EUROPEAN COMMISSION

DIRECTORATE-GENERAL FOR MARITIME AFFAIRS AND FISHERIES

LOT 2: ADMINISTRATIVE EXPERIENCE WITH EFFORT MANAGEMENT CONCERNING THE NE ATLANTIC

& PARTNERS

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FINAL REPORT

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NON-TECHNICAL SUMMARY

Introduction and background

There are three main types of management measures used to manage fisheries in the European Union. Output management controls such as Total Allowable Catches or quotas which limit *how much fish* is removed from the sea, technical measures such as mesh size and other gear restrictions which place technical restrictions on *how* fishermen catch fish, and input management control measures which restrict *how much effort* is used to catch fish. Effort is a combination of the *capacity* and the *activity* of a fishing vessel or group of vessels. *Capacity* changes primarily with the size of the fleet or individual vessels in terms of its size, the amount of fishing gear it uses or its engine power (measured in kilowatts (kW)) as increasing these characteristics enable fishermen to catch more fish. *Activity* is a measure of how much time fishermen spend fishing in a particular area: the more time that is spent fishing, the more fish can be caught. The unit generally used to measure effort therefore combines capacity and activity into kW days.

Limiting effort has become the European Commission's (EC) principal means of input management control since 1992, and there are now a number of important Regulations which limit fishing effort in particular sea areas such as in Western Waters (the area off the coasts of Ireland, northern France and the UK) and for particular species such as North Atlantic cod, North Sea plaice and sole, Western Channel sole, southern hake and *Nephrops* (also known as Norway lobster) and deep sea species. Effort limitation is particularly important as part of management and recovery plans for these species, which are considered at special risk of overfishing.

Effort management regulations place limits on the total effort applied in a these fisheries by allocating Member States (MS) with a total amount of kW days. Allocations are made annually based on what is known as 'track record', that is to say how much effort was being used during a particular reference period of years. In some Member States part of these allocations are transferable between vessels. Effort allocations may change in line with annual scientific advice about the status of fish stocks, so that all fishermen are affected equally and fairly by any changes.

Responsibility for implementation of effort management Regulations lies with the MS governments and relevant Ministries, and is typically delegated to relevant fisheries departments and organisations engaged with enforcing fisheries regulations. All MS have established procedures for regular dialogue with industry representatives to enable stakeholder involvement, and in a number of countries the Producer Organisations (POs) which represent groups of fishermen, are integrally involved in effort management administration.

This report explores how the various management regimes are managed by MS in response to the EU Regulations. The report is based on a literature review and on information collected using face-to-face interviews with MS administrations and control organisations, and with industry representatives. It makes recommendations for improvements for consideration by the EC.

Monitoring and verification

There are three parameters requiring monitoring and verification for the management of fishing effort that is allocated: engine power, the gear used and the time spent fishing.

Engine power, with management authorities using the value of the engine power provided by certification bodies to the National authorities in charge of registering vessels under the domestic flag (in general, the Authorities in charge of transport). There is no systematic verification of engine power by MS at present, but a new regulation (Reg 1224/2009), will introduce an obligation for MS to verify engine power of fishing vessels.

For all MS, coherence between the *fishing gear* declared in the logbook (records which fishermen have to complete showing where and when they have caught fish) and the fishing gear actually used is verified through physical inspections of fishing vessels at sea, and in ports before the fishing trip and/or upon return to port. Most recovery plans involving limits on fishing effort impose minimum inspection rates on MS.

The *time spent fishing* is mostly commonly monitored using information obtained through logbooks and cross checked with satellite tracking of vessels, known as Vessel Monitoring Systems). In addition some MS use hail in/out messages to cross check logbook declarations on the active time fishing, and physical sighting information from airborne or seaborne inspections, or from port inspections. The definition of 'fishing time' differs between regulations and is interpreted differently by MS, with some recording all the time from leaving a port to returning to a port, while others record the time spent actively fishing in an area.

Costs and benefits, and impacts

MS administrations recognise that the underlying objective of capping, or in most cases reducing fishing effort to bring it more in line with fishing quota, is being achieved, and MS are generally broadly supportive of effort management regimes. Effort management regimes are felt to have made an important contribution to overall effort reductions. However most MS suggest that in many cases other management measures such as decommissioning schemes, quota restrictions, and higher operating costs such as fuel have all reduced fishing effort.

A further strength of the effort management regulations identified is the transparent calculation of total effort allocations per MS based on track record over particular reference years, which is deemed to be fair.

Administration of effort management regimes has resulted in considerable costs for both the MS administrators and the private sector in terms of set-up costs and ongoing running costs (e.g. meetings, monitoring, reporting to the EC, etc). Where effort can transferred between vessels in some MS a 'market' has developed for effort allocations, which can represent a significant addition to fishing costs with fishermen buying fishing effort allocations from others. Many MS report that, in view of all these costs, as effort management regimes are often less of a constraint for fishermen than quota allocations, the cost of their establishment and ongoing administration is disproportionately high compared to their positive effects.

Other impacts of effort management regimes are: limits on effort for the species which are the focus of recovery plans have sometimes led to constraints on the ability of fishermen to catch other species, e.g. where the recovery plan species is a by-catch in another fishery; fishing effort has in some case been displaced to other fisheries (both to other areas, and to fleets not regulated by effort, e.g. those of less than 10 m in length); vessels may stay out at sea under dangerous weather conditions in order not to waste effort allocations by steaming in and out of port (where such time is included in the measure of *activity*); and some vessels that would ordinarily wish to switch between gears on the same trip to increase profits avoid doing so as the time counts for both gears used, i.e. two differently regulated gears used in one day = two days used.

Some effort regimes (e.g. for cod) have added flexibility that allow MS to allocate fishing effort above the minimum set out, or to exempt vessels from effort regimes, where vessels participate in additional cod avoidance activities and where by-catch falls below a certain limit. This has led to some positive developments in the developments and use of fishing gears, which are more selective in the species they catch (i.e. reducing cod catches as a by-catch of other fisheries), and the use of closures of some sea areas to reduce catches of juvenile cod in exchange for effort allocation derogations.

Key recommendations

A weakness identified in relation to the administration of effort management measures is the high level of complexity, which results in increased administrative costs and low industry comprehension and acceptance. Many MS feel that regulations could be simplified and clarified with respect to when effort allocations are made and the information requirements and formats required by the Commission.

Information requirements and regulations could be updated and standardized in terms of the reference periods used. Also, now that electronic Vessel Monitoring Systems are in place and electronic logbooks are to be introduced, the definition of fishing activity in regulations could be standardised in terms of 'active fishing' in a regulated area.

Regulations could be further simplified if they are ''results-based', i.e. focusing on specifying the desired outcomes rather than the detail of how MS achieve those outcomes.

It is suggested by several Member States and their private sectors that there needs to be more flexibility in determining what fleets are exempt from effort regulations. This flexibility should enable positive changes and reduce complexity, rather than adding to complexity in terms of MS administration.

However, perhaps the greatest concern for MS is that effort will increasingly be used as a reductive tool in parallel with quota. MS favour the use of either quota or effort, not both. Where both are deemed necessary, MS and industry would like to see a clear hierarchy, e.g. quota is used as the main control and effort supports, but a mixture of the two confuses administrators and industry alike.

EXECUTIVE SUMMARY

Introduction

Fishing effort can be defined as: "*the product of the* capacity *and the* activity *of a fishing vessel; for a group of vessels it means the sum of fishing effort exerted by each vessel of the group*." Limiting effort has become the European Community's principal means of input management control[1] since 1992, starting with initial limitations for demersal and benthic species in Western Waters in 1995 (later amended through Council Regulations No 1954/2003 and 1415/2004, and Commission Regulation No 2103/2004). Since the subsequent 2002 reform of the CFP, fishing effort management schemes have formed part of management plans and recovery plans, and now cover five fishery groups deemed by the EC and its Member States (MS) to have reached a critical level. These critical control species are: North Atlantic cod (Council Regulation No 1342/2008), North Sea plaice and sole (Council Regulation No 676/2007), Western Channel sole (Council Regulation No 509/2007), southern hake and *Nephrops* (Council Regulation No 2166/2005) and deep sea species (Council Regulation No 2347/2002).

This report explores how effort is managed by MS under the various effort management regulations, and how effort regulation has evolved in different ways in different MS based on the specific needs of the fisheries and the approaches taken by the MS. The primary objective of the report is to inform the Commission of practical aspects of the implementation of Community effort measures in MS, in particular with a view to better assessing the level of detail needed in the regulations, and to evaluating opportunities for simplification and standardization.

Approach and methodology

The findings in this report are based on face-to-face interviews with MS administrations and control organisations, and with industry representatives using a questionnaire to ensure consistency of information. The questionnaire was piloted and agreed with the Commission before being rolled out across all relevant MS. Qualitative findings from the interviews were further informed by background documents provided by the Commission.

Administrative arrangements

Effort management regulations are administered in 12 of the 14 MS interviewed. For two, Poland and Latvia, international swaps of their entire quota for effort-regulated (deep sea) species and therefore these MS do not actively administer effort management regimes.

Responsibility for implementation lies with the MS governments, and with relevant Ministries, and is typically delegated to fisheries departments. All MS have established procedures for regular dialogue with industry representatives to enable stakeholder involvement and their support for the measures taken, although the existence of a consultation process does not in itself ensure industry appeasement and compliance, e.g. in Sweden where there have been a number of legal challenges. In a number of MS (e.g. Germany and Ireland) the Producer Organisations (POs) are integrally involved in effort management administration.

[1] As opposed to output controls such as TACs, and technical measures such as mesh size and other gear restrictions

Seven out of twelve MS apply the effort regime according to the EU legislation without further detailing on the grounds of the specific local situation. BE, NL, ES, SE and UK apply further details to respond to specific conditions, in the form of conditions relating to issues such as gear use, and ownership of fishing rights.

Calculation and allocation of effort and its uptake

The procedure and criteria for effort *allocation* differs between MS and between different effort management regimes, but is generally based on prior activity over a given reference period (which also varies between MS and between regimes), but the *calculation of effort* used is generally consistent between MS within each specific effort management regime.

The *calculation of effort uptake* is mostly based on information obtained through the logbooks and cross checked with the VMS data, although some MS also use sales notes or pre-notification procedures when vessels leave or arrive in port or a fishing area,. In all MS except for Belgium and UK, which only allow one gear on board at any time, carrying more than one gear on board implies that the sea-days are counted against all gears, so that with two gears the use of effort is double the number of calendar days spent at sea.

Monitoring and verification

There are three parameters requiring monitoring and verification for the management of fishing effort:

- The **capacity** of the fishing vessels expressed in kW of the main engine;
- The **fishing gear** used by the vessel; and
- The **time** during which the vessel is deemed active as per regulations.

The situation is very much the same across all MS with regard to monitoring engine power with authorities simply recording changes in the fleet register when these are reported to them. There are as yet no systematic verification processes for engine power, but this situation will change in 2011 under the newly adopted control regulation (Reg 1224/2009), which introduces an obligation for Member States to verify engine power (art. 39 to 41) of fishing vessels.

For all MS, coherence between the fishing gear declared in the logbook and the fishing gear actually used is verified through physical inspections of fishing vessels at sea, and in ports before the fishing trip and/or upon return to port. Most recovery plans involving limits on fishing effort impose minimum inspection rate to Member States.

With respect to time, for vessels equipped with VMS (> 15 m), Member States cross-check logbook declarations with VMS data to verify the reported presence and time spent in a zone. In addition to VMS, Belgium, Denmark, Spain, Ireland, Netherlands, Sweden and the United Kingdom use the hail in/out messages to cross check declarations on time fishing. For all vessel length classes, Belgium, Denmark, Ireland and United Kingdom also use sighting information from airborne or seaborne inspections or from port inspections to verify logbook declarations. Member States have few alternative independent data flows to verify effort data for vessels less than 10 m, with some MS e.g. Denmark, Spain, Ireland and the United Kingdom, using inspections (including sightings) to verify effort data for a sample of vessels of <10 m.

Alignment with quotas

Alignment of effort with quota is to a large extent implicit in the initial allocations. Furthermore, many MS have to date viewed quota as the primary constraint on fishing, with

sufficient effort being available and so there has not been further action to align effort with quota. This is particularly the case for the Western Waters and Deep sea effort management regimes, with only France considering effort limitations more of a constraint that quota. There is however an expectation that this will soon change as certain effort regimes, such as cod, become more constraining to their fleets. The cod regime is the regime with the most MS considering effort limitation as being more important than quota limitation. Six of the twelve MS administrations do attempt some form of alignment of effort with quota allocations. In some Member States (ES, SE, UK) this is enabled through permitting the trade of effort between quota holders. The intention is that the market then aligns effort with quota, and this approach is also under consideration in Denmark.

Transfer and re-allocation of effort

Belgium, Lithuania and Ireland do not allow transfers, but most MS allow transfers of individual effort allocation within a fishery. In fisheries where effort management is derogated to POs (Germany, France) transfer within the POs is at their discretion. Transferring effort between fisheries is permitted in some MS (e.g. Germany, the UK) but is uncommon, probably because of administrative complexity and the effort 'exchange rates' applied when transferring between gear types.

In fisheries where swapping of effort allocations is allowed, reallocation of unused effort towards the end of the year is not an issue as the 'market does its work'. When swapping is not allowed several options are open:

- Some MS, such as Portugal, Ireland and France do not take any action with the consequence that some effort may remain unused. This may occur especially when quota rather than effort is the constraining factor for vessel activity;
- Other MS (Germany, Spain, Denmark and the UK) review the status of the up-take of the effort and subsequently redistribute according to identified needs; and

Cost and benefit implications

Administration of effort management regimes result in costs for the MS administrators (generally the MS fisheries agencies), which include set-up costs (introducing legislature, developing systems and consulting with the industry on changes) and ongoing running costs of effort management schemes (verification, monitoring, reporting, on-going consultation and acting on non-compliance). Generally these cannot be disaggregated from wider fisheries management administrative costs, but MS nonetheless view them as a considerable burden.

