS

A fishing industry that is sustainable, profitable and supports strong local communities, managed effectively as an integral part of coherent policies for the marine environment.

PRINCIPAL OBJECTIVES

Secure the management of fish stocks as an important renewable resource, harvested to optimise long term economic returns, to ensure that stocks are fished at biologically sustainable levels, discards are minimised and the marine environment as a whole is safeguarded.

Fisheries and the wider marine environment to be jointly managed within the framework of sustainability, as part of an integrated marine management system where environmental, social and economic objectives are managed together to achieve clean, safe, healthy, productive and biologically diverse oceans and seas.

SOME KEY ELEMENTS OF OUR PLANNING

- We support the objective of a 'large stock' strategy, wherever possible, consistent with our international commitments on achieving maximum sustainable yield in fish stocks. We are developing measures to restore depleted fish stocks and protect vulnerable marine species and habitats.
- To achieve a sustainable catching sector and minimise environmental impacts the size and capacity of our fleet needs to be balanced against long term fishing opportunities in a way that recognises the potential impacts on fishing communities.
- We aim to improve the environmental performance of fishing activities to encourage and increase stewardship by the catching sector of the marine environment.
- We need to promote high levels of confidence in the catching sector that lead to long term investment in innovation and technology, and provide conditions in which the fisheries industry is profitable in the long term.
- Independent, high quality science is a fundamental part of our fisheries management system. We want to improve our understanding and decision-making by maintaining and enhancing marine fisheries science. We want to increase stakeholder involvement in the conduct of fisheries science in order to build trust and confidence in the system.

Further details are available from:

Securing the Benefits: www.defra.gov.uk/fish/sea/sfp/index.htm

Charting a new course: <http://www.defra.gov.uk/fish/sea/sfp/newcourse.pdf>

A Sustainable Framework for Scottish Sea Fisheries:

<http://www.scotland.gov.uk/Publications/2005/07/07105456/54577>

Annex 3. MARIFISH- WORKSHOP 1: Drivers for Fishery Management questionnaire

1. About you

1.1 Which of the following best describes you (check all that apply)?

- Fishery manager
- Fishery policy advisor
- Fishery science programme funder
- Fishery scientist
- Other – please specify

1.2 How long have you been involved in fishery management?

- 0-3 years
- 3-5 years
- 5-10 years
- More than 10 years

2. Your national fishery policy

Does your country have a fisheries strategy or policy document (e.g. A sustainable framework for Scottish sea fisheries? (<http://www.scotland.gov.uk/Publications/2005/07/07105456/54577>)). Can you give the reference.

What are the main principles of your fisheries strategy/policy?

3. Importance of fishing

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers

| | | Disagree | | | | Agree | | |
|-----|---|----------|---|---|---|-------|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3.1 | Fishing in my country is treated as a high priority in government | | | | | | | |
| 3.2 | The fishing industry is crucial to the economy of my country | | | | | | | |
| 3.3 | In my country fishing is only important to the economy of local communities | | | | | | | |
| 3.4 | Fishing is important part of the culture of my country | | | | | | | |
| 3.5 | The fishing industry in my country is important to the social fabric of remote communities | | | | | | | |
| 3.6 | Fisheries policy in my country is influenced by international relations with other countries | | | | | | | |
| 3.7 | A certain amount of environmental damage is acceptable in order to create a profitable fishing industry | | | | | | | |

Any other reasons that make fishing important in your country?

4. Drivers

| | | Disagree | | | | Agree | | |
|-----|--|----------|---|---|---|-------|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4.1 | Fisheries policy in my country is driven entirely by EU treaties and regulations | | | | | | | |
| 4.2 | An efficient and profitable fishing industry is a | | | | | | | |

MARIFISH: Work Package 1. D1.4a Report identifying fisheries management drivers

| | | | | | | | |
|------|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | high priority in my country | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.3 | It is important in my country to ensure an equitable access to shared stocks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.4 | Environmental concerns related by fishing are an essential part of fishery policy in my country | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.5 | International treaties, such as the WSSD in Johannesburg are more important in determining fisheries management in my country than domestic pressures | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.6 | Pressure from environmental groups has no influence on the management of fisheries in my country | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.7 | In my country the fishing industry has a large influence in fishery management | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.8 | It is important to protect the environment even if this reduces the profitability of the fishing industry | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.9 | Social policy is plays an important part in my country's fishing policy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.10 | Adverse stakeholder reaction to management plays a role in determining fishery policy in my country | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.11 | Stability in the fishing industry should be given higher priority | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.12 | The Precautionary Approach is of minor importance in fishery policy in my country | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.13 | Climate change is unlikely to affect the management of fisheries | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.14 | The supply of fish from our industry as a source of food is a major consideration in our country | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.15 | The Ecosystem Approach should be at the heart of fishery policy | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.16 | Regional management of fisheries would be an important step forward | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.17 | Wider public opinion has a large influence on fisheries policy in my country | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Any other major drivers in your country?

5. Management

| | | Disagree | | | | Agree | | |
|------|---|----------|---|---|---|-------|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5.1 | Fishing quotas are more important for sharing the resource than for conserving stocks | | | | | | | |
| 5.2 | The size of fishing fleets in Europe is about right | | | | | | | |
| 5.3 | Closed areas and other area restrictions are useful in managing fisheries | | | | | | | |
| 5.4 | Fishery management would be improved if the correct economic incentives were created | | | | | | | |
| 5.5 | No take zones are better for nature conservation than fishery management | | | | | | | |
| 5.6 | Technical measures (e.g. mesh size) have been successful in managing fisheries | | | | | | | |
| 5.7 | Multi-annual catch limits would improve fishery management | | | | | | | |
| 5.8 | The fishing industry should bear the full costs of the management process | | | | | | | |
| 5.9 | Management plans are needed for all European fisheries | | | | | | | |
| 5.10 | Decommissioning of fishing vessels should be a top priority to reduce over-capacity in Europe | | | | | | | |
| 5.11 | Economic instruments should be more widely used to manage the fishing industry | | | | | | | |
| 5.12 | Limiting fishing effort (e.g. days-at-sea) is a good way to manage fisheries | | | | | | | |

5.13 Economic instruments are more acceptable politically than biologically based regulations

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
|--|--|--|--|--|--|--|--|

Any other comments?

6. Expert advice

| | | Disagree | | | | Agree | | |
|-----|---|----------|---|---|---|-------|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6.1 | Scientific advice has a large influence on the management of fisheries | | | | | | | |
| 6.2 | Fisheries management requires collaboration between scientists and fishermen | | | | | | | |
| 6.3 | ICES advice is respected by managers as reliable and relevant | | | | | | | |
| 6.4 | Economic advice should play a larger role in influencing fishery policy | | | | | | | |
| 6.5 | Scientists should have a bigger role in determining fisheries policy | | | | | | | |
| 6.6 | Uncertainties in the science undermines good fishery management | | | | | | | |
| 6.7 | Economic considerations are more important than biological factors in managing the fishing industry | | | | | | | |
| 6.8 | Ecosystem based advice will have no effect on the way fisheries are managed | | | | | | | |

Any other comments on expert advice?

| |
|--|
| |
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7. Public Understanding

| | | Disagree | | | | | Agree | |
|-----|--|-----------------|---|---|---|---|--------------|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7.1 | Scientific advice is widely understood by managers and the public | | | | | | | |
| 7.2 | Understanding of science by fishermen has no effect on the success of fishery management | | | | | | | |
| 7.3 | The public have a good understanding of the issues affecting fishery management | | | | | | | |
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| Any other comments? | |
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