Sea Fisheries Protection Authority

Submission on the Green Paper on the Reform of the Common Fisheries Policy

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Background to this submission

The Sea-Fisheries Protection Authority (SFPA) was established on the 1st of January 2007. The SFPA was set up as an independent fisheries control agency and is charged with the enforcement of fisheries legislation and the European Common Fisheries Policy (CFP).

The SFPA has a dual regulatory role, firstly in seafood safety and secondly in sea fisheries conservation. Our role in sea fisheries conservation is to ensure compliance with Irish legislation and legislation which gives effect to the European Union's Common Fisheries Policy. The objective of the Common Fisheries Policy is to 'ensure exploitation of living aquatic resources that provides sustainable economic, environmental and social conditions' in other words to secure a profitable future for the fishing industry.

The SFPA's regulatory role in seafood safety is to protect public health and consumers' interests by ensuring that seafood consumed, distributed, marketed or produced in the State meets the highest standards of food safety and hygiene and enjoys the highest reputation in the market place.

The SFPA is committed to moving forward with the industry and is mindful of its responsibility to provide guidance and help whenever possible and at all time promote a culture of compliance.

The submission attached follows the sequence of the chapter headings of the Commission Green Paper on Reform of the Common Fisheries Policy.

1. Fishing Fleet overcapacity

1.1. Fishing fleet overcapacity, whether on a National scale or on a European scale, has a direct influence on the general level of compliance with the rules and regulations of the Common Fisheries Policy.

1.2. The FAO **Code of Conduct for Responsible Fisheries**[1] recommends that; "*States should prevent over fishing and excess fishing capacity and should implement management measures to ensure that fishing effort is commensurate with the productive capacity of the fishery resources and their sustainable utilization*".
The European Court of Auditors in their **Special Report of 2007**[2] recommend that; *"The efforts made by the Member States and the Commission in order to reduce pressure of excessive fishing must be reinforced by setting ambitious targets for capacity reduction and adopting socio-economic measures to benefit populations which make their living by fishing"*.

1.3. Within the European Union overcapacity in the fishing fleet contributes significantly to the over-exploitation of key commercial stocks and inhibits the recovery programme for fish stocks already damaged through over-fishing.

1.4. On a National scale overcapacity in sectors of the Irish fleet creates problems when it comes to the distribution of the National TAC's on a monthly basis. On occasion the monthly allocation possible for some species is not economically viable to catch and can lead to the situation where compliance with the limits imposed may not be commercially feasible.

1.5. From a regulatory perspective a better balance between the available fishing opportunities and the catching capacity of the fishing fleet is highly desirable as it would be more feasible to fish legally for profit.

1.6. The SFPA has no view on how the overcapacity of the fishing fleet should be reduced (decommissioning, economic forces, transferable fishing rights, etc.) but is of the view that a reduction in the current over capacity is an essential part of building a culture of compliance in Ireland and in the European Union generally.

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[1] Food and Agriculture Organization of the United Nations,
Rome, 1995, ISBN 92-5-103834-1

[2] Special Report No 7/2007 on control, inspection and sanction systems relating to the rules on conservation of Community fisheries resources together with Commission's replies
(2007/C 317/01)

2. Decision-making framework on core long-term objectives

2.1. In general, the greater the participation of stakeholders in the decision making process, the greater the potential for the desired outcome of the decision made being achieved.

2.2. There is a general absence of stability with regards to regulations implementing the CFP in so much that year after year a succession of regulations emerge, each modifying or replacing those that went before.

A period to stability would be of benefit to the Industry generally where fishers and others can have some surety that the regulations adopted will have a minimum shelf-life.

The constantly changing regulations lead to uncertainty on the part of both stakeholders and regulators. The burden of cost to meet the constantly evolving regulations to both the regulators and stakeholders should not be under estimated.

2.3. The existing Producers Organisations (POs) and Regional Advisory Councils (RACs) must have a central role in bringing practical ideas and informed thinking into the decision-making arena.

2.4. Consideration should be given to establishing an effective platform to disseminate information on initiatives for management or technical measures. Established industry bodies such as Regional Advisory Councils (RACs) and Producer Organisations (POs) can have a leading role in this area through specialist working groups or committees.

2.5. The reformed CFP should provide for more structured engagement between the RACs and the Regulators to ensure the measures adopted are both practical and enforceable and provide for a harmonised control system across Member States.

3. Encouraging the Industry to take more responsibility for implementing the CFP

3.1. Rewarding Member States for having effective control systems in place.

3.1.1. Under the Treaties, the European Commission is responsible for ensuring that Community law is correctly applied.
At present Community law provides for the sanction of individual Member States where there is apparent failure by that Member State to fulfil an obligation under Community law.
The Commission initiates whatever action it deems appropriate either following the receipt of a complaint or following the detection of an infringement by their own Inspectorate.

3.1.2. There is a common perception that the current system *"is all stick and no carrot"*. Fishers frequently complain of the lack of a level playing field in the application of Community Fisheries Law (such complaints are not confined to Ireland).

3.1.3. In a case where a Member State make a genuine effort to put in place an effective system of fisheries control the fishers operating in that Member State can end up being at a commercial disadvantage in comparison to the fishers of a Member State where the fisheries law is not so rigorously applied.

3.1.4. This commercial disadvantage can be further compounded by damage to fish stocks done by the non-compliant fishers, sometimes leading to the collapse of key commercial fisheries.
This scenario applies particularly in fisheries where the participants are from many Member States, the waters West of Ireland being a prime example within the EU.