MS that have spent more time and money on consultation with industry appear to have had fewer problems and complaints associated with the management of the regimes, thus saving other costs such as those related to legal disputes/challenges. But many MS generally report that, as effort management regimes are often not the primary constraint compared to quota (see above), their establishment and ongoing administration has been disproportionate to the positive effects of the regime.

Costs for the fishing industry can take the form of participation in meetings, and costs associated with management of regimes where POs are tasked with some aspects of management. The most significant cost for the private sector is in MS where effort can transferred – in such situations a market has developed for effort, and can represent a

considerable addition to fishing costs e.g. In the UK, for relevant fleets the purchase of days at sea varies from 0.1% to 1.6% of fishing expenses.

It is difficult to conclude whether the tradability of effort creates a comparative advantage for those Member State fleets where it is permitted. A benefit of tradability is that the running costs are directly proportional to the benefits of flexibility they deliver as administration and transaction charges only occur with transfer activity. However, when effort becomes highly constraining, prices may rise to the point where effort is no longer traded as the costs involved outweigh the benefits of additional fishing opportunities.

Impact of effort regimes on fishing patterns

MS report mixed messages on the impact of effort management on fishing patterns. Overall fishing effort is generally reducing under the plans, which is the intended result. However some negative impacts are that:

- Some effort management has also led to constraints in other fisheries, e.g. the Danish authorities claim that the *Nephrops* fishery in the Kattegat is being unnecessarily constrained by effort allocations under the cod plan;
- In some cases, effort has been displaced to other fisheries (both to other areas, and to unregulated fleets), e.g. Spain reports the limitations on fishing in the West of Scotland under the cod plan has led to the increased targeting of Nephrops on the Porcupine Bank, and several MS report spatial displacement of vessels as a result of days at sea restrictions;
- Fishermen are now more careful in terms of planning the start and end of trips to avoid 'spilling days', and in some cases, vessels are reported to stay out at sea under dangerous weather conditions, in order not to waste effort by steaming in and out of port;
- Some vessels that would ordinarily choose to switch between gears on the same trip avoid doing so as the time counts for both gears used, i.e. two differently regulated gears in one day = two days used.

Some effort regimes (e.g. cod) allow Member States to allocate fishing effort above the minimum set out, or to exempt vessels from effort regimes, where vessels participate in additional cod avoidance activities and where by-catch falls below a certain limit. This has led to positive developments, such as in Ireland, which has seen the introduction by some vessels in the prawn fishery of Swedish grids for cod avoidance, and in Scotland where the Conservation Credits Scheme was developed (The Scottish Government agreed with the European Commission that it would institute a system of real time closures in 2008 to reduce catches of juvenile cod. Fishermen who complied with the area closures received additional days at sea).

Greater incentives and more exemptions are desired by Member States and industry alike. Some propose the expansion of the days-at-sea incentives for bona fide pilot schemes to encourage adaptations to be adopted and enable sufficient sample sizes to show impacts.

Member State administrations are generally in agreement that the underlying objective of capping or in most cases reducing fishing effort to bring it more in line with fishing quota is being achieved. The cod management plan is an example of a management regime which has certainly made a major contribution to overall effort reductions. A further strength of

the effort management regulations identified is the transparent calculation of total effort allocations per Member State based on reference years.

However, most Member States also suggest that rather than effort reduction being due to the effort management regulations themselves, other management measures such as decommissioning schemes to tackle overall capacity reduction, quota restrictions, and the introduction of rights-based management, have been more influential. Operational issues such as higher fuel costs have also contributed to the overall reduction in fishing effort.

Some MS are concerned that effort management regimes are moving towards effort becoming a tradable commodity, creating additional costs for administrations and particularly industry. However, perhaps the greatest concern for MS is that effort will increasingly be used as a reductive tool in parallel with quota. MS favour an either/or approach to the two systems, but where both are deemed necessary, MS and industry would like a clear hierarchy, e.g. quota leads and effort supports, but not a mixture as this confuses administrators and industry alike.

Recommendations

A key weakness identified in relation to the administration of effort management measures is the high level of complexity, which results in increased administrative costs and low industry comprehension and acceptance. Simpler regulation can be achieved through addressing:

- **Timing issues** - quota is allocated on a calendar year and available in January, while effort is allocated in February, making management of effort in January based on assumed future allocations. Distribution of national allocations in due time before they enter into force would help both administrations and industry in planning;
- **Reference years** – in some cases new gears have been introduced that are not reflected in the reference periods, and there are different reference years in some regulations to determine activity and kilowatt ceiling causing certain vessels to be excluded from one calculation but included in another.
- **Information requirements**. Recent MS experience, particularly the rejection of applications for fleet exemptions, has shown that requirements for information provision have been ad hoc and reactive. Member States would benefit from a standard, well-defined format of reporting to the Commission. As STECF 'reacts' to advice requests from the Commission, the information required from Member States has not been fully determined in advance. Consequently MS information is also reactive and has often proved to be insufficient or incomplete. Establishing in advance precisely what information is required and when, would reduce confusion and administrative costs.
- **Flexibility**. Flexibility can be encouraged and simplification achieved if regulation is less specific and more results-based. Defining how a MS achieves the desired result is not as important as defining exactly what must be achieved. Flexibility should be built in to enable positive changes and reduce complexity, rather than adding to complexity in terms of MS administration.

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1 INTRODUCTION

1.1 BACKGROUND

This report has been prepared for DG MARE of the European Commission under "Studies and Pilot Projects for carrying out the Common Fisheries Policy: Lot 2 Administrative Experiences with effort management concerning the NE Atlantic".

Effort limitation has become the Community's principal means of management by input control since 1992, evolving from the initial applications in Western waters (1993) to up to 5 fishery groups deemed by the EU and its Member States to have reached a critical level. These critical control species currently include: North Atlantic cod (2003 replaced and updated in 2008), North Sea plaice and sole (2007), Western Channel sole (2007), southern hake and *Nephrops* (2005) and deep sea species (applied since 2002). Table 1 presents the EU regulations that propose the use of effort management along with other management measures to constrain the fishing mortality associated with particular fisheries in the North East Atlantic. These are further supported by additional regulation detailing more precisely what will be implemented, the setting of annual fishing opportunities, currently Reg. 53/2010, Annex II and implementation of the Control Regulation 1224/2009.

The application of effort management is the responsibility of the Member State, with oversight by the European Commission. Effort management has evolved over the last 18 years with some differences in its application between the different Member States. The Member States concerned with all or part of the effort management regimes identified in Table 1 are: Belgium, Denmark, France, Estonia, Ireland, Germany, Latvia, Lithuania, Netherlands, Portugal, Spain, Sweden and the United Kingdom.

Table 1 Summary of effort management regimes in the North East Atlantic

Abbreviated name	Regulation	Species and areas covered
Western Waters	COUNCIL REGULATION (EC) No 1954/2003, 1415/2004 and 2103/2004 and modifying Regulation (EC) No 2847/93 and repealing Regulations (EC) No 685/95 and (EC) No 2027/95.	Demersal species, scallops, edible and spider crab. Biologically sensitive areas in ICES areas V, VI, VII, VIII, IX and X and CECAF divisions 34.1.1, 34.1.2 and 34.2
Deep sea	COUNCIL REGULATION (EC) No 2347/2002	Deep sea stocks sub-areas I to XIV inclusive, and Community waters of CECAF areas 34.1.1, 34.1.2, 34.1.3 and 34.2
Cod recovery	Long-term plan for cod stocks (Council Regulation No 1342/2008, implementing rules through Commission Regulation 237/2010)	North Sea, Kattegat, Skagerrak, West of Scotland and Irish Sea
North Sea Flatfish	Recovery plan for plaice and sole in the North Sea (Council Regulation No 676/2007	Plaice and sole in IV

Southern Hake and *Nephrops*	Recovery plan for Southern hake and Norway lobster stocks around the Iberian Peninsula (Council Regulation No 2166/2005)	Hake and Nephrops in Divisions VIIIc and IXa
Western Channel sole	Recovery plan for the sole in the Western Channel (Council Regulation No 509/2007)	Sole in VIIe

Fishing effort can be defined as: "*the product of the capacity and the activity of a fishing vessel; for a group of vessels it means the sum of fishing effort exerted by each vessel of the group*." From 2002 onwards effort management has been defined as a type of fishing opportunity and forms part of management plans and recovery plans along with other measures to control exploitation such as the allocation of quotas. This study explores in more detail how effort is managed by Member States under the regulations listed in Table 1.

1.2 OBJECTIVES

The primary objective of this research is to inform the Commission of practical aspects of the implementation of Community effort measures in Member States, in particular with a view to better assess the level of detail needed in the regulation, and to evaluate the room for simplification and standardization.

The study outputs provide details about the practical implementation by Member States of Community effort management regimes applicable in Atlantic waters. The findings should help the Commission in the further development of effort management schemes. However, it is not the objective of this research to explore the comparative benefits or disadvantages to using effort management schemes or the efficacy of Member State control systems.

The study's results should allow the Commission to better assess the level of detail needed in Community legislation, as well as the need to address inconsistencies or other shortcomings of the regimes in terms of practical implementation. It should also be a reference for improving the collaboration and mutual understanding between scientists working on Commission requests for effort analysis advice, and administrators in charge of the daily management of fishing opportunities.

1.3 REPORT STRUCTURE

The findings presented in this report are mainly a result of interviews conducted with Member State administrations and industry representatives. More detail on the approach taken is presented in section 2.

The remaining sections of the report adopt a similar structure to the Member State questionnaire that is presented in Appendix 1.

Table 2 lists the sections of the report and shows their correlation to the Terms of Reference (ToR).

Table 2 Report sections and relation to the ToR

Section	Description	Specific section of the ToR	
Section 3: Review of Regulations	Exploring the differences between how effort management is proposed within the regulations addressing the 6 effort regimes considered.		*Not specifically required by the ToR, but necessary to fully understand the effort management issues*
Section 4: Member State Implementation	Looking at the coverage and administrative structures administering effort in Member States.	(1) (5)	Describe the technical and organisational environment and administrative practice of fishing effort management by Member States as far as this management is linked to the effort rules referred to above. Elaborate on whether and why effort is managed per fleet segments/metiers or areas which are more detailed than established by the Community rules;
Section 5: Calculation and Allocation	Identifying the basis on which effort is allocated and in some cases, transferred and re-allocated.	1(a) (3)	The procedure and criteria for effort allocation under the different regimes, as well as the recipient units (self-organised fleet segments/metiers or individual vessels), Describe to what extent and under which conditions the Member State has allowed effort to be transferred between vessels or vessel groups, and to what extent this has been used in practice;
Section 6: Verification and monitoring	Exploring the various approaches to ensuring compliance.	1.(b) (c) (d) 1 (e)	The calculation and monitoring of effort consumption, The verification/control procedures and means concerning the installed vessel power and the effort consumption in terms of correct gear and time at sea, The keeping and updating of "vessel lists" which exhaustively enumerate vessels having access to the fisheries, the frequency of updates, and cross-checking of vessel characteristics with the Community Fishing Fleet Register, The frequency and the handling of complaints from the sector as concerns effort management;
Section 7: Alignment with Quota	Identifying if and how alignment attempted.	(2)	Concerning effort allocation and monitoring, assess how the system tries to align effort with fishing quotas, and whether problems in achieving this have resulted in the perception of administrative inefficiencies or additional costs on the part of the catching sector.
Section 8: Incentives for Responsible Fishing	Initiatives by Member States to improve practices such as selectivity and reductions in discards.	(4) (6)	Concerning effort allocation and monitoring, describe if and how incentives are being created for responsible fishing practice, in particular aiming at the reduction of discards; Describe how the Member State deals with overlapping regimes, i.e. where restrictions resulting from several regimes apply to the same vessels, whether this has given rise to complaints from the sector and, in precise terms, describe and

		(7)	discuss Member States having perceived inconsistencies or over-regulation; Assess if and how the Member State has acted to avoid negative incentives being created for the sector by the fact that categories of smaller vessels or other categories of vessels are exempted from the regime.
Section 9: Member State SWOT Analysis	Reporting the opinions of administrators and industry.		Objectives: "The study should provide details about the practical implementation by Member States of Community effort management regimes applicable in Atlantic waters. This should include inconsistencies and other shortcomings as observed by the Member States, and innovative management"
Section 10.	Conclusions and recommendations based on the previous sections		…allow the Commission to better assess the level of detail needed in Community legislation, as well as the need to address inconsistencies or other shortcomings of the regimes in terms of practical implementation. The results of the study should also help the Commission in the further development of effort management schemes.

2 APPROACH AND METHODOLOGY

2.1 APPROACH

The research centres on interviews with Member State administrations and industry representatives. These qualitative findings were further informed by background material provided by the Commission.

2.2 METHODOLOGY

Table 3 presents the sequential tasks undertaken to deliver the research.

Table 3 Tasks associated with effort management research

Task	Approach
Task 1: Inception meeting and clarification of the questionnaire	Confirmation of approach, provision of documents (National control action programme (NCAP))
Task 2: Literature review	Consultant review of NCAP and national implementing regulations, and reporting to Team Leader
Task 3: MS interviews and questionnaire write up	Finalisation of questionnaires (MS and PO) and commencement of interviews
Task 4: Analysis and dissemination	Review of findings by principal consultants and summary of findings
Task 5: Clarification and interviews with EC and CFCA	Cross checking and validating MS responses, and validating findings with EU and CFCA.
Task 7: Interim presentation	Presentation of each national result and group conclusions, and focus of recommended actions in discussion with EC
Task 8: MS output Review	Feed back from MS based on Task 7 above
Task 9: Final reporting	Report compilation
Task 10: Final presentation	Final presentation

The consultants used face-to-face interviews for all the Member States concerned. For the majority of Member States, local consultants with sufficient knowledge on effort management issues were used to ensure that the interviews were conducted in the national language of the respondents with capacity to require clarifications during the conversations. The interviews included Member State administrations, fishery control organisations (the management of the effort regime) and representatives of the private sector (the clients of the effort regime, having a role in the management in some cases, e.g. Producers Organisations).

A questionnaire (Appendix 1) was developed by the consultants and reviewed by the Commission with amendments/additions made before MS interviews were undertaken. The authorities responsible for administering the effort management regimes were interviewed along with Industry representatives (Fishermen's Associations or Producer Organisation) in each of the Member States (Table 4).

Interviews were also held with the European Commission including the Units responsible for fisheries management and control. When the Community Fisheries Control Agency (CFCA) was approached for comment on the study's draft findings, the response was that involvement of the CFCA in effort management has to date been very limited.

Table 4 Member State organisations interviewed

Member State	Member State Administrations	Industry representatives*
Belgium	Dienst Zeevisserij	Redersvereniging PO
Denmark	Fiskeridirektoratet	Danish Fishermen's Producer Organisation
Estonia	Min. of Environment (MoE)\ Environmental Inspectorate	Estonian Fishermen's Association, Estonian Association of Fishery
France	Ministère de l'Agriculture, de l'Alimentation, de la Pêche et des Affaires Rurales (Direction des Pêches Maritimes et de l'Aquaculture DPMA) IFREMER (support to DPMA for effort calculation under some regimes))	FROM Bretagne, PROMA.
Germany	Bundesanstalt für Landwirtschaft und Ernährung (BLE)	Fischereigenossenschaft Elsfleth e.G.*. Am Binnenhafen. 26919 Brake Erzeugergemeinschaft der Hochsee- und Kutterfischer GmbH, Cuxhaven
Ireland	Department of Agriculture, Fisheries and Food Sea Fisheries Protection Agency	Killybegs Fishermen's Organisation, Federation of Irish Fishermen
Latvia	Latvian Fishery Administration	n/a
Lithuania	Fisheries Service under the Ministry of Agriculture (former Fishery Department)	Lithuanian fish products producers association
Netherlands	Min. of Agriculture, Nature and Food Quality (LNV)	PO Redersvereniging
Poland	Min. of Agriculture and Rural Development \Fisheries Dept.	n/a
Portugal	(Directorate General for Fisheries and Aquaculture – DGPA)	Associação dos Armadores das Pescas Industriais (ADAPI) Associação de Armadores da Pesca do Norte (APN).
Spain	Ministerio de Agricultura Pesca y Alimentación (MAPA). Secretaría General de Pesca Marítima (SEGEPESCA).	ARVI
Sweden	Fiskeriverket, National Board of Fisheries (NBF),	Swedish Fishermen's Association
UK	Marine Management Organisation (MMO)	National Federation of Fishermen's Organisations

*n/a = industry not interviewed where administrations not administering effort management (Latvia & Poland).

2.3 BACKGROUND MATERIAL

In addition to the text of each regulation listed in table 1, the following material was provided to the consultants for consideration as part of this research:

- C2/RAD D (2010) "Workshop on Practical Aspects of Fishing Effort Management", 8 February 2010. Minutes.
- COM (2010) Review of fishing effort management in Western Waters (Draft), Communication from the Commission to the European Parliament and the Council.
- STECF (2009) Evaluation of requests from Member States to exclude certain groups of vessels from the effort regime under provision of Article 11(2) of Council Regulation 1342/2008 of 18 December, 2008. March 2009. Edited by John Casey & Hendrik Dörner.
- STECF (2008) Report of the SGRST-08-03 Working Group on Fishing Effort Regime. Edited by Nick Bailey & Hans-Joachim Rätz. 1 – 5 September, Lysekil, Sweden.
- SEC (2007) Commission Staff Working Document Fishing Effort Regime (Sgrst-07-02 and 07-04) Subgroup on the Assessment of the Fishing Effort Regime (SGRST) of the STECF, Opinion Expressed During the Plenary Meeting of 5-9 November 2007 in Ispra.
- NSRAC (2010) Evaluation of the cod recovery plan. The North Sea Regional Advisory Council. Brussels, 7th April 2010
- NWWRAC (2010) in response to Commission's consultation document In relation to review of the deep-sea access regime [Council Regulation (EC) No 2347/2002]. North Western Waters Regional Advisory Council Advice, March 2010
- STECF SGMOS 09-05 Assessment of fishing effort regimes

3 REVIEW OF REGULATIONS

Among the six EU effort management regimes covered by this study, the relevant regulations show some differences that are important to take into account when trying to understand the administrative experiences of Member States with effort management. The following sections present the main details of the EU regulation having an impact on effort management and associated rules.

3.1 DEFINITIONS

Western Waters regime (Reg 1954/2003) - application Reg. 1415/2004 (effort limits) & Reg. 2103/2004 (reporting format)

The Western Water regime is the first effort management scheme adopted by the EU. First defined in Reg 685/95 on the basis of the definition of effort adopted in the core CFP regulations Reg. 3760/92, and subsequently in Reg. 2371/2002, it reads:

'Fishing effort' means the **product of the capacity and the activity of a fishing vessel**; for a group of vessels it means the sum of fishing effort exerted by each vessel of the group (art. 2 of Reg. 1954/2003)'

The capacity referred to in this definition is the main engine power measured in KWKW. Activity is not defined in legal terms in this regulation. The unit of effort regulated is the aggregated KWKW days for the relevant group of vessels (Reg 1415/2004).

Deep Sea effort regime (Reg. 2347/2002) - application Reg. 53/2010 (art. 9):

The deep-sea species effort regime was the second effort management regime adopted by the EU. There is no reference to earlier definition of fishing effort, but a slightly different new definition that reads:

'Kilowatt-fishing days' means the product of the power as defined in art. 5 of Reg 2930/86 "and the **number of days in which a fishing vessel has any item of fishing gear deployed** in the water (art. 2 of Reg. 2347/2002).

This definition of effort, which concerns basically fishing vessels using trawls, refers therefore for activity to the actual use of fishing gears and excludes vessel's time used for steaming to/from fishing grounds or searching.

However, the implementing regulation for the Deep Sea effort regime tabled in Reg. 53/2010 introduces a different obligation for regulating effort under the deep sea species regime. The relevant section of the regulation says that:

'fishing effort levels, **measured in kilowatt days absent from port**, by vessels holding deep-sea fishing permits do not exceed 65 % of the average annual fishing effort deployed by the vessels of the Member State concerned in 2003 on trips when deep-sea fishing permits were held and/or deep-sea species, as listed in Annexes I and II to Regulation (EC) No 2347/2002, were caught. … (art. 9 of Reg 53/2010)'

Activity is in this case defined as absence from port, and to be understood as any time spent at sea, whether steaming, searching or fishing.

Both definitions seem potentially conflicting. However, it can be assumed that definition used in Reg 2347/2002 was the definition to be used by Member States to assess effort reference levels on deep sea species, while Reg 53/2010 sets the rules for Member States for administrating effort levels on deep sea species.

Southern hake and Norway lobster stocks in the Cantabrian Sea and Western Iberian Peninsula regime (Reg 2166/2005) – application Reg 53/2010 Annex IIb

The definition of effort to be used by Member States is to be found in Reg 53/2010 as the founding regulation for this effort regime does not give any specific definition. The basic rule refers only to presence of regulated fleet in the area, with no reference to activity:

'When carrying on board any regulated gear, EU vessels flying its flag shall be **present within the area for no more than the number of days** specified in point 5 [of annex IIb of Reg 53/2010]'

The limitation is therefore on days of presence of individual vessels, independently from the capacity of the vessels expressed in KWKW or GT. The regulation introduces possible application by Member States of a management of effort on an hourly presence basis. However the overall effort limit calculation of point 4.1, in conjunction with Reg 1224/2009 (in particular art. 26.6) constrain this.

Reg 2166/2005 introduces however a derogatory regime implemented by Reg 53/2010, subject to prior authorisation from the Commission: For Norway lobster in certain area of area IX, fishing effort may be measured as the sum, in **any calendar year, of the products across all relevant vessels of their installed engine power measured in KWKW and their number of days fishing** in the area.

Sole in the Western Channel (Reg 509/2007) – application Annex IIc to Reg 53/2010:

The definition of effort, and derogation applying, used under this effort management regime is identical to the definition used for the Southern hake and Norway lobster stocks in the Cantabrian Sea and Western Iberian Peninsula effort regime (see above).

Cod plan (Reg 1342/2008) – application annex IIa of Reg 53/2010:

The effort regime under the cod management plan is the most ambitious species-specific EU effort regime in relation to the number of vessels regulated. A definition of effort regulated is given in Reg 1342/2008 (no specific definition was proposed in the preceding cod plan regulation 423/2004):

'the fishing effort deployed by a group of vessels shall be calculated as the sum of the products of capacity-values in kW for each vessel and **the number of days each vessel has been present** within an area set out in Annex I. **A day present within an area shall be any continuous period of 24 hours (or part thereof) during which a vessel is present within the area and absent from port**' (Reg 1342/2008, art. 4)

The definition considers therefore day of presence in the zone as the unit of time for administrating effort, which could be understood literally as including also steaming through the area en route to other fishing grounds. One important feature of this definition is that it

introduces a specific management rule for management of fraction of days by which any part of a day is to be counted as a full day (a continuous period of 24 h).

Regulation 53/2010 introduces a possible application by Member States of a management of effort on an hourly presence basis.

North Sea Plaice and Sole (Reg 676/2007) – application Annex II a of Reg 53/2010:

There is no definition of fishing effort regulated under this North Sea Plaice and Sole management plan in the founding regulation 676/2006. However, the management of effort under this regime is amalgamated with effort management rules of the cod regime (see above). The method for effort limitation was set in a way equal to the cod plan, via Annex IIA to the annual fishing opportunities regulation (Reg 53/2010). So the same rules as the cod plan apply (day of presence - or part thereof - in the area x capacity in kW).

Concluding remarks

The Communication from the Commission to the Council and the European Parliament on improving fishing capacity and effort indicators under the common fisheries policy (COM (2007) 39 of 5.2.2007) indicated that in Community law, the fishing effort for a vessel is the product of its capacity (expressed in tonnage or kW) and its activity. For a group of vessels, the fishing effort is defined as the sum of the fishing effort of each vessel. According to the Communication, fishing activity is defined as the time spent in a given area during which the fishing capacity of a vessel is effectively operating and is measured in days, but the situation has changed since.

Across the different effort regimes, the definition of fishing capacity adopted (when relevant) is the same, i.e. the power of the vessel expressed in kW. Most regulations precise that the power to be taken into account by Member States is the main engine power (variable [power main] of the Community fleet register as defined art. 5 of Reg 2930/86), not taking into account the auxiliary power.

Concerning activity, assumed to be the time during which the fishing capacity of a vessel is effectively operating, the definitions may vary. From an operational perspective and during a fishing trip a vessel may be steaming from/to fishing ground, searching for fish with no gear deployed, effectively fishing with pieces of fishing gears in the water, or momentarily interrupting its regular activities for a number of reasons while staying on the fishing grounds (engine or gear breakdown, bad weather, search and rescue, etc.). Under all those circumstances, the vessel can be assumed to operate its capacity. However, the vessel may be considered as fishing only when it has fishing gears in the waters at the minimum, or also when it is searching for fish.

There have always been exemptions from the taking into account of presence in the area laid down in the regulations: first in Annex IIABC (e.g. points 21 and 22 of Annex IIA in Reg 40/2008), now (since 2009) in Reg 1224/2009 (Article 29). As a consequence, when the effort regime specifies only vessels active in the area (e.g. Western Water regime), MS may have their own interpretation. However, most effort regulations specify that the unit of activity to be administered is presence in the regulated area (cod, sole Western Channel, Southern hake & *Nephrops*, North Sea sole and plaice) or merely absence from port (deep sea regime).

The time unit considered in the effort regime related regulations is often a continuous period of 24 h, unless otherwise specified under derogatory specific dispositions. Before the Control Regulation there were rules not only for the cod plan (Annex IIA), but also for the western channel sole plan (IIC) and the Southern hake plan (IIB). Concerning management of fractions of days, only the cod regime specifies that any fraction of a day is to be counted as a full period. For other regime, it can be assumed that Article 26 of Reg 1224/2009 applies[2], i.e. any part of a continuous period of 24h is to be counted as a full day. This regulation entered into force only recently in January 2010, so the rules for dealing with fractions of days before are assumed to be discretionary (except for the cod plan).

3.2 AFFECTED FLEETS

For all effort regimes, the implementing regulations exclude vessels less than 10 m from the daily effort management tasks. The derogation for fleets < 10m is mostly obtained though the Annex IIABC of Reg 53/2010 (also known as the annual TAC and Quota regulation) detailing the implementation rules of the plans, while the plans themselves are not specific in this respect. Regulations focus on management of effort of vessels greater than 10 m using regulated gears and/or fishing on regulated species or group of species. The Western Water regime focuses on vessels greater than 15 m.

However, effort deployed by smaller vessels must be taken into account by Member States under some effort regimes. This includes the Western Waters regime (effort by vessels between 10 and 15 m must be assessed for the 1998-2002 reference period and current levels shall not exceed the level assessed, with extension to vessels less than 10 m operating in biologically sensible areas). Concerning the cod effort regime and the North Sea Plaice and Sole effort regime, MS shall assess effort of vessels less than 10 m by effort group with a view to their future inclusion in the fishing effort regime (Annex IIa of Reg 53/2010). This means that Member States must have some supervision of the effort of smaller vessels.

For Sole in the Western Channel and Southern hake and Norway lobster stocks in the Cantabrian Sea and Western Iberian Peninsula regime, vessels of less than 10 m are not considered in the implementation rules.

Most effort regimes exclude vessels less than 10 m from the management regime. However, in the cases of the Western Water regime and of the cod regime, Member States are required to take this fleet into account, and must therefore have specific national arrangements to monitor its activities.

3.3 CALCULATION OF EFFORT

The following aspects of the regulations have been identified in relation to the calculation of effort:

[2] Art. 26 § 4 of Reg 1224/2006 reads « A day present within an area shall be any continuous period of 24 hours or part thereof during which a fishing vessel is present within the geographical area and absent from port or where appropriate deploying its fishing gear. The time from which the continuous period of a day present in the area is measured is at the discretion of the Member State whose flag is flown by the fishing vessel concerned. A day absent from port shall be any continuous period of 24 hours or part thereof during which the fishing vessel is absent from port"

- Based on differing reference years between regulations
- Plaice and sole: STECF are asked to forecast what effort is required to take the TAC determined each year.
- Western Channel sole: effort is adjusted in line with the fishing mortality estimated by the scientists according to the objectives of the plan, which is often simply the same proportional change as that applied to the TAC.
- Southern Hake and Nephrops: effort is adjusted in line with the fishing mortality estimated by the scientists according to the objectives of the plan, which is often simply the same proportional change as that applied to the TAC.
- Western Waters: changes to effort calculated in original reference years are determined through consultation with the MS and changes can be requested by MS to ensure all catching opportunities can be taken up.
- Deep Sea: permits issued on the basis that aggregate kW and GT for fleets do not exceed reference years (1998-2000)
- Cod: its more complicated (see below)

For aggregated gear groupings (resulting in an 'effort group') where the percentage cumulative catch calculated according to paragraph 3(b) is equal to or exceeds 20 %, annual adjustments shall apply to the effort groups concerned. The maximum allowable fishing effort of the groups concerned shall be calculated as follows:

(a) where Articles 7 or 8 applies, by applying to the baseline the same percentage adjustment as that set out in those Articles for fishing mortality;

(b) where Article 9 applies, by applying to the baseline the same percentage adjustment in fishing effort as the reduction of the TAC.

For effort groups other than those referred to in paragraph 4, the maximum allowable fishing effort shall be maintained at the level of the baseline. The range of gears which determines from which effort group the effort deployed by a fisherman must be counted against.

Additionally the Member States can apply for more effort for particular effort groups to compensate the imposed effort adjustment of that year if they can show gear selectivity or cod avoidance trips.

3.4 ALLOCATION OF EFFORT

Under the cod regime, the deep sea species regime, the western water regime and the North Sea sole and plaice regime, effort is allocated on an aggregated kW-day basis for each fishery regulated.

For Sole in the Western Channel and Southern hake and Norway lobster stocks in the Cantabrian Sea and Western Iberian Peninsula regime, effort is allocated on the basis on a maximum number of days of presence by vessel. However, subject to prior notification to the Commission, Member States may administer effort on an aggregated kW-day basis (pooling effort * power across the MS fleet concerned) as derogation to the basic rules.

The reallocation of effort from scrapped vessels that were part of effort management regimes is undertaken by Member States through simply recalculating effort allocations based on the

remaining active fleet. Portugal under the Southern hake plan[3], has established the following process:

"In general terms, and for every segment where "plans" are applied:

- The total fishing effort which has been freed from the scrapped vessels is determined in terms of kW/day – the total power in relation to the total fishing days
- That fishing effort is then added and equally distributed among the active fleet. Depending on proportion of scrapped kW and the kW of the active vessels, you may get more or less days back for use.
- However, if in the number of vessel scrapped there is a predominance of a certain gear type (e.g. bottom trawl); Portugal may choose to allocate a greater proportion of those extra days to vessels operating that same gear type which has contributed more. That is why there is a difference of effort redistribution by gear type, but this is a National decision to do so."

Concluding remarks

As far as the most important effort regimes are concerned (in terms of number of vessels regulated), allocation of effort is on an effort group basis, i.e. aggregated kW-days on a metier basis. Two effort regimes (Sole Western Channel and Southern hake regimes) set effort limits on an individual vessel basis in terms on maximum number of days fishing (not taking into account vessels' capacity), with however possible derogation to use an aggregated kW-day management system.

3.5 TRANSFERS

In relation to transfers, Article 20 § 5 of Reg. 2371/2002of is a general rule applicable in all cases[4], unless there is something more specific in the plan. The regulations provide for possibilities to transfer effort allocations between regulated fleets within Member States and to exchange effort between Member States.

The regulations for the Western Waters regime and Deep Sea species regime do not specify exchange possibilities. The rule applying is that defined in art. 20 of 2371/2002 (freedom to exchange between Member States but obligation to notify the Commission)

For the cod regime, art. 16 of 1342/2008 specify exchange possibilities. While the basic rule remains art. 20 of 2371/2002 for exchange between Member States within same groupings of effort, exchanges of effort quota between fleets must take into account vessels CPUE to ensure that exchange of effort possibilities does not lead to increase in catches.

For Sole in the Western Channel and Southern hake and Norway lobster stocks in the Cantabrian Sea and Western Iberian Peninsula regime, Reg53/2010 define exchange possibilities between vessels and between Member States. The basic rule is that kW days

[3] Commission Decisions 2010/415 and 2007/474.

[4] Paragraph reads « Member States may, after notifying the Commission, exchange all or part of the fishing opportunities allocated to them. »

transferred between vessels from a same Member State or from two different Member States are equal.

3.6 SUMMARY

The following table summarises the main features of the regulations implementing effort regimes as discussed in the foregoing sections.

The various effort regimes are based on the same model. However, there are two major differences that could be taken into account for further simplification of this management method:

Harmonise the concept of time in the area: while the most recent effort regimes consider presence in the area as unit of time, the Western Water regime and the Deep-Sea regime consider time active in the area, which may be interpreted as time fishing (gear in the water) and possibly time searching for fish as the logbook template does not foresee different entries for these two types of activities. From an administrative perspective, time present in the area is the easiest.

No monitoring of effort by vessels of less than 10 m: this proves difficult in the absence of compulsory declaration and means of verifying it (e.g. VMS) without prejudice to specific provisions contained in multiannual plans.

So far, the Cod effort regime and the Western Waters regime are the only two effort regimes that consider monitoring of the fleet of vessels of less than 10 m. Member States have systems to monitor the small-scale fleet, but often based on information using sampling methods as foreseen by Reg. 1224/2009. This information is not appropriate to monitor accurately effort deployment in near real-time. The regulatory framework would certainly be simplified if the <10m fleet was excluded from the scope of regulations. The exclusion of these vessels from the regimes may have contributed to the attractiveness of the <10m vessel fleet for investment along with other incentives, but there is no estimate of the size of the problem available. This should therefore be determined ahead of decisions relating to under 10m vessels.

Table 5 Summary of effort management regulations in the North East Atlantic

Abbreviated name	Regulation	Species and areas covered	Fleet concerned	Definition of effort	Allocation	Transfers
Western Waters	COUNCIL REGULATION (EC) No 1954/2003, 1415/2004 and 2103/2004 and modifying Regulation (EC) No 2847/93 and repealing Regulations (EC) No 685/95 and (EC) No 2027/95.	Demersal species, scallops, edible and spider crab. Biologically sensitive areas in ICES areas V, VI, VII, VIII, IX and X and CECAF divisions 34.1.1, 34.1.2 and 34.2	Vessels > 15 m are concerned by effort limits For vessels < 15 m, effort assessed globally for a reference period (<10 m in BSA).	Product of the capacity and the activity of a fishing vessel. Activity is not defined in legal terms	Aggregated kW day basis by group of species targeted	Yes, similar conditions to exchange of catch quotas between MS
Deep sea	COUNCIL REGULATION (EC) No 2347/2002	Deep sea stocks sub-areas I to XIV inclusive, and Community waters of CECAF areas 34.1.1, 34.1.2, 34.1.3 and 34.2	Vessels holders of a SFP	Product of kW and the number of days in which a fishing vessel has any item of fishing gear deployed (2347/2002) kilowatt days absent from port (53/2010)	Aggregated kW day basis	Yes, similar conditions to exchange of catch quotas between MS
Cod recovery	Long-term plan for cod stocks (Council Regulation No 1342/2008)	North Sea, Kattegat, Skagerrak, West of Scotland and Irish Sea	Vessels > 10 m using regulated gears in regulated areas	Product of kW and the number of days each vessel has been	Aggregated kW day basis by area and	As above within same metiers,

			Effort for vessels < 10 m must be assessed in view of possible future inclusion	present within a regulated area	by metier (=effort group)	but constrained by CPUE between métiers
North Sea Flatfish	Recovery plan for plaice and sole in the North Sea (Council Regulation No 676/2007	Plaice and sole in IV, II	Vessels > 10 m using regulated gears in regulated areas	Product of kW and the number of days each vessel has been present within a regulated area	Aggregated kW day basis by area and by métier	As above within same metiers, but constrained by CPUE between métiers
Southern Hake and *Nephrops*	Recovery plan for Southern hake and Norway lobster stocks around the Iberian Peninsula (Council Regulation No 2166/2005)	Hake and *Nephrops* in Divisions VIIIc and IXa	Vessels > 10 m using regulated gears in regulated areas No regulatory obligation for vessels less than 10 m	Number of days present within the area	On a vessel basis Derogation possible for MS to use aggregated kW day basis	Yes, but kW days exchanged between vessels are maximum equal
Western Channel sole	Recovery plan for the sole in the Western Channel (Council Regulation No 509/2007)	Sole in VIIe	As above	As above	As above	As above

4 MEMBER STATE IMPLEMENTATION

4.1 RELEVANT REGULATIONS

The table below lists the applicability of the six management regimes to the Member States, which were included in the analysis. Although some MS are formally involved in certain fisheries, having quota for the designated stocks, they swap their quota with other MS, so that they do not participate in practice. This applies inter alia to Poland, Latvia, Ireland and Estonia. Poland swaps with Latvia for deep sea species, before using these as part of further international swaps with the result being that these two MS do not administer any effort management.

Table 6 Applicability of the regulations to the various MS

Member State	MS code	Western Waters	Deep sea	Cod	NS Flatfish	S Hake & N Lobster	W Channel sole	Comments
Belgium	Be	y		y	y			
Germany	De	y		y	y			
Denmark	Dk			y	y			
Spain	Es	y	y			y		
Estonia	Est		y					Since 2007 no fishing for deep sea species
France	Fr	y	y	y		y	y	
Ireland	Ire	y		y				No deep sea fleet left - swap quota with France
Lithuania	Li		y					Only deep sea vessels targeting black scabbard fish, RNG and blue ling
Latvia	Lt		n					International swaps with Poland for deep sea species
Netherlands	Nl			y	y			
Poland	Pl							International swaps so only manage shrimp effort (NAFO)
Portugal	Pt	y	y			y		
Sweden	Se			y				
United Kingdom	UK	y	y	y			y	no effort management applied in flatfish man plan

4.2 ADMINISTRATIVE STRUCTURES

The national institutions responsible for the implementation of the regulations are reflected in Table 4. The Ministries responsible for the implementation of the CFP in general also have final responsibility for the implementation of the effort management schemes. The actual controls are usually carried out by specialized public organizations, having staff, equipment and infrastructure required for processing of logbooks, implementation of VMS and on the spot checks – on land and at sea. In France, calculation of effort under the deep-sea species regime and the Western Waters regime is delegated to the scientific institute (IFREMER). Unlike other effort regimes, these two specific regimes involve calculation of fishing time as opposed to presence in the area.

Registration of engine power is based on declarations of the manufacturers and checked (not necessarily re-measured) by organizations responsible for maritime safety and certification. In specific cases specialized technical bureaus may be sub-contracted to measure the engine power.

Although final responsibility lies with the national governments, most MS have established procedures for regular dialogue with industry representatives to enable stakeholder involvement and their support for the measures taken. Germany allocates effort to POs to administer. In The Netherlands, which has operated an effort management scheme since early nineties, it is the firm intention to devolve the implementation of the effort management to the POs as of January 2011. The main reason for this step is to allow greater flexibility in swapping effort between the various POs and individual firms.

The majority of Member States report some consultation with stakeholders regarding effort management arrangements. Existing groups (such as Belgium's Quota Commission) or specifically-established groups (such as the UK's English Days at Sea Advisory Group) are used to communicate with the fishing industry on effort matters. In some instances consultation has created a significant additional administrative burden to agencies and industry alike. For example in Ireland the Ministerial Group on Cod Recovery Area met fifteen times in 2009.

The existence of a consultation process does not in itself ensure industry appeasement and compliance. In Sweden despite consultation, 60% of fishermen made legal challenges as the period between consultation and implementation was felt to be too short.

4.3 ADDITIONAL MEMBER STATE MANAGEMENT

Table 7 shows that seven out of twelve MS apply the effort regime according to the EU legislation without further detailing on the grounds of the specific local situation. BE, NL, ES, SE and UK apply further details to respond to specific conditions. The reasons for these details are, however, different:

- BE takes into account the size and gear, which reflect the action radius of the vessels.
- NL considers the ownership of fishing rights and/or investment obligations.
- ES seeks to improve economic performance of the fleet operating in the Western Waters;
- SE accounts for the biologic characteristics of stocks in relation to its share in TACs.
- UK allows only one gear during any given trip.

Table 7 Member State more detailed management of effort

Member State	Response
Belgium	Belgium allocates effort separately to vessels <221 and >221 kW. Smaller vessels are allowed to use all 180 days in the North Sea (and VIIde) due to their limited action radius. Larger vessels must spend at least 30 days in other areas. All vessels using passive gears may also spend all 180 days in the areas IV and VIIde
Denmark	No additional regulations.
Estonia	No additional regulations
France	No additional regulations.
Germany	No additional regulations.
Ireland	No additional regulations.
Lithuania	No additional regulations.
Netherlands	Management is not more detailed, but additional conditions are applied to allow vessels on a specific list: for BT1 and BT2 vessel owner must also own ITQs for sole and plaice Vessel must have participated in the fishery in 2006-8 and/or must have made investments decisions (ordered a vessel) by 1.1.2009.
Portugal	No additional regulations.
Spain	Western waters: A detailed management of effort for the Spanish fleet was established in order to allow fishing through the whole year by transferring or allocating fishing effort right in the different ICES subareas. The reason is that stopping fishing before the end of the year leads to important economic loss. Deep Sea Species: effort is allocated per area, split in two management units, MU 1 - national fishing grounds (VIIIc and IXa), and the MUMU 2 - other ICES areas- other ICES areas The reason for this is the biological situation of these populations.
Sweden	Sweden has separated the North Sea from the Skagerrak. The reason is that the stocks in these two areas have different biological status and that the Swedish shares of the North Sea stocks are rather small.
UK	Only one regulated gear permitted. Any change of gear between trips must be notified so check on allocations is possible.

5 CALCULATION & ALLOCATION

Table 8 presents the Member State responses when asked to describe the procedure and criteria for effort allocation under the different regimes. This occasionally varies depending upon the recipient units (self-organised fleet segments/metiers or individual vessels). In some instances where actual effort is not expected to approach that allocated, e.g. Western Waters in France, no formal allocation occurs. Instead central administrations simply monitor effort to be sure it does not exceed allowable levels.

The procedure and criteria for effort *allocation* differs between MS and between different effort management regimes, but is generally based on prior activity over a given reference period. The reference period used also varies between MS and between regimes, which can cause complications in allocation where fleets have changed markedly.

Allocation is made either on a flat rate basis with each vessel within a vessel group receiving the same number of days (e.g. in the Netherlands, Portugal and the UK), or on an individual vessel basis. Individual allocations can be based on quota allocation (e.g. Deep sea regime in Lithuania and Western Waters regime in Spain) or on the average kW days used by that vessel within the reference period (e.g. cod & flatfish regimes in Germany). These are described in more detail in sections 5.1. and 5.2 below.

Table 8 Member State procedure and criteria for effort allocation

Member State	Response
Belgium	Cod and flatfish: Management of effort takes place on period of 31/1/x-31/1/x+1. Each vessel gets same number of days at sea (180), but intermediate adaptations are implemented if required. These are also generic. When (part of) the fleet does not use its effort allocation, the access is again divided among all vessels on equal basis, .e.g. in 2009 and 2010 all vessels got additional 12 days in the 2nd half of the year, because part of the fleet was expected to remain significantly below its allocation of 180. Effort is partly allocated on spatial basis: - vessels<221 kW get 180 days – operate in the North S.,- vessels>221 get also 180 days, but may not use more than 150 in the North Sea and must consequently use at least 30 in the Irish Sea. - Fishery in the Bay of Biscay (BoB) is open in June-July and vessels must apply to get on a special list. The maximum number of vessels allowed on the list is = BEL quota/18 tonnes. 18 tonnes is considered a minimum required for a profitable fishery for a 1200 kW vessel. If too many vessels would apply than they will be selected by ballot, but usually the number of vessels applying is below the limit. Vessels that receive a special BoB fishing permit are deducted 20 DAS in cod recovery areas. Furthermore their quantity of NS sole is reduced (3kg of sole/kW). The BEL quota for sole in BoB is small (30-40 t), but if the effort allocation is insufficient, than additional effort is swapped

	with NLD.
Denmark	kW days are managed collectively by DF in 2010 (up to end of January 2011). Total no of kW days are based on 2004-2007 kW data. However, because of introduction in DK of "New management" scheme in 2007 with 30% fleet reduction (nos of active vessels) from Jan 2007 to Dec. 2008) Denmark is likely moving towards allocation of kW DAYS to individual vessel as from February 2011; but no official allocation in 2010. Individual vessel allocation ("shadow allocation") has been made based on fishing records in 2008 with possible adjustments for repair, illness periods and for new vessels introduced in the fleet from other areas.
Estonia	Deep Sea: Estonia has fishing opportunities for deep sea species but no fishing activities in past 3 years. Therefore potential effort has not been allocated. Fishing days are allocated to one fishing company that has historical catch record.
France	Western Waters: there is no allocation of effort. The vessels in this fishery (≈ 1,800 vessels) must have a Special Fishing Permit (SFP) or a regional licence (deemed equivalent to a SFP in this case). Effort uptake is monitored globally. Since the effort envelope granted to France under this regime is greater than the actual needs of the fleet, the Ministry does not consider any specific allocation on a PO or vessel basis. Deep Sea regime: until 20092009, effort has not been allocated to individual fleet segments or POs. The main management tool is the number of SFP permits delivered to the individual vessels, and their period of validity. The fishery is closed as soon as the entire effort quota has been utilised. The situation changed in 2010 with allocation of effort on a PO basis. The available effort quota (as per Reg 53/2010 equal to 65% of effort deployed by vessels having a SFP and/or having fished more than 100 kg of deep sea species, i.e. ≈ 6.9 million KWKW-days) is distributed by PO, except a fairly small national reserve equivalent to 0..07% of total FRA effort quota. All the vessels in this fishery are member of a PO. Cod regime: the effort quota available for French vessels is distributed by PO. Effort quota area aggregated by fleet segment on the same model as the EU regulation 53/2010 fixing effort limits. The key for sharing the effort quota is the historical level of effort determined on the basis of logbook data held by the Ministry and information on metiers held by IFREMER. A small part of the French fleet affected by the plan is not member of a PO. These vessels receive an aggregated effort quota monitored directly by the Ministry. As and when a PO has exhausted the effort quota available for one or several fleet segments, a fishing stop notice is published. There is no provision for a national reserve of effort quota. Sole Western Channel and Iberian hake regimes: there is no specific allocation rule. Each vessel using a regulated gear in the regulated area

	and meeting the regulation's requirements in terms of historical activity in the fishery has to obtain a special fishing permit. The individual vessels are not allowed to fish in excess of the number of days specified by the regulations.
Germany	Western Waters: Reference period 1998-2002, reference effort is calculated in the same way as fishing effort today. Cod and flatfish regimes: Reference Period 2004-2006 for is used for both Cod, and, and plaice and sole, as both are managed via Reg. 1342/2008. The average kW and the average effort per vessel in the reference period have been calculated and are the basis for the allocation of effort to individual vessels.
Ireland	Western waters: Days at sea are defined as the number of days at sea by trip in the area, rounded up to the nearest whole number, and are based on logbook data. Days at sea are allocated by metier/fleet segment, but there is no individual effort monitoring of uptake by DAFF/SFPA. Days at sea are owned by the State and not transferable or tradable. But the POs are involved in agreeing ways to manage effort allocations. For voluntary arrangements under WW, DAFF/SFPA do not restrict/allocate effort, but POs manage/monitor and areas may be closed if the ceiling is reached. With respect to allocation of remaining effort amounts towards the end of the fishing season, the annual allocation is reviewed monthly, and effort is virtually never reached or needs to be reallocated – scallop decommissioning in 2003 helped a lot to respect effort limits, and in WW, quotas are the real restriction, not effort. Cod regime: Days at sea are defined as the number of days at sea by trip in the area, rounded up to the nearest whole number, and are based on logbook data. Days at sea are allocated by individual vessel. Days at sea allowances are based on a vessels historical track record in the reference period. Days are allocated to a particular area based on a vessel's historical track record. The reference period used is based on the rules in Community Legislation and the reference periods in those rules for the cod regulation. Allocations are given on a quarterly basis to individual vessels. With respect to allocation of remaining effort amounts towards the end of the fishing season, in 2009 effort allocation first took place on an initial 3 months period, followed by a 6 months allocation, and then subject to effort being available, for a final 3 month period. In 2010 effort will be allocated on a 3 months-basis. Deep Sea: There is no deep-sea fleet left in Ireland and so effort is swapped with France. Ireland only allows some fishing for fork-beards as mixed with hake.
Lithuania	Deep Sea: Effort is allocated by Quota allocation in Atlantic Commission. Each operator has to provide request by 10 of December each year with a list of species, number of fishing days and volume of TAC should be stated in the application. The application includes all fishing grounds species and effort

	management regimes and provide all relevant documents. The quota allocation Commission has to make a decision before the 20 of December. The decision has to be based on the historical rights of the vessels. The vessels, which used the particular quota/effort during previous 3 years, are in preference to new vessels (without historical rights for the resources/effort/ground).
Netherlands	All regimes: There is no individual allocation. The fleet fishes on the total available kW-days. Access to specific areas or fisheries is regulated with two specific vessel lists: one for area 7d (24 vessels) and another for the cod recovery plan (about 200 vessels)
Portugal	All regimes: Effort is allocated based on the available quota for Portugal. Historical data is used to define the number of fishing days, which is then aligned with the quotas. Western Waters and Southern Hake & Nephrops: the number of days at sea is allocated on a flat rate per vessel. Hours used in any 24 hour period are rounded up to a whole day. Deep Sea: Effort is allocated based on the sum of the total GT/kW allowed.
Spain	Western waters and Deep Sea: Effort is allocated either to individual vessels or to Producers' Organisations (POs). In the latter case, the POs must distribute the rights among their members. In this case, members are those participating in the original census (the 300 list). Members are entitled with a right which can be transferred to other vessels in the same census, regardless of PO. Rights are not attached to the vessels thus it is possible to transfer a fraction of the ITQ or even to lease rights. Transfer between vessels of different POs requires that the vessel transferring rights moves to the PO receiving rights. The fishing rights are based on a rule of "145 vessels type", these are the number of vessels authorized to fish simultaneously in Grand Sole in the Treaty of Adhesion of Spain to the EC in 1986. One standard vessel represents 518 kW. Western Waters: "Individualized Management System" is applied, because fishermen are the owners of fishing rights and they can alter the assignment of rights carried out by the Spanish Government. They have the power of exchanging their fishing rights, choosing between two alternatives: going directly to the market or delegating in their Association the exchanges of fishing rights. In practice, the majority of the fishermen choose the second alternative. The transfer of access rights of one or several areas includes, jointly and inseparably, the proportional effort kilowatts that correspond to each vessel in each area. The vessel whose access rights are transferred should have, after the transmission, at least 210 days of fishing activity per year, including all the areas. The receiving vessel may not have more than 315 days in all areas. The available national quotas are distributed among the vessels, according to the Order APA 3844/2007. The distribution is based on the individual track record. The assigned quotas can be negotiated by the

	Associations or by each individual enterprise. The Associations or the individual ship-owners, are able to give or to exchange their fishing quotas to each other, subject to advance notification to the General Secretary of Maritime Fishing. The NAFO fleet, composed by bottom trawlers operating in the High Seas, is regulated on the basis of a closed list, or census. However, transfer of effort rights is not allowed. The quota percentages distribution for the NAFO fleet is made between the enterprises, according to the Resolution of April 12 2010, of the General Secretary of the Sea, upgrading the annexes I, II, III, IV, V, VI, VII and VIII of the Order of December 21, 1999. Deep Sea: The effort allocation is based in the following criteria (Order APA/115/2008): 1. In the first trimester of every year, the General Secretary of Maritime Fishing proceeds to distribute the quotas assigned for each management unit. 2. The quota assignment percentage for each management unit is carried out according to the historical data of catches and landings that figure in the log books and in the landing declarations corresponding to a minimum period of the previous 4 years. 3. The annual total quantity assigned to each management unit, will be the result of the application of the percentage calculated according to the section 2, to the initial quota assigned to Spain for each stock, and deducted the 3% referred in the section 4. 4. The General Secretary of Maritime Fishing will reserve 3% of the initial quota in order to compensate the possible overfishing that can take place in some of the management units. If, before December 1, it has not been necessary to make use of this reserve, the General Secretary of Maritime Fishing will distribute this quantity proportionally to each management unit, in accordance with the percentages assigned to each species (annex of Order APA/115/2008). S. hake: The effort allocation is based in the following criteria (Order APA/6/2004): 1. Maximum 30 trawling licenses are granted, of which maximum 5 licenses will be directed to the capture of crustaceans, and will implicitly involve the special fishing permission foreseen in the section 2 of the article 25 of the Law 3/2001 of March 26, of Maritime Fishing of the State. 2. Before November 30 of every year, the ship-owners of the trawling vessels or their representatives interested in trawling fishing in the IX ICES area subjected to the sovereignty or jurisdiction of Portugal included in the census settled down by this Order, will request the pertinent authorization, of annual character, indicating if it is for fish or for crustaceans, to the General Management of Fishing Resources. For the concession of the license, it will be taken into account the demonstrated habitual activity, according to the

	Order of September 30 1997. 3. The vessels will remain, at least, a total of 46 days a year in the port.
Sweden	Cod regime: Normal SE procedure when new regulations are introduced, has been applied, that is direct talks with Swedish Fishermen's Association and the written proposal is sent out to many Governmental Boards and fishery organisations for comments and considerations with a notice of the timing for replying and published on the website of the Swedish Board of Fisheries with an invitation to send comments and proposals to the Board within a fixed time. Finally the Swedish Board of Fisheries decided on a model based on historic record for the years 2005-2007 (average) and a basic allocation of 5 days for every vessel present in the area during this period. The reference years were the basis for the allocation. One big problem was the short time for the implementation including discussions with the industry. SE has been allowed an exemption for fishing with sorting grid and national rules have been implemented allowing substituting of 1 effort day with 3 grid days. The exemption has facilitated the implementation.
UK	All regimes: Flat rate allocated per vessel and gear type, but no area distinction. However monitoring is done by area to check uptake levels. Number of days at sea by trip in the area is rounded up to the nearest whole number. Modelling uses previous year's activity to predict fishing pattern for up-take management. January 2010 saw high TR1 uptake in North Sea so that tighter transfer limits had to be imposed.

5.1 CALCULATION

Member States apply very similar approaches to the calculation of fishing effort, but this differs dependent on the fishery (regulation). The different approaches to calculating a 'day at sea' are presented in Table 9 under three main categories:

D	Number of **Days** at sea by trip in the area, rounded up to the nearest whole number
H	Number of **Hours** at sea in the area
S	Number of hours at sea operating at certain **Speeds** (identified as active fishing) in the area

In this latter case, France for example totals the time spent fishing / searching, divides it by 24 and round it up to have an equivalent days fishing. Time spent steaming or inactive (as declared in the logbook) is not taken into account. This is because under the Western Waters and Deep Sea regimes, the time spent 'active fishing' is considered.

A fourth category, 'other' is identified where alternative interpretations are applied by Member States. Denmark for example, considers operations within each 24 hours making it possible for more than one trip (using the same gear) within 24 hours. By contrast, Germany

counts each departure from the harbor as one day. The Netherlands has a similar approach, but excludes time that a vessel spends steaming from one port to another.

Another approach to calculation of effort is mentioned by Portugal which considers Gross Tonnage (GT) under the Deep Sea regime by calculating effort as day x GT/kw.

As Table 9 shows, most Member States define and calculate a day at sea as a whole or part of a 24 hour period. This adds a further conservative element to effort management as effort is rounded up and counts as a whole day.

Table 9 Member State calculations of days at sea

MS	Western Waters	Deep sea	Cod	NS Flatfish	S Hake & N Lobster	W Channel sole	Additional info from MS
Be	H		D	D			Under 4 hours = 0 days, 4-24 hours = 1 day
De	H		D	D			Passage through an area with > 6 knots not counted. Smaller vessels have a problem as they sometimes can leave the harbour only for few hours due to weather conditions, but each time they loose a whole day at sea of their effort allocation.
Dk			O	O			Per 24 hours started (1 kw day may thus allow for more fishing trips within 24 hours)
Es	D	D			D		Trip lengths 7-12 for western waters, 1-7 for deep sea, 1-2 days for SH&NL
Est		D					Estonian Fishing Act (§ 13^4(7), defines a fishing day as a calendar day during which a fishing vessel is present in waters where fishing is regulated, regardless of whether fish are actually caught.
Fr	D	S	S		D	D	All - days at sea, but also take into account hours at certain speeds in the area.
Ire	D	H	D				Swap deep sea quota with France
Lt		D					
Nl			D	D			Sea time starts as soon as the vessel crosses the coast line (lines between buoys), except when steaming from one port to another, which is not counted. Every first hour (or in fact minute) of a new 24 hour period counts as a day.
Pt	D	O			D		Total GT/kw for deep sea
Se			H				
UK	D	D	D			D	No effort applied in flatfish plan.

For some effort regimes, the administration may adopt specific procedures to calculate fishing effort. For example, under the cod regime, France considers the fleets differently. For

vessels less than 15 m and based in a port located in an area concerned by the effort regime, time fishing is the whole duration of the trip. Fort vessels less than 15 m and based in a port located outside an area regulated by the effort regime, fishing time and gear are as per logbook declaration (area declared taken into consideration). For vessels greater than 15 m, VMS is used to determine if the vessel was fishing in the regulated area declared in the logbook.

The calculation of effort uptake is mostly based on information obtained through the logbooks and cross checked with the VMS data. The latter are used to verify the fishing area (*i.e.* statistical rectangle) declared in the logbook and/or if the vessel is fishing or not when the effort regime considers fishing time as opposed to presence in the area (*e.g.* Western Water regime, Deep Sea species regime). In this case, vessel's speed obtained from VMS is used as fishing indicator, with vessels operating below a certain speed assumed to be fishing. For example, in France, the speed threshold is set at 6 knots.

Some MS use also sales notes or pre-notification procedures when vessels leave or arrive in port or a fishing area, but this is not common. For vessels over 15m gear is always identified using logbooks, with ad hoc on the spot checks.

The survey demonstrates that the use of several gears during the same trip is most unusual. A small number of countries allow only one gear on board at any time, e.g. Belgium and the UK. In all other MS, carrying more than one gear on board implies that the sea-days are counted against all gears, so that with two gears the use of effort is double the number of calendar days spent at sea.

There exists a certain ambiguity in areas where vessels are permitted to participate in regulated as well as unregulated fisheries. Carrying unregulated gears may not be taken into account (e.g. gillnets or handlines for non-quota species).

Determination of effort use by the small scale fleet differs according to the specific conditions of the fishery and the MS. Many MS indicate that there are no vessels below 10m participating in the regulated fisheries. Spain estimates the effort of the small scale fleet (<10m0) using the data of the preceding year. In the absence of updated figures, France assumes that the effort has remained constant at the level of 2003. Some MS have imposed logbook obligation also to the vessels below 10m (BE, NL, IE, PT,) so that the necessary information can be drawn from there.

5.2 ALLOCATION

Allocation of effort to individual vessels is quite different in the various MS and therefore the practice of each MS is discussed separately.

In Belgium, all vessels get in principle the same allocation of 180 days, but small amendments may be applied according to the size of the vessels and fishing rights obtained in the Bay of Biscay fishery. Fleet <221 kW operates in the North Sea on the 180 days. Vessels >221 kW must spend at least 30 days in the Irish Sea, so that they can fish at most 150 days in the North Sea (cod and flatfish). The fishery in the Bay of Biscay is open in June-July and vessel must apply to get on a special list. The maximum number of vessels allowed on the list is calculated as Belgian quota/18 tonnes. 18 tonnes is considered a minimum required for a

profitable fishery for a 1200 kW vessel. If too many vessels would apply than they will be selected by ballot, but usually the number of vessels applying is below the limit. Vessels that receive a Bay of Biscay fishing permit are deducted 20 days in cod recovery areas. Furthermore their quantity of NS sole is reduced. The effort regime is administered fully by the Belgian authorities, but regular consultation with the industry takes place within the 'Quota Commission'. In case that effort consumption is too slow, additional effort is allocated to all vessels on a flat rate basis during the last part of the year. Complaints from individual fishing firms are dealt with in the Quota Commission., but an explicit procedure does not exist.

In Germany, 80% of the effort is allocated to the POs, on the basis of a defined reference period. The POs are empowered to allocate the days to their individual members. The remaining 20% is allocated directly to individual vessels, which are not members of a PO. In order to make the best possible use of the available effort, every vessel owner must declare in November whether he will use his effort allocation or not and depending on these declarations an additional allocation may take place. There are intensive, almost weekly, contacts between the ministry and the industry representatives. A specific procedure to deal with complaints does not exist, but normal judicial procedures can be followed.

In Denmark, effort allocation to individual vessels is carried out centrally on the basis of their track record in 2008 with possible adjustments for repair, illness period, etc. the industry has requested that this task be derogated to the 'quota pools', but no decision has been taken as yet. Reference year 2008 is used for the individual allocation in order to account for the new management scheme introduced in that year, which has led to a 30% decrease in the size of the fishing fleet and changes in fishing pattern. There is a formal procedure to appeal to the ministry for a higher number of kW-days, which has been amply used as 40% of decisions have appealed. Vessel owners were informed what their allocation would be in 2010 in case individual allocations were to be implemented, but in the end they were not.

The three Baltic States are involved only in the deep sea effort regimes. Latvia swaps its rights with Poland, while in Estonia only all deep sea rights are allocated to one fishing company, which has not used them since 2007. In Lithuania 50-80% of the effort allowed in certain areas for prawn fishing is distributed to 4-5 firms involved in this activity. The allocation is done on the basis of effort use in the preceding 3 years. They are not allowed to trade among themselves. Unused effort 'goes back' to the ministry, which may allocate additional effort from the reserve of 20-50% upon receiving a request from the firms. A specific appeal procedure does not exist. Lithuania manages only prawn in certain areas through effort, other deep sea species are managed by TACs and effort is monitored, but not restrictive.

Spain is involved in three distinct fisheries, subject to effort regimes, and approaches to effort allocation are rather different. In the Western Waters (NAFO) effort is allocated to individual vessels on the basis of their track record of daily catches of main species (Atlantic halibut) in combination with historical effort allocation. Vessels fishing for cod in NAFO are allocated effort according to the available quota. In the S. hake fishery the effort allocation are to individual vessels. In case of the Deep Sea fishery, the fleet fishes on the total allocation, although some exceptions exist, e.g. for swordfish where individual allocation is applied. The effort is managed jointly by the administration and the relevant ship-owners associations or POs. Also the reference periods used for the allocation of effort are different: for Western

Waters 1973-1978, but for the Gran Sol area 1998-2002. For the Deep Sea and S. Hake fishery the preceding year is used. The effort regime does not contain a formal appeal procedure.

France deals with five effort regime in different ways. Effort for Deep Sea and Cod fisheries is allocated to the POs[5], which have the possibilities to swap effort between them and allocate it to their individual members. For vessels that are not members of a PO, the Ministry manages the effort uptake centrally. The allocation to POs takes place on the historical basis of the years 2004-6.However, the possibilities for the POs to manage the effort up-take are limited as they receive only monthly status reports from the administration. The Ministry issues fishing stop notification as and when effort quotas for certain fleet member of certain PO are exhausted[6]. The French Ministry is currently modernising its fisheries information system and has the objective to provide effort information in near real-time to Pos. Effort allocation in Western Waters is well above the present level and therefore only global centralised management is applied. Under the Sole in the Western Channel and the Iberian S. Hake effort regimes, vessels eligible to a SFP receive allocation maximum effort allowance from the administration as per the relevant EU regulations[7]. France does not make use of the derogation possibility to manage effort on an aggregated KWKW day basis. There is no specific formal objection procedure.

Ireland is involved in three effort regimes – Western Waters, Deep Sea and Cod. However, in case of Deep Sea most fishing rights are swapped with France. In Western Waters the fleet fishes on one global allocation, with the exception of the crab fishery, where the POs manage a voluntary scheme with global ceilings, but no individual allocations. Effort on Cod is allocated to individual vessels on quarterly basis and monitored by the ministry. The allocation is based on their historical track record of 2004-6. There is an intensive dialogue between the administration and industry, which makes a formal objection procedure unnecessary.

The Netherlands deals with three effort regimes – Plaice and sole, Cod and W. Channel. Specific licences exist for each fishery and the vessels which have access to those fisheries fish in principle under the total national effort ceiling. Individual allocations were abolished in 2004. Until 2010 management of effort management was responsibility of the ministry, but there is firm commitment to derogate this responsibility to the POs (which already manage the quota) as of the beginning of 2011. The main reason for this transfer is the expectation that effort limitations may become restrictive and management by POs would offer better possibilities transfers and efficient and full use of the available kW-days. There is an on-going consultation between the ministry and the industry representatives. Objections against government decisions (in relation to allocation of a licence for a specific fleet list) can be lodged under normal legal procedures, but no specific procedure exists.

In Portugal effort allocation in S. Hake fishery are done on individual basis, taking into account historical catch rates and effort levels the previous year, while Western Waters and Deep Sea fisheries operate under one common ceiling. The system is operated by the ministry, without

[5] Ex: Arrêté du 15 mars 2010 (NOR: AGRM1005123A)

[6] Ex *Avis* published in JORF dated 6 June 2010 (NOR: AGRM1010134V)

[7] Ex: Annex II C of Reg. 53/2010 says that a vessel fishing for sole in the Western Channel with static nets with mesh size < 220 mm cannot be present more than 164 days in the area. The French Ministry uses this maximum effort allowance mutatis mutandis

involvement of the POs. The number of days is determined on the basis of historical data and effort which was previously required to meet the fishery objectives.

Sweden implements a system of individual effort allocations in the cod fishery. Each active (>1 day fishing in preceding year) vessel is given 5 days, while the remaining allocation is based on the reference period 2005-7. The fisheries in the North Sea and Skagerrak have been split into two separate management units and effort allocations are done accordingly. However, vessels using grids are exempted and their effort is managed at a national level. The Swedish fishermen association is involved during the policy preparation phase and comments on government proposals. The POs are not involved in the implementation of the system. In spite of the consultation process, about 60% of the fishing vessels made legal appeals against their allocation. By April 2010 no court has overruled the decision made by the Swedish Fishery Board.

The United Kingdom has to deal with four effort management regimes – Western Water, Deep Sea, Cod and W. Channel. Effort management is not applied under the Flatfish plan as relevant vessels face more restrictions under the cod recovery plan. The UK applies a flat rate individual allocation per vessel and gear type, but not specified by area or fishery. The allocation is based on the reference period 2005-7. The effort up-take is monitored by fishery and additional restrictions may be imposed if necessary. The POs are not involved in the implementation. However, in England and in Scotland separate consultation processes with the industry take place. No specific appeal procedure exists.

The above overview shows that the different MS have developed specific approaches to effort management ranging from detailed individual allocation based on historical track record to flat rate general allocation. The professional organizations are mostly consulted during the policy preparation phase and in some countries implementing powers have been derogated to them. In several MS fishery specific appeal procedures exist, while in the others general legal steps can be taken.

Table 10 Summary of main characteristics of effort allocation

MS	Approach to allocation	Role of professional organizations	Reference period for individual allocations
BE	Flat rate, with adaptations by engine size and area of activity	Consultation in 'Quota Commission'	2004-6
DE	80% allocated to POs, 20% to non-organized vessels	POs are empowered to distribute to individual members.	2004-2006 for Cod Plan (1342/2008), 1998-2002 for Western Waters, 2004-2006 for Plaice and Sole (implemented via CR 1342/2008).
DK	Centralized allocation on basis	Has been requested and	2008

	of individual track record in 2008.	is under discussion	
EE	Only one vessel / company involved, but since 2007 no high seas fishing	Not relevant	Not relevant
ES	Mostly individual allocation with exception of Deep Sea fishery	Joint management tasks.	According to fishery: Western Waters: 1973-1978, Gran Sol: 1998-2002. Deep Sea and S. Hake: preceding year
FR	Depending on fishery: allocation to POs, individual vessels or a global envelop.	POs involved in Cod and Deep Sea.	Cod and Deep Sea allocated to POs on basis of 2004-6
IR	Individual allocations for Cod; Global ceilings in Western Waters.	Voluntary scheme for crab in WW; Intensive dialogue.	2004-6 for Cod.
LT	50-80% of total effort is allocated at the beginning of the year to individual firms	Vessel owners can raise their objections during a meeting.	Preceding 3 years.
NL	Fleets fish under the total national ceilings managed by the authorities	POs to assume responsibility in 2011.	Not relevant.
PT	Individual allocation for S. Hake; General ceiling for Western Waters and Deep Sea	No involvement.	Preceding 3 years.
SE	Individual allocation.	Consultation during preparation.	2005-7
UK	Flat rate allocation	Consultation during preparation.	2005-7

5.3 TRANSFERS & RE-ALLOCATIONS

Table 11 below presents Member State responses when asked whether effort can be transferred between vessels or vessel groups, and to what extent this has been used in practice. Within this report a transfer is defined as the movement of an amount of effort from one vessel to another vessel, while a re-allocation is the distribution of (additional or un-used) effort across a regulated fleet.

In relation to transfer of effort allocations between vessels several possible situations occur:

- When vessels using the same regulated gear operate under a global effort ceiling, transfers are irrelevant.
- Transferring effort between fisheries is permitted in some Member States but uncommon (e.g. Germany, the UK), mainly due to the complexity and the effort penalties imposed on transfers (eg.10-20% of amount being transferred is removed per transaction).
- Three MS do not allow transfers at all – Belgium, Lithuania and Ireland.
- MS allow mostly transfers of individual effort allocation within a fishery. Transfers take place as individual vessels optimize their activity.
- In fisheries where effort management was derogated to POs (Germany, France) transfer within the POs is at their discretion. Transfers between the POs have to be notified and approved by the ministry.

In fisheries where transferring of effort allocations is allowed, reallocation of unused effort at the end of the year is not an issue as the 'market will do its work'. When swapping is not allowed several options are open:

- Some MS, such as Portugal and France do not take any action with the consequence that some effort may remain unused. This occurs probably especially when the effort is not constraining the fleet in its regular activity.
- Other MS (Germany, Spain, Denmark and the UK) review the status of the up-take of the effort and subsequently redistribute according to the identified needs.
- In order to avoid shortage on effort by the end of the year, some MS distribute allocations of effort on quarterly basis. This allows also a gradual roll-over from quarters with low effort up-take.

Table 11 Transfer & Re-allocation of effort in Member States

Member State	Response	Transfers	Re-allocation
Belgium	No transfers allowed. If uptake is too low an additional allocation of DAS done for the rest of the year, also on flat rate basis.	Not allowed	Flat rate reallocation.
Denmark	No transfer of effort between Danish vessel groups allowed since February 2009. Transfer of kW-days between individual vessels will be possible when appeals on initial allocation have been decided on. Reallocation between segments will be made by DF if needed	Allowed within same effort group Not between effort groups	According to need
Estonia	Inside each fishing segment (Estonia has 4: distant, Baltic trawling, Baltic coastal, inland) effort can be transferred freely and it is often used in practice. No possibility to transfer from one segment to other. Reallocations cannot be used because of historical	Allowed within same effort group Not between effort groups	No reallocation

	catch base and ITQ		
France	Under the deep sea regime and the cod regime, POs are free to exchange effort quotas between them and with fleet segments of other Member States, what they do in practice.. For the cod regime, exchange of effort quota must follow the rules set out by Reg 53/2010. The POs must notify the Ministry of any exchange. The POs use part of their effort quota in exchange for other fishing possibilities like landing quotas on other stocks. These landing quota are also distributed on a PO basis. The same apply for exchanges with other Member States. According to information gathered during interviews, there are some exchanges of fishing possibilities under the deep-sea regime. Exchanges under the cod regime exist, but the effort quota system for this fishery is rather new, so the situation may evolve. For the western waters regime, the western channel sole regime or the Iberian hake regime, there are no possibilities of exchange between vessels. For the first regime there is no need, and for the second and third regime, the French Authorities do not use the pooling derogation. No specific arrangements for re-allocation. Fishing opportunities open as long as the total national effort quota is not exhausted	Between POs for Cod and Deep Sea and within the same gear category Not between effort groups	No specific arrangements
Germany	The Western Waters regulations fix a maximum of kW-days for Germany, which must not be exceeded. Within this limits, exchange between vessels etc. is possible. Transfer has been used, but not very frequently. Request to exchange effort usually increase towards the end of the fishing period. It becomes relevant, when effort allocation does not fit to quota. Examples are cod and Pollock; cod catches by gillnet and fisheries for anglerfish for instance are near to closure at present. If practiced, it strictly follows the provisions of CR 237/2010, Art. 8. In line with this regulation, effort can be exchanged 1:1 or at a lower rate. POs can allocate/redistribute their effort internally. For the declaration day November 1st, every vessel	Within POs at their discretion Between POs upon approval by ministry	Private exchange and public action if needed

	owner has to declare if he still expects to use his remaining effort allocation. Effort no longer needed is reallocated by BLE		
Ireland	Under the WW scheme, effort uptake is monitored and managed by the POs and is not allocated on an individual vessel basis. Under the cod regulation in Ireland it is not permitted to transfer/trade individual vessel allocations Allocation is done using frequent meetings to determine allocations on three monthly basis so 're-allocations' done then.	Not allowed	Quarterly allocations
Lithuania	At the beginning of the year only 50-80% of the effort is allocated to the enterprises/vessels. The remaining effort is allocated in accordance with the needs of particular firms, after they apply for it. It is not allowed to transfer permit between vessels. Only if the individual quota/effort are not utilised by 50% by the 1st of October the residual could be allocated to the other vessel of the same user, however if it is not possible, the residual is allocated to the other resource users. There is no transfer between vessel groups, as the number of vessels is very small and there are only high sea vessels involved in the fishery.	Transfer not allowed	Central reallocation if 50% of effort unused by October.
Netherlands	Main problem is that the effort regimes hampers shift to more responsible fishing, away from to beam trawl to new gears as sumwing and pulsetrawl. The introduction of new gears, characterized by new catch composition, which may require different exchange ratios of kW-days (1:1 vs 1:16). For the time being this is an unresolved problem because of the lack of sufficient data. The structure of the effort regime is not well adapted to situations when technology changes. In 2009 5 transfers have taken place between the 'baskets': BT1 to TR1, TR2 and GN (963.000 kW-days) 2 times BT2 to TR1 (9.360.000 kW-days) Since 2009 the effort has been divided into quarters, so that some distribution throughout the year is achieved in this way. This will change in 2011, when	Transfer is possible, upon approval of the ministry.	Quarterly allocations

	POs get the responsibility		
Portugal	Effort can be transferred in the Hake & Nephrops fishery in accordance with the yearly EU regulations (Annex IIB for TACs and Quotas). Frequency of this event varies in result of demand for products of this fishery and others. If the allocated days are not used they are lost. If quotas are not reached (except for swordfish), they are also lost.	Allowed in S. Hake & Nephrops fishery	No re-allocation of unused effort.
Spain	Spanish fleet under Western Waters and Deep Sea Species regimes is entitled with a right which can be transferred to other vessels in the same census, regardless of PO. Rights are not attached to the vessels thus it is possible to transfer a fraction of the ITQ or even to lease rights. However, transference is always done between vessels of the same census. Transference between vessels of different POs requires that the vessel transferring rights moves to the PO receiving rights. The majority of the fleet under Western Waters and Deep Sea Species regimes uses the allowed transferability. In the NAFO census there is not transferability of fishing effort rights. The juridical bases for the effort transfers in Western Waters are: Real Ordinance 1596/2004, of July 2, regulating the transmission of fishing possibilities between vessels belonging to the Census of the high seas fleets and longliners bigger than 100 GRT that operate inside the NEAFC geographical limits (Article 4. Transmission of fishing possibilities). In 2009, 24 applications of definitive transfer of fishing possibilities were presented. Order ARM/3812/2008, of December 23, whit the distribution and administration conditions of the quotas assigned to Spain for demersal species, in non-Spanish Community waters of the Vb, VI, VII and VIIIa,b,d,e ICES areas. The **Article 5** allows quota exchanges between the Associations or the individual ship-owners belonging to the same census, previous notification to the General Secretariat of the Sea. Quota exchanges whit other MS are also allowed. The juridical base for the effort transfers for Deep	Transfer allowed within same effort group Not between effort groups	Would be possible, but not practiced as left to industry to transfer.

	Sea Species is the **Order APA/**115**/2004, Article 3,** and **Council Regulation (EC) No 2347/2002** (Deep-sea fishing permits). The juridical base for Southern hake & Nephrops is the **Order APA/6/2004.** In the **regulatory scheme** of the fishing agreements with Portugal, there exist 30 available licenses. The 27 active vessels in 2007 deployed an effort of 5.494 fishing days (1.174.532 kW). In Portugal waters there is not an obligatory weekend stop, so 6 vessels overcame the maximum allowed days, and they received transfers of fishing days from vessels belonging to the Portugal trawling census subjected to the Recovery Plan of Southern Hake and Norway lobster, keeping in mind the norms established for such a case in the annex IIB of the **Council Regulation** (CE) 41/2007.		
Sweden	The Swedish Board of Fisheries (SBF) has decided on a very liberal policy on any transfer. Practically all applications for transfer have been approved. Normally it takes no more than 10 workings days for a fishing vessel to have a transfer approved and the new allocation to have legal status. During the full year in which the regime has been in force about 40% of all the vessels have been engaged in transfers. Fishing vessels can lend, lease or buy days from each other and therefore there are no remaining days.	Allowed	Would be possible, but not practiced as left to industry to transfer.
UK	Transfer or trade of effort is permitted. MMO were notified of 24 transfers between Feb and May 2010. Some at top of limit are doing a lot of transfers. But the constraints and penalties (10-20% per transfer) have limited market activity. If see that there is a lot of unused effort, MMO would stimulate transfer market by reducing constraints e.g. remove limits on transfers. But this has not happened yet. An Impact Assessment of options to increase scheme flexibility is being proposed.	Allowed	Encourage private transfer rather than central reallocation

6 MONITORING & VERIFICATION

There are three parameters used in the management of fishing effort:

- The capacity of the fishing vessels expressed in kW of main engine
- The fishing gear used by the vessel
- The time during which the vessel is deemed active as per regulations. Time is usually expressed in days

6.1 FISHING CAPACITY EXPRESSED IN KW

The situation is very much the same across all Member States: engine power used by the management authorities is the value of the engine power provided by certification bodies to the National authorities in charge of registering vessels under the domestic flag (in general, the Authorities in charge of transport). When the owner of the vessel changes the engine, the new value is entered into the fleet register by the same transport authority. The value of engine power used is the value entered in the vessel register which is updated as and when any change occurs.

While four MS report initial verification of engine power, none have declared having systematic verification procedures of engine power so far. Engine power input in the Fishing Fleet Register is verified upon registration of the vessel by National Authorities or by third-party certification bodies or as and when any modification request is submitted. Only Netherlands mentions a limited number of checks annually by the Maritime Inspection Service with additional internal checks carried out by the Producer Organisation.

Table 12 Member State Verification of engine power

Member State	Verification	Comment
Belgium	y	Verification by Zeevaartinspectie (Ministry of transport), measurement is repeated when alteration of the propulsion system take place
Germany	y	engines are inspected (by Germanischer Lloyd AG, Hamburg) and sealed
Denmark	n	No procedure implemented by DF. Verification will be implemented in 2011 as required by Council Regulation (EC) 1224/2009
Spain	n	Fishing vessels register and documents provided by certifying authorities
Estonia	n	Not verified
France	n	This variable has not been subject to control / verification so far. Will be according to new control regulation.
Ireland	n	Marine Survey Office certificate
Lithuania	n	Fishing vessels register and documents provided by certifying authorities
Netherlands	y	Marine Inspection Service and POs also carry out checks
Portugal	y	An administrative body (IPTM – Instituto Portuario e dos Transportes Maritimos) verifies each new vessel and certifies the engine (kW/RPM) before it starts its activity. Any alterations to the propulsion unit must be declared and re-inspection occurs
Sweden	n	Not verified
United	n	But new testing being developed by MMO and under MARPOL vessels

Kingdom		above 335kWkW already tested for emissions

The situation will change in 2011 as the newly adopted control regulation (Reg 1224/2009) introduces an obligation for Member States to verify engine power (art. 39 to 41) of fishing vessels.

Table 13 Member State keeping and updating vessel lists

Member State	Response
Belgium	National register and lists of vessels are updated continuously; a vessel can only be listed if on the CFR. CFR is updated and cross-checked once in 3 month. However, there usually very few changes as the BEL fleet has only 90 vessels.
Denmark	FD register up-dated on a daily basis (fishing licenses). EU fleet register is based on national register with the FD and regularly up-dated.
Estonia	The list is updated every time there is a certain change reported to the Ministry. Due to the relatively small size of fishery it is possible to this continuously, immediately if something changes (i.e. there is not plan for some regular checking)
France	The authorisation to fish under a certain regime (SFP or licence) is one of the additional variable to the records of French register of fishing vessels like the name of the owner and the crew lists, all part of the overall fisheries information system used by the Ministry. The fishing fleet register and its associated variables are updated on a daily basis as and when any change occurs. Changes are entered into the system at a decentralised level for minor changes, but changes with possible impacts in relation with EU regulations (changes in LOA, GT, kW, SFP) must be input centrally under the responsibility of DPMA. There is no cross-checking with the Community Fleet register per se. The records in the CFR for France are those transmitted quarterly by the French Authority. They are merely a snapshot at a given date of a selection of variables as required by the EU regulations.
Germany	Vessel lists are linked to the national fleet register. For 1342/2008 and 676/2007: whenever changes occur, new lists are published on the BLE website etc. Changes are published within 20 days, as required by the Commission. For other list, regulations have lower requirements concerning publication and a lower number of German vessels are involved, but changes are also published where applicable.
Ireland	There is a days at sea authorisation list, and all vessels have to be on the Fleet Register to be on it. If vessels lose their fishing licence for any reason effort

	authorisation immediately lapses. All Irish vessels must have a Marine Survey Office certificate, and any new certificate is automatically and immediately notified to DAFF. With respect to cross-checking of vessel characteristics, any change in engine power requires vessels to leave the vessel register and then to re-enter it, so it is automatic for DAFF to know and be informed about any such changes. With respect to cross-checking of other vessel characteristics (e.g. gear use) logbook cross checks are undertaken, as well as inspections at sea and in port. VMS is also used. For any discrepancies, the legal process is followed as specified in the Sea Fisheries Act. Section 28 deals with penalties.
Lithuania	There are only few high sea vessels fishing deep sea species in Atlantic. They are all tracked by VMS and well known by staff working in the fisheries administration. All additional changes (in case of vessel sale and etc.) are made when the information is provided by vessel owner to the fisheries administration.
Netherlands	The two vessel lists have been set up on historical basis. Updates take place whenever relevant (i.e. when something needs to be changed). The national vessel list is updated at least once a month, sometimes more often if required. Cross check with the EU register takes place at the same time. When a 'new' vessel enters the fleet it is checked whether it has been deleted in the register of its country of origin, if relevant. However, there seems to be a general problem. The MS are obliged to update the fleet register every 3 months, but can do also updates in between. This means that EU Fleet Register is often 3 month behind, which makes checks difficult. If needed the new owner is requested to provide a declaration that his vessel has been deleted from the register of the country of origin.
Portugal	The vessels are verified annually, alterations to the data are communicated as they occur. The data is cross-checked with the community fleet register. Any alterations to the Community fleet register are made every 3 months, according to EUEC regulations. An administrative body (IPTM – Instituto Portuario e dos Transportes Maritimos) verifies each new vessel and certifies the engine (KWKW/RPM) before it starts its activity. Any alterations to the propulsion unit must be declared and re-inspection occurs.
Spain	The juridical basis for the Entry-Exit Regime is the article 13 of the Council Regulation (CE) nº 2371/2002, and the articles 6 and 7 of the Regulation (CE) nº 1438/2003 of the Commission. The Spanish legislation incorporated this obligation with the publication of the Real Ordinance 1048/2003 of August 1, 2003. The Spanish fleet affected by Western Waters regulations and Deep Sea Species regulations belong to a vessels list called— 'the 300 list' (although

	nowadays it comprises around 170 vessels due to decommissioning). This list was established to limit the number of vessels and fishing effort allowed in Community waters. The completion of the allowed fishing effort per vessels and per area is monitored through VMS.
Sweden	The list is updated several times a week and the vessel characteristics are automatically taken from the Swedish Fishing Vessel Register, which in principle is identical with the Community Fishing Fleet Register.
UK	UK registry of shipping (held in Cardiff) – this feeds directly into CFR and is updated daily. A new engine verification test is being introduced by Marine Management Organisation (MMO)

6.2 FISHING GEAR USED

In all cases, correspondence between the fishing gear declared in the logbook and the fishing gear is verified through physical inspections of fishing vessels at sea and in port before the fishing trip and/or upon return to port. Most recovery plans involving limits on fishing effort impose minimum inspection rate to Member States. Denmark declares using also hail in/out information for applicable vessels, i.e. >10m. No other verification methods of the gear declared as being used have been identified in Member States

6.3 TIME AT SEA

For vessels equipped with VMS (> 15 m), Member States cross-check logbook declaration with VMS data to verify declared presence and time spent in a zone. When relevant (effort regime with fishing time as measure of period as opposed to presence) vessel's speed is used to determine if the vessel is fishing or not, with the assumption that a vessel is not fishing when detected steaming at a certain speed (i.e. 6 knots in France).

In addition to VMS, Belgium, Denmark, Spain, Ireland, Netherlands, Sweden and the United Kingdom use the hail in/out messages to cross check declarations on time fishing. According to Community legislation, fishing vessels have to report in logbooks time /hour entering / exiting in a regulated zone if fishing in stock recovery area or Western Waters, as well as catches onboard. This provides an alternative source of verification of time at sea.

For all vessel length classes, Belgium, Denmark, Ireland and United Kingdom also use sighting information from airborne or seaborne inspections or from port inspections to verify logbook declaration.

The following table (Table 14) details the sources of information used by Member States to verify time at sea as considered in the various effort management regimes.

Table 14 Member State verification of fishing activity

Member State	Hailing in and prior notification	VMS and hailing in exclusion	Log book cross checks	Other	Comments
Belgium	✓	✓	✓	✓	reports from port authorities
Germany		✓	✓		
Denmark	✓		✓		reports from port authorities and

					sighting information
Spain	✓	✓	✓		
Estonia		✓	✓		
France			✓		
Ireland	✓	✓	✓	✓	
Lithuania		✓	✓		
Netherlands	✓	✓	✓		logbooks for <15m
Portugal		✓	L		
Sweden	✓	✓	✓		
United Kingdom	✓	✓	✓	✓	Reported sightings and inspection in port

Vessels less than 10 m

Member States have few alternative independent data flows to verify effort data for vessels less than 10 m, and consequently do not verify data on effort obtained through logbook declarations or sales notes (when applicable) and/or from specific monitoring schemes using data to be collected under the Data Collection Framework.

However, at least Denmark, Spain, Ireland and the United Kingdom use results of inspections (incl. sightings) to verify effort data for some vessels of the less than 10 m length class (presence / absence from port or from regulated fishing grounds).

6.4 COMPLAINTS PROCEDURES

Table 15 below presents Member State responses when asked about their process for managing complaints arising from effort management decisions. There is a difference in the extent to which complaints procedures are formalized. Some such as Ireland and the UK have established an industry consultative group that meets frequently to share information and resolve issues. While this consultation does appear to minimise complaints, it does not prevent the possibility of industry complaints and court action by individual operators.

Table 15 Member State complaints procedures

Member State	Response
Belgium	There are on average about 5 complaints /year, regarding access to specific areas and related interpretation of historical track record. The complaints are usually submitted in writing to the Quota Commission, which resolves them on ad hoc basis. No objection procedure as such. If relevant the fishermen can submit their complaint to courts, through normal legal procedure, but that has never occurred in relation to effort regimes. The low level of complaints is a consequence of egalitarian and transparent effort allocation.
Denmark	Vessel owners informed of the initial allocation by area/gear (on the basis of

	2008 fishing record) and the opportunities for applying to DF for extra days (cf. D3). FD decisions can be appealed to the Minister of Food, Agriculture and Fisheries before end of April 2010. 40% of the decisions have appealed. Some vessels have received additional allocation of kilowatt-days based on an estimate of the average time for vessels in the sea area in 2008 by the capture of certain allowances. The rule is in § 193, paragraph 2 in Regulating Order for 2009. In each decision described how the Directorate of Fisheries reasons for it. By the decisions in individual cases, the Directorate of Fisheries was based on a series of tables based on the Directorate of Fisheries records that show the average time spent on species gears at sea level in a targeted fishery. The tables are also varied in relation to engine size. Each table shows how many kilos of fish which are caught an average of one day in a targeted fishery for example, cod. It also shows also how many pounds of by catch of other species are caught an average of one day, when fishing targeting in this case cod.
Estonia	Again, due to the small size of the fleet complaints are handled when they are received. In Estonia, typically, all complaints to the Ministries (and not just concerning the fishery) must be answered by officials in 2 weeks (irrespective of the type of complaint).
France	In France, there is no formal procedure to handle the complaints in relation with effort regimes. Complaints are first handled within POs when effort quotas are distributed by POs (deep-sea regime, cod regime), then directly between the PO and the Ministry. For other regime, complaints are dealt with on an individual basis. The number of complaints has been reportedly very low. In most cases, the problem is solved by checking the data used to calculate the effort uptake.
Germany	There is regular direct contact between a small number of persons concerned with effort management in the sector and the responsible officers at BLE. CR 1342/2008 required particularly high coordination effort between both sides, but the situation is generally the same for all regimes. Where necessary, there are contacts on daily basis. If no agreement can be reached in this way, the industry can hand in formal complaints to BLE. In very few cases, where the industry felt BLE was interpreting EU-regulations in a wrong way, legal actions where taken (or it has been threatened to take them) by the industry. Most conflicts concern the fact that quotas do not fit to effort or that vessels have been modified after the reference period and their reference does not fit to the kind of fisheries they want to practice now. In most cases, solutions can be found (exchange of effort etc.).
Ireland	A Ministerial Group has been set up for the Cod Recovery Area, and met an estimated 15 times last year. DAFF have also established an industry consultation group that met very regularly on a weekly basis when the cod

	effort regulation came in to operation. Regular government/industry 'Whitefish meetings' are used to discuss WW effort. No formal complaints/objection procedure is necessary under either regulation due to involvement of industry in monthly quota/effort meetings between stakeholders, and the fact that POs deal with the voluntary scheme for the WW allocation. However, that is not to say that the industry is happy with effort management. Principal complaints relate to perceived problems with a) administration and meeting time involved, and b) different reference periods for effort and capacity in the same regulation, and c) the use of crab effort in WW regulations (as already noted, effort allocations for western waters and deep sea are not at this stage fully utilised so no need to put constraints on the vessels. Crab effort is however a problem in the western waters and constraints are in place). Industry has commented '*The automatic 25% reduction in effort each year when the biomass targets are not reached is a major cause for concern particularly as it is now not in conformity with new advice on MSY which ICES will provide for the first time this year at the request of the Commission. Furthermore why are these biomass targets laid down as absolutes when the whole regulation is about setting appropriate fishing mortality and deriving the TAC down from this fishing mortality?*
Lithuania	Not relevant, as there is very low number of the vessels and the rules are quite precise.
Netherlands	As there are no individual allocations, complaints are rare and regard only 'getting a place on one of the two lists'. In the past two years there have been about 15 objections by vessel owners who claimed a track record, which would allow them to get a specific permit. The objections are submitted to the Dept. of Law and Legal protection of the Dienst Regelingen (Directorate within the Ministry charged with implementation of the EFF and agric. Support). About 5 have been approved as justified and the other 10 have been refused. One of the claimants now turned to the court to get the approval. Ruling is expected in January 2011.
Portugal	Allocations are communicated to the fisheries sector who then voices their opinion directly to DGPA as well as to the EU. This is a standard procedure for all fleets/measures.
Spain	The effort management of Spanish fleet affected by Western Waters regulations and Deep Sea Species regulations is centrally managed from Madrid (*Secretaría del Mar*). The system operates in an automatic way to monitor and track that each vessels do not exceed its individual fishing effort allocation leaving little room for complaints regarding the effort management. When a formal compliant occurs, the *Dirección General de Recursos Pesqueros y Acuicultura* of the *Secretaría del Mar* establishes effort management Resolutions. The sector can present judicial resources to the

	Minister of *Medio Ambiente y Medio Rural y Marino* in connection with the article 107.1 of the Law 30/1992 of the Public administrations and Common Administrative Procedure.
Sweden	When there is a complaint, the Board is checking the figures to be sure that the calculation is correct. There have been some mistakes in the calculation for some vessels. When the figures have been checked, and no mistakes could be detected the complaints are, according to the law, handed over to an administrative court for a legal procedure. The Board has so far not lost any legal case. If the Board has made mistakes, these are corrected and a new allocation is made. About 60% of the fishing vessels made legal appeals against their allocation.
UK	Scheme as a whole is consulted on. Then have also established English Days at sea Advisory Group and Scottish Conservation Credits Scheme Steering Group to provide feedback on issues.

7 ALIGNMENT WITH QUOTA

7.1 ALIGNMENT ATTEMPTED

Many Member States suggest that alignment is implicit in the initial allocations. Member States such as Belgium, Ireland and the Netherlands have to date viewed quota as the primary constraint (see section 7.3 below) and sufficient effort available so as to make align of effort with quota unnecessary. There is an expectation that this will soon change as certain effort regimes such as cod become more constraining to their fleets.

Six of the twelve administrations stated that they do attempt some form of alignment of effort with quota allocations. In some Member States (ES, SE, UK) this is enabled through permitting the trade of