3.1.5. The SFPA recommends that consideration be given to introducing a system for rewarding Member States who have a robust system of fisheries control in place.
This assessment would emerge following independent audit and inspection by Community Fisheries Inspectors.

3.1.6. Increases in the allocation of fishing effort or fisheries quotas are obvious possibilities to be explored. The allocation of available funding for scientific research or market support might be other avenues to be considered as rewards for responsible fishing.

3.2. Greater incentives for the individual fisherman to comply with rules and regulations.

3.2.1. It can be argued that the current CFP penalises high performance by individual fishers in so much that the imposition of catch limits affects the most efficient fishers hardest. This is contrary to the norms in other industries.

3.2.2. The reformed CFP should provide scope for high performance within a structure that continues to have appropriate management measures in place such as catch limits or effort restrictions that protect the commercial stocks at sustainable levels.

Can policies be developed that allow greater scope for fishers to maximise the efficiency of their fishing operations while protecting fish stocks at viable levels?

3.2.3. The reform of the CFP should allow for individual fishers and groups of fishers to self-regulate to some degree. There should be greater provision to reward situations where fishing plans are put forward by fishers that incorporate additional voluntary conservation measures.

Voluntary conservation measures could include fishing plans that:

- Avoid fishing in known spawning areas at critical spawning periods,
- Use of mesh sizes greater than the minimum required,
- Adaption of fishing gear to improve their selectivity both to avoid the capture of unwanted species and of smaller fish,
- Voluntary restrictions on the deployment of static fishing gear.
- Recording of supplementary fisheries data for use in stock assessments,
- Voluntary closures of fisheries when market prices are low (rotating participation in certain fisheries can also achieve the same effect) to ensure the maximum value for the resource captured.

3.2.4. The SFPA recommends that consideration be given in the reformed CFP to oblige fishers from all Member States to comply with National measures adopted by a Coastal State to protect vulnerable fish stocks.

3.2.5. By way of example in Ireland we have legislation to protect stocks of Bass that prohibits Irish fishermen from fishing this species commercially. However these restrictions do not apply to the fishing vessels of other Member States operating in the Irish EZ.

3.3. Control measures for Coastal EZ

3.3.1. Given the practical difficulties of monitoring catches at sea onboard fishing vessels and the importance of offshore fisheries within the 200 mile limit the SFPA recommends the consideration of a number of measures as part of the reform of the CFP that would go some way to address this problem.

3.3.2. Control measures conducted at sea are generally hampered by practical issues that arise from the cramped conditions frequently encountered when conducting these inspections of fish storage rooms. The SFPA recommend consideration of additional requirements to store different species retained onboard separately.

3.3.3. The requirement to store certain species separately should be extended to species not subject to multi-annual plans. This would increase the effectiveness and ease of the inspection of catches at sea.

3.3.4. The SFPA recommends consideration of an additional requirement to store catches made outside Community waters from those made inside the 200 mile limit.

3.3.5. Fishing vessels operating in the EZ of another Member State should be required to carry contact details of the authority that issued the fishing authorisations in use so that inspection parties can confirm their fishing entitlements if required.

4. Developing a Culture of Compliance

4.1. Simplification of rules and regulations

4.1.1. The current CFP is made up of:

- 36 Acts concerning Structural Measures
- 74 Acts on the organisation of the Market
- 6 Acts concerning State aid
- 508 Acts concerning the conservation of resources
- **Total of 624 Acts**[3]

4.1.2. Within the existing Acts there are variations on the application of mesh size limits, minimum fish size limits, rules for calculating live weight against processed weight, tolerances for the estimation of different species, etc.

4.1.3. In effect this amounts to a legal minefield of complex regulations the full understanding of which is challenging for regulator and regulated alike.

4.1.4. Simplification is required both through consolidation of existing regulations and the rational alignment of others.

4.2. Greater transparency of the results of assessment missions carried out by the EU Commission (and by the CFCA) in the Member States.

4.2.1. DG MARE conducts missions to all coastal Member States to evaluate compliance with the CFP.
These missions have been made more effective over recent years through the adoption of more defined mission protocols but there remains the issue of a lack of transparency regarding the mission reports.

4.2.2. The SFPA is also audited by DG SANCO (missions to Member States and 3rd Countries conducted by Veterinary Inspectorate from the Food and Veterinary Office (FVO)).
Following the completion of the mission the FVO exchanges a draft report with the Member State being evaluated and eventually a final report is produced which is **subsequently published openly** on the FVO website[4].

[3] Source European Commission website, October 2009
[4] Council Regulation 1224 of 2009 proposes the posting of these mission reports on the **secure** part of the Commission websites.

4.2.3. These reports are accessible to all Member States and provide transparent information on the relative application of Community Food Safety law within the European Union.

4.2.4. There is no equivalent transparency for evaluations carried out by DG MARE on the application of Community Fisheries law.
This leads to a strong perception that there is unfairness regarding the application of the CFP within the EU. This in turn undermines the commitment to compliance generally.

4.3. Improving systems for the exchange of information between Member States on catch entitlements and TAC uptakes.

4.3.1. Under the current CFP structures it is not possible for the regulatory authorities in the different Member States to have access to up-to-date information on the uptake of Total Allowable Catch (TAC) entitlements by other Member States and to entitlements of individual fishers to a portion of their national TAC.

4.3.2. As there are a number of different systems in place to distribute National TACs in the different Member States it is not possible to know whether an individual fisher is entitled to one or more quota species and where they have an entitlement what the actual limit (in KGs) of the entitlement is.

4.3.3. It would be possible to live with these limitations regarding inspections at sea if there were equivalent systems of control in the ports of the Member States. Unfortunately this is not the case[5].

4.3.4. One effect of this lack of information is to prevent the application of a risk management approach for selecting individual fishing vessels for inspection as laid down in Council regulation 1224 of 2009 (Title II, Article 5).

4.3.5. With the emergence of Electronic Reporting Systems (ERS), required on the larger fishing vessels from January 2010 there is an even stronger case for systems for the routine exchange of detailed information on the entitlements of an individual fishers of their national TAC.

[5] Special Report No 7/2007 on control, inspection and sanction systems relating to the rules on conservation of Community fisheries resources together with Commission's replies (2007/C 317/01)

4.3.6. This is a critical issue for Ireland as a significant portion of the EU's commercial fisheries take place within Ireland's economic zone (EZ) and these fisheries are exploited by fishing vessels from many Member States.

4.3.7. The current lack of real-time information contributes to the perception by Irish fishers that there is not a level playing field when it comes to the application of the CFP.

4.4. Differentiated fishing regimes to protect coastal fisheries

4.4.1. In recognition of the economic importance of coastal fish stocks and fisheries and their role in supporting stock recovery and stock sustainability it is recommended that consideration is given to establishing a "*coastal Member State exclusive control zone*" out to 24 miles from the Coastal State.

4.4.2. This innovation would allow the application of fisheries management measures suited to the particular conditions present off the Coastal State thereby protecting the commercial fish stocks present.
The management measures could then be applied equally to the fishers of all Member States operating within the *exclusive control zone* limit. This in turn would guarantee a level playing field for the fishers from all Member States while managing the fisheries sustainably.

4.4.3. The above recommendation follows on the already established "Biologically Sensitive Area" (BSA) model where an area of critical importance to the viability of certain fish stocks (Hake, Anglerfish and Megrim) has been defined and has its own management measures in place.
The "BSA model" has allowed for effective effort control that has in turn been an effective protection for the critical stocks. The review of the CFP should allow for the continuation of the BSA and the further application of this conservation model to other defined areas.

4.5. CFP Reform and Inshore Fisheries

4.5.1. Inshore Fisheries are unique in many regards; the size of fishing vessels, their range and catching capacity, the scale of the fishing gear used, the species targeted, the markets for the fish captured and the fishing techniques used all being examples. All these factors point to the need to have fisheries management regimes that are appropriate to inshore fisheries.

4.5.2. Remote coastal communities rely heavily on inshore fisheries and the incomes they generate.

Within a reformed CFP there should be provision for policies that recognise the unique nature of these fisheries and the special protection they require to be sustainable going forward.

4.5.3. The inshore fishery provides employment in areas where in some cases little or no alternative employment opportunities exist.

Given the importance of these inshore fisheries and their vulnerability to over-exploitation it is the SFPA recommends that access inside 6 miles should be generally restricted for to smaller fishing vessels below 15m in length.

4.5.4. It is also the SFPA view that pelagic vessels with Refrigerated Sea Water (RSW) fishing vessels should not be allowed to fish inside the 12-mile limit to avoid the risk of long-term damage to inshore fishery stocks.

4.5.5. Specific control measures need to be put in place to address certain fisheries where larger fishing vessels “enter” inshore to exploit fish aggregations to spawn.

Access by these larger fishing vessels into inshore waters can threaten the ecological integrity of such fisheries.

5. Making the most of our fisheries

5.1. Traceability and promotion of responsible fishers

5.1.1. Unrecorded catches of fish or “black fish” as they are commonly known, undermine the prices available to law abiding fishers.
Consumers are increasingly aware of the damage irresponsible fishing does and are tending to source their fish purchases from reputable sources.
The emergence of accreditation schemes for many fisheries is now a strong marketing asset.
On a global scale the recently introduced legislation to combat illegal, unreported and unregulated (IUU) fishing has brought the issue of traceability to the fore.

5.1.2. The current labelling requirements are extremely broad and give no useful information to either the customer or the control authorities (e.g. FAO 27 – North East Atlantic covers fish caught and landed between Spain and the north of Greenland).
The SFPA recommends consideration of an additional requirement to include information on the first port of landing of fish and fishery products on the labels of fish products.
The label information might also include details such as “Celtic Sea, Irish Sea”, etc.

5.1.3. This requirement would greatly support the monitoring of the movement of fishery products and allow the consumer to make an informed choice when buying their fish.
The information on the port of landing would be of commercial use at retail, catering outlets.

5.1.4. Such a requirement would also underpin quality assurance and conservation friendly schemes and foster the promotion of National and Local brands.
This in turn is the logical outcome of greater regionalisation of fisheries management measures combined with additional voluntary control measures.

5.2. **Reducing and eliminating discards;**

5.2.1. Discards represent a significant proportion of global marine catches and are generally considered to constitute waste, or the suboptimal use of fishery resources.

The FAO published an estimate of global discards in marine fisheries[6], indicating that 27 million tonnes, or approximately 27% of the global catch, were discarded annually.

5.2.2. Discards arise:

- where unwanted catches of various non-target species occur due to the poor selectivity of the fishing gear used

or

- where fishers are obliged to discard fish because of regulations limiting the amount of fish they can retain onboard or other regulatory limitations apply such as minimum landing sizes.

5.2.3. International papers, including FAO International Plans of Action (IPOA's), Natura 2000, the Kyoto Declaration and the Code of Conduct for Responsible Fisheries (CCRF) have all highlighted the need to reduce or minimise discards.

These studies make the point that the practice of discarding fish which are dead or which will inevitably die, is unsustainable, ecologically unsound and unethical (Hall, 1996).

5.2.4. The general consensus on the way forward embraces key principles endorsed in the Code of Conduct for Responsible Fisheries:

- harvest/capture strategies should reduce or eliminate discards

and promote greater use of existing discards.

5.2.5. In many cases it is accurate to say that control measures may actually provide incentives to fishers to discard fish despite the intended objective of the technical measures being to minimise the overall impact of the use of fishing gears on fish populations (ICES, 2003; Cappell, 2001).

5.2.6. Part of the solution to the discard problem might be consideration of allowing a fisher to retain a percentage of by-catch on board to minimise the amount of fish discarded.

[6] Alverson et al, 1994

However such provisions risk encouraging the deliberate targeting of fish where there is no quota (Cod being a good example) or taking juveniles with high monetary value such as hake.

5.2.7. The problem of discards will not be solved by a single approach but rather by adopting a range of methods with the common goal of reducing the amounts of fish discarded by EU fishing fleets.
For example the use of more selective fishing gears has proven successful in reducing/eliminating the capture of unwanted species.

5.2.8. Complex technical control measures are not always the answer and a more practical approach of it may be more effective.
In this regard greater use of incentivised self-imposed measures may pay dividends. For example fishers may be happy to use larger meshes if "compensated" by having more effort days.

5.2.9. A reformed CFP should encourage Fishers plan their fishing operations with specific conservation objectives in mind as well as meeting the commercial imperatives.
Such planning might include giving consideration of what fishing gear they use (minimise discards while lowering fuel consumption) and where and when they should fish bearing in mind as fish stocks become more plentiful they become less expensive to capture.

5.2.10. Consideration should be given as to whether in special cases fishers might be allowed to land catches in excess of their individual quota (with associated restrictions to avoid abuse by individual fishers) and to avoid overshooting the Total Allowable Catch assigned to the Member State.
Such restrictions might include alternative strategies such as the by-catch going to fish meal, fertilizer production or for human consumption.

5.2.11. The SFPA recommends that the reform of the CFP should provide for a combination of measures ranging from control measures such as real-time closure, technical measures as gear selectivity and selection, incentivised self-imposed measures and the creation of new commercial markets for fish previously discarded.

6. Recommendations to reduce and/or minimise discards;

6.1. Encourage pilot studies across a broad range of themes:

6.1.1. To investigate the effectiveness of modifications to fishing gear to reduce unwanted by-catch of fish or to improve the selectivity of operations.

6.1.2. To introduce or expand fishing gear trials of those fishing gears proven to reduce discards in other fisheries with a view to adapting these for use in specific EU (and Irish) fisheries.

6.2. Encourage research into technological innovations that:

6.2.1. Promote gear selectivity,

6.2.2. Improve catch monitoring and fishing gear performance e.g. image recognition software to give better information on the species of fish being captured and the performance of fishing gear.

6.2.3. Improve data collection and dissemination of fisheries data for real-time management purposes.

6.3. Fisheries Management measures

6.3.1. Incentivise the introduction of selective fishing gears to fisheries to address any economic losses arising from management measures: examples might include;

- Fishing Vessels permitted to operate with more than one quota. Conditional usage based on real-time management capability through electronic reporting system.

- More than one fishing gear type allowed per trip which will fishing vessels the means to target a range of species and allow fishers to take discard avoidance measures when they encounter fisheries where significant discards occur.

6.3.2. The National Quota Management System should retain contingency quota to be made available for fishing vessels using discard reduction strategies.

6.4. Marketing Measures

6.4.1. Explore opportunities for new markets of by-catch species

6.4.2. By-catch species sold and money raised to be re-invested into funds for down time periods or periods where stocks are scarce or vulnerable. This process has been used in Norway

6.5. Relative stability and access to coastal fisheries

6.5.1. The review of the CFP must ensure the continuation of the Hague preferences given their importance for the Irish fishing industry.
The Hague preferences go some way in redressing the perceived imbalance in fishing opportunities as distributed between Member States and are essential to ensure the Irish fishing fleet have viable fishing opportunities to operate from.

6.6. Proposals for CFP reform related to recording of catches and setting of TACs;

6.6.1. Greater inclusion of input from fishing industry representatives on quota management where their knowledge of the location and time where fish are caught can be used to protect the fish stock in question.

6.6.2. Additional conditions to temporarily close an area to all vessels in the event of a large catch of juvenile fish or fish of a threatened or endangered species in that area.

6.6.3. Individual Transferable Quotas; First introduced in Iceland in the early 1980s, Individual Transferable Quotas (ITQs) are now used in many countries worldwide.
It is seen by some commentators as a method of reducing fleet capacity and removing the biggest problem within European fishing: that of fleet overcapacity.
In Iceland and New Zealand the ITQ has lead to consolidation of the industry into the hands of a small number of owners controlling the majority of the fleet.
It has led in some instances to the national resource of a country being controlled from overseas, and the host country receiving little or no return from its resource.

6.6.4. From a purely economic perspective, ITQ systems maximise the financial return from fishery; however from a socio economic point of view, ITQs can result in fewer jobs in coastal communities and a reduction in the food security that the EU was originally established to ensure.

On balance the SFPA considers the adoption of ITQ as a system of managing fishing opportunities as having the potential to creating more problems than it might solve.

7. Integrated Maritime Policy (IMP) for the European Union

7.1. The case for IMP

7.1.1. The population growth in coastal areas has impacted on environmental sustainability due to increased economic activity and use of marine resources. The EU has recognised that the current approach of compartmentalised policy development and decision-making does not facilitate adequate management of maritime resources.

A multi-sectoral and interlinked approach to maritime policy development has been proposed through the development of an Integrated Maritime Policy (IMP).

The EU has proposed a number of projects as part of an action plan, these deal with the areas of transport, research, maritime spatial planning, a review of EU labour law with regard to fishing, elimination of pirate fishing and high seas bottom trawling and climate change[7].

7.1.2. The Commission has published guidelines for the development of an IMP, best practice in governance and stakeholder involvement[8]. The guidelines encourage member states to develop a national IMP, as this takes account of the reality that different approaches are required to adapt to specific challenges at regional level.

The experience of countries who have already adopted IMP e.g. Canada, Australia and Norway, has shown that co-ordination at national and regional level is preferable to centralisation.

7.1.3. The areas of marine surveillance, maritime spatial planning and access to comprehensive data and information are identified as of key importance to achieving an integrated policy framework.

7.1.4. The Commission have already proposed the provision of a surveillance system which would bring together existing monitoring and tracking systems used for security, environmental monitoring, fishery control and other law enforcement activities.

7.1.5. Maritime spatial planning is required to address the challenges posed by increased use of the sea by competing sources e.g. transport, leisure, fishing and energy production.

[7] COM(2007) 575, An Integrated Maritime Policy for the European Union
[8] COM(2008) 395, Guidelines for an Integrated Approach to Maritime Policy

7.2. The interaction of the Common Fisheries Policy and an IMP

7.2.1. The Marine Strategy Framework Directive[9] and the Habitats Directive[10] are the legislative background for the environmental focus of an IMP.
These directives provide a basis for implementing an ecosystem approach to the marine environment and establishing a network of Marine Protected Areas.
The CFP has a stated aim of ensuring the integration of environmental concerns into fisheries management[11].

7.2.2. The SFPA agrees with the CION view that the integration of fisheries management into an ecosystem approach requires the development of systems to achieve an understanding of the direct and indirect impacts on fish stocks and their environment.
Through this knowledge a strategy can be developed to achieve the restoration of all fish stocks to Maximum Sustainable Yield (MSY) by 2015.

7.2.3. There are issues which need to be addressed as part of the reform of the CFP to achieve a realistic ecosystem approach to fisheries management. These issues include:

7.2.3.1. Data Transfer: Structures and protocols are required to facilitate the dissemination of available data on fishing activities so as to provide the best available knowledge on an ecosystem.

7.2.3.2. Discards: The issue of unwanted by-catch and 'high grading' of fish discarded at sea needs to be addressed as part of IMP.

7.2.3.3. Destructive fishing gear: There is a requirement for less destructive fishing practices, in particular the issue of the use of bottom gear impacting negatively on seabed habitats.

7.2.3.4. Fishing pressure: The size of the European fleet currently has a catching capacity that exceeds the available resource. The main task for the commission through the CFP is to reduce fishing effort to sustainable levels.

[9] Council Directive 2008/56/EC
[10] Council Directive 92/43/EEC
[11] Regulation 2371/2002

7.2.4. Recommended reforms of the CFP with reference to IMP;

7.2.4.1. Increased use of the European Fisheries Fund and quota incentives to promote sustainable catching and marketing of fish.

7.2.4.2. Better definition of ecological, economic and social sustainability objectives

7.2.4.3. More use of RACs and regional groupings to achieve integration of IMP with aims and future reforms of the CFP.

7.2.4.4. The increased use of Marine Protection Areas e.g. Development of no-take zones for nursery areas and protection of juvenile stocks.

7.2.4.5. Examples of good practice in other fisheries i.e. use of Black box fishing vessel monitoring technology may supersede European requirements for less effective monitoring systems. In this example the more frequent reporting frequency provided by the Black Box system is more useful in small scale fisheries.

Annex 1 - Case Studies related to the reduction of discarded fish

Pelagic Fisheries for North Sea Mackerel and Herring

Discards occurred in North Sea mackerel and herring fisheries as a result of high grading. This was a consequence of incidental catch of small sized target and non-target species. Also the processing systems onboard vessels were unable to handle small fish. Reductions in quotas for both North Sea mackerel (*Scomber scombrus*) and herring (*Clupea harengus*) and the restrictions on by-catch levels have to lead an investigation into technical measures to improve selectivity.

A study implemented thorough the Scottish Industry/Science Partnership (SISP) (Laurenson, & MacDonald, 2008) looked at exclusion devices to increase the average size of mackerel and reduce by-catch percentages of herring. Impetus for the study was provided by the positive results form the use of a prototype selectivity grid, trialled on the FV Zephyr LK394, when compared to catches by conventional trawls.

The project was undertaken during the autumn 2007 mackerel season with the 2 pair trawlers and 2 single trawlers involved. Grids were designed and manufactured by Swan Net-Gundry Ltd. NAFC Marine Centre and SEAFISH provided the scientific input and Fisheries Research Service (FRS) undertook some of the data analysis.

Discarding in the English Channel

The Centre for Environment, Fisheries and Aquaculture Science (CEFAS) catch and discard data collection programme has been conducting sampling operations on English and Welsh registered fishing vessels in the International Council for the Exploration of the Sea (ICES) sub area VII since 2002. Within this sub area, these vessels were found to mainly operate in the English Channel, Western approaches, Celtic and Irish Sea.

Analysis was conducted of 3,643 hauls from 306 trips aboard commercial fishing vessels (142 different boats) >10m between 2002 and 2005. During the study period an estimated 186 million (72,000 t) fish and cephalopods were caught every year of which 117 million (24,500 t) were discarded. Beam trawlers and otter trawlers were together responsible for more than 90% of these discards. In all, 182 fish and cephalopod species were caught, yet just 10 species constituted more than 50% (61.5million) of the annual discards. It was estimated that

discarding levels in the region are higher (1.5×) than recently reported by the FAO.

The data obtained from this study suggests that in excess of 30% of the fish caught during the study period was discarded. Such high levels of discards in this case can be attributed to the EU quota systems and associated market drivers. This fishery would benefit from gear selection techniques and innovative control measures with the possibility of introducing a total or partial discard ban.

Scottish Demersal Whitefish Fishery

Several Scottish demersal fisheries are mixed fisheries targeting cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus)*, whiting (*Merlangius merlangus*) *Nephrops*, monkfish (*Lophius* spp.) and flatfish. Gear type can have a significant effect on the composition of catch and maturity of individual species. Fishing operations tend to focus on a target species resulting in additional by-catch and discard species. Quota limits, market conditions or management measures e.g. minimum landing size (MLS) impose constraints on the quantities of each species that are landed.

Scottish Industry/Science Partnership (Park *et al*., 2008) looked at a suite of technical measures modifying gear design to address the problem:

- Square mesh panel inserted into top sheet of trawl net;
- Separator Grid inserted into trawl net at mouth of codend;
- Inclined panel or raised footrope modifications to trawl nets to avoid the catching of benthic fish species; and
- Horizontal separator panel to segregate some species during fishing operations.

The different fishing gear designs were applied to a number of different fisheries and the views on their success at reducing discards were collated from the fishing industry. For the main whitefish trawl fishery, a mesh size range of 120+mm is used. Skippers reported that it is successful for avoiding discards for most species such as haddock, whiting, hake (*Merluccius merluccius*), flatfish, monk and saithe (*Pollachius virens*). However, it was too small for cod for optimum exploitation and while this stock is recovering.

Trials were planned for new designs e.g. the “Eliminator” trawl in 2008 as part of a SISP initiative which would reduce cod mortality. The “Eliminator” trawl was developed in the US (Beutel *et al*., 2006) and trialled by the fisheries–science

partnership between National Federation of Fishermen's Organisations (NFFO) and CEFAS in England in North Sea. The trails were successful, with clean catches of haddock and whiting and overall reduction in discards by 80% and cod by 90%.

A trawl with an additional horizontal panel above the belly sheet is being developed in a research project in Scotland (Ferro et al., 2007). It separates haddock and whiting into a top compartment and allows cod to be subjected to a different selection process in the lower compartment. Overall the most popular device to improve selectivity is clearly a square mesh panel (SMP), if put in the correct place and at the correct mesh size

Incentives have been provided by management measures thorough the Conservation Credits Scheme (CCS) which was implemented during 2008. The CCS aims to maintain the balance between sustainability of stocks and economic viability of the fleet by promoting further development of selective gear.

Other control measures which have been investigated include incentives to obtain more fishing opportunities. A study was implemented on demersal trawlers in 2007, in which up to 100 observer days were available to monitor the levels of catches of three key species; cod, sole (*Solea solea*) and plaice (*Pleuronectes platessa*). The study was designed as a pilot project to find out the overall feasibility of running a full observer programme in the future which could verify if catches of each of these key species was less than 5% of the total catch by weight. Such a programme would give fisherman extra days at sea (EC Regulation 41/2007), Annex IIa Paragraph 8.1 (d). The study was voluntary and as in incentive to take observers funding was provided by the Scottish Executive Environment and Rural Affairs Department (SEERAD) who covered all the costs of the observer deployments and their time at sea. There was therefore no cost to the vessel, only the potential benefit of obtaining the extra days at sea.

The one gear type rule has also been relaxed for seiners in mixed fisheries but excluding cod on West coast grounds and excluding cod and haddock in the North Sea. They have been granted a derogation during 2008 from the one net rule imposed in February 2008, allowing them to carry a net with a 100mm codend (with 90mm square mesh panel) as well as a 120+mm mesh net, under certain conditions

Other control measures implemented through the CCS include effort control: days at sea arrangements in 2008 for demersal trawls of mesh size 70-99mm and 100mm & over (not beam trawls). These permit the vessels to:

- Bring its allocation of days up to its 2007 allocation;
- Allow a vessel to be eligible to operate under hours at sea rather than days, based on its allocation of days being multiplied by 24 hours; and
- Allow a vessel to apply for the enhanced measures to be developed subsequently by the Conservation Credits Steering Group (CCSG).

Beam Trawling in the North Sea

Total annual quantity of discards discharged into the in the North Sea is estimated at 800k to 950k tonnes (Garthe *et al*., 1996). This roughly one third of total landed weight and one tenth of estimated total biomass of fish in the North Sea ref 11. Between 60% and 70% of discarded material comprises of roundfish and flatfish species, benthos and elasmobranchs and offal.

Three fisheries are considered responsible for the majority of these discards. All are demersal trawl operations: flatfish beam trawl, targeting plaice and sole, Nephrops otter trawl and roundfish otter trawl targeting cod, haddock and whiting (Lindeboom and Groot, 1998).

The flatfish beam trawl fishery, has an estimated overall discard rate of 71% to 95%. Catches of discarded fish (dab (*Limanda limanda*) and plaice) can contribute as much to the total catch as target ones. Invertebrates can contribute several times the weight of target species. Discards for some invertebrates have been estimated as high as 60% to 70%; discard mortality for flatfish in the beam trawl is estimated at between 80% and 100% and for cod, haddock and whiting (Lindeboom and Groot, 1998).

The problem is been attributed to the use of the use of unselective fishing techniques resulting in a higher proportion of discards per unit effort; plus the failure to restrict fishing effort, which controls effort level and if unrestricted leads to a greater volume of discards.

Unselective fishing techniques persist as a result of industry's drive to maximise the potential economic yield per unit effort. This approach is influenced by four factors:

- The biology of the fished species.
- The ability to circumvent gear regulations.
- The effectiveness of landing size regulations.
- The perceived non-legitimacy in stock forecasts.

The biology of the fished species presents a problem particularly for mixed fisheries i.e. different species with different growth and maturity parameters are likely to be caught in the same gear. Therefore regulations (minimum mesh sizes) intended to reduce capture of juvenile fish of one particular species may result in viable target species escaping e.g. at 35cm (L50 with a 110mm mesh) less than 1% of cod are mature, while at only 27cm, around 90% of whiting are mature.

The impact of increasing MLS regulations at reducing discards is effective only when it is significantly different form desired sizes dictated by market forces. In the UK roundfish fishery, survey results have indicated that 98% of cod, 87% of haddock and 97% of whiting discarded are below marketable size (Cappell, 2001).

The reluctance to improve trawl selectivity has been further strengthened by the change that has occurred in the population structure of North Sea demersal stocks. Increasing dependence on newly recruited young fish would result in loss of revenue if larger mesh sizes were introduced.

The biological and economic constraints associated with increasing net mesh sizes have promoted the development of species-selective fishing methods which focus on the different behavioural reactions of commercial species to fishing gear e.g. separator trawls and grid systems. However, reluctance persists over the same concerns over loss of earnings and expense or perceived difficulties over gear performance. Overall the expected immediate loss to fishermen of marketable fish has inhibited the implementation of more selective gear.

Norwegian Fisheries

All major commercial Norwegian fisheries are shared with other states. The main fishing areas are the Barents Sea, the Norwegian Sea and the North Sea. Norwegian vessels target a large number of different fish species, in particular demersal species like cod, saithe and haddock, and pelagic species like herring and mackerel. Pelagic species constitute roughly 75% of annual landings. The Discarding Commission of 2004 estimate the figure to be between 5% and 10% will vary depending on fishery and technology in use. Discards in Norwegian fisheries are attributed to the practice of high-grading.

Norwegian policy is for a total discard ban. This ban evolved in 1985 from measures designed to control the Barents Sea capelin fisheries and was shaped as a consistent policy in 1988. The Norwegian emphasis is on preventing catches that are undersized, in excess of one's quotas, or in violation of by-catch regulations. The underlying principle is different from that of the European Union, where the focus is on illegal landings of fish.

Other control measures include the use of closures, temporary or permanent and applied when areas yield a high percentage of fish below MLS. The use of gear selectivity devices to reduce discards of non-target species or catches under MLS is implemented through technical measures.

The Norwegians have tried to mitigate against discards in mixed species fisheries by using joint quota systems for whitefish so that more catches of one species are permitted provided there are lower catches of another per vessel. Because of the overall quota system the incentive to high-grade has not been removed with the introduction of technical measures and restrictions.

The Norwegian system for managing stocks has been facilitated by market organisations that are highly receptive to performing tasks set by the government. The centralised, law-regulated structure for the first-hand trade of fish has made it fairly easy for the Norwegian government to establish administrative procedures for forfeiting catch and applying compensation schemes. The fishermen's sales organisations, originally established for the purpose of strengthening the market position of fishermen, have thus become also semi-governmental agencies in the implementation of resource management policies.

The Norwegian management model aims to align catch restrictions with fishing mortality. This implies that forfeited catch must be subtracted from the total Norwegian quota despite the fact that administratively forfeited catch is not

subtracted from the fisherman's individual quota. Making this system work requires efficient systems for monitoring fish landings and quotas. Today, the system functions reasonably well in the pelagic sector, where a centralised auction system ensures rapid electronic transfer of landing data. In offshore pelagic fisheries, the sum of individual quotas is set slightly below Norway's total quota in order to take forfeited catch into account (Gezelius, 2008). However, the system has yet to function adequately in demersal fisheries, which have less efficient procedures for transfer of landing data. There is also a need for improved computerised tools to allow more timely comparison of landing data with total quotas. These issues are currently being addressed in the Directorate of Fisheries (Gezelius, 2008).

Alaskan and United States West Coast Fisheries

The walleye (Alaska) pollock fishery in the North Pacific is the world's largest demersal whitefish fishery. Over 90% of landings are harvested by mid-water trawl and the fishery represents approximately 25% of United States landings by volume. Discards have been declining in the Barents Sea and Aleutian Islands (BSAI), Gulf of Alaska (GOA) fishery.

The reasons for these declines are closely linked to the management regimes for the BSAI/GOA fisheries. Some of the principal reasons for effective by-catch management are that:

- BSAI/GOA fish stocks are not over fished;
- There are strong incentives for by-catch reduction;
- Enforcement is effective;
- By-catch is cooperatively managed; and
- Fishery by-catch information is used as a real-time management tool.

Incentives are provided by closures when by-catch limits on crab, salmon and halibut are reached. Therefore fishers tend to avoid by-catch. Also by-catch of individual vessels is published; creating peer pressure on vessel operators if they persistently exceed by-catch limits.

Effective enforcement is achieved through 100% percent observer coverage which records all by-catch and discards: finfish discards are recorded by weight;

salmon and crab discards are recorded by number. Two observers on board each vessel sample 98.9% of hauls. Groundfish discards are less than 0.5%.

Enforcement is supported by management of the by-catch allocation through a voluntary/cooperative ITQ system operated by the Pollock Conservation Cooperative (PCC) and High Sea Catcher's Cooperative (Joint Report of the Pollock Conservation Cooperative and High Sea Catcher's Cooperative, 2002). Vessel operators actively cooperate with observers to ensure that discard records are accurate. Outputs are managed through a private firm specifically contracted to upload data twice a day and make available to operators in near real time, identifying by-catch "hotspots" and allowing vessels to move rapidly to grounds with low by-catch. The cooperative arrangement has forfeiture (penalty) clauses for breach of by-catch limits.

The benefits of the cooperative management regime have included:

- Improved processing yield (larger fish) and more time to search for larger fish (no "race for fish");
- Processing at optimum speed for product quality and yield (recovery rate);
- Reduced capitalization in vessels and processing equipment (although there was increased investment to vary product mix and meet market requirements);
- Substantial contributions to fisheries research;
- Reduced by-catch of unwanted species through movement to low by-catch areas; and
- Reduction of the olympic-style fishery (race for fish), reduction of over 30% in effort and increased economic rent generation.

A similar cooperative management system has been adopted by the Pacific Whiting Fish Harvesting Cooperative (PWCC). Members have achieved significant reductions in by-catch. Pacific whiting, like Bering Sea pollock, is harvested using mid-water trawl nets. By-catch rates for both fisheries are between 1% and 2%.

A major contributor to the reduction in by-catch is the fisher's ability to discontinue fishing in high by-catch areas without sacrificing harvesting opportunities. To help avoid by-catch "hotspots", PWCC members report catch and by-catch data electronically to Sea State, a private sector firm specializing in fisheries data collection and analysis. Sea State collates the data and reports back to PWCC vessels on a "real-time" basis, advising vessel captains to avoid areas

in which high by-catch is likely to occur. Because they do not have to race for fish, boats can take the time to move to areas with low by-catch.

The use of electronic monitoring was initially introduced to monitor incidental catches of sea birds in pacific long-line fisheries for halibut. Since then, the role of electronic monitoring systems (EMS) has expanded to quantify by-catch species in this fishery.

Hoki fishery in New Zealand

The hoki (*Macruronus novaezelandiae*) trawl fishery is one of New Zealand's most important commercial fisheries. Hoki is a deepwater fish caught by trawling at depths of 200m to 800m. A total discard ban is in operation. Total discards estimates for the period 2000-2001 and 2002-2003 ranged between 11,000 and 14,000 tonnes with non-commercial species accounting for approximately 90% of those discards. Hoki discards were estimated at between 600 and 2,100 tonnes and there was little discarding of other commercial species. Data from a previous study, covering the period 1990-91 to 1998-99 estimates discards to be between 2,400 and 5,600 tonnes. Therefore indications are that discards were decreasing.

Total allowable catches (TACs) are set based on maintaining Maximum Sustainable Yield (MSY). The quota management system (QMS) is based on an individual transfer quota (ITQ) system, which is provides access or rights to a proportional share of the TAC. ITQs may be bought and sold in an open market through a system of annual catch entitlements (ACE). ACEs are generated by multiplying the proportional ITQ by the annually available TAC. ACEs are separable from the ITQ shares and can be bought and sold independently – essentially ACE is the annually leasable form of ITQ and is traded separately.

The benefits to the hoki fishery in the short term have been an improvement in the processing yield available from larger fish, reduced by-catch levels and a more co-operative approach to harvesting the fishery. In addition, there are longer term effects arising from a co-operative venture approach which will continue to yield benefits into the future.

New Zealand has a relatively modest enforcement regime. The Ministry of Fisheries undertakes compliance activities both on the water and on-land. On-land activities are based on ensuring there is accurate and robust reporting of landings and Licensed Fish Receiver (LFR) transactions. At-sea activities include

limited surveillance, monitoring and investigations undertaken by Ministry fishery officers on board New Zealand military vessels and aircraft and a team of observers on commercial vessels.

Northern Prawn Fisheries in NAFO

(*Pandalus borealis*) trawl fishery is one of the most important fisheries of the NAFO area, in terms of catch quantity and value. A small mesh size is used and by-catch rates have historically been high (around 30%), with redfish (*Sebastes* spp.) typically forming the largest proportion. Vessels with prawn quota generally do not have any redfish quota and most by-catch is discarded. Fishing mortality from the prawn fishery negatively impacts on a separate target fishery for redfish.

This problem has largely been mitigated by the requirement for vessels to install sorting grids made mandatory in 1994. These sorting grids (known as “Nordmore Grid”) are inserted into nets providing an exclusion device which deflects fish out of the trawl, with minimal impact on the catch rate of prawns. The typical space between bars on the grid is 40mm. The result has been a decline in the proportion of by-catch from 33% in 1993 to 22% in 1994 and has had a large positive effect on the redfish trawl fishery, which is now a major fishery in the NAFO area.

Reduction in catch rates of the target species of prawn were largely outweighed by reductions in labour requirements due to cleaner catches and improved quality of the product, which had in the past been impaired by crushing from by-catch finfish.

Monitoring of effort, catches, in particular quantify by-catch and discards, and adoption of technical measures such as use of grids was largely achieved by the Northwest Atlantic Fisheries Organisation (NAFO) Observer Scheme. The Scheme was initially paid for by the EU but later (2003) the cost was paid for by the fishing industry. While the placement of observers is expensive and carries a significant economic burden, positive benefits that data reporting has improved, stock assessments are more accurate and fish stocks better managed.

The above case studies reaffirm the reality that innovation coupled with the proper control measures and a genuine willingness on the part of the stakeholders can help to alleviate the current unsustainable status of the discard problem within the EU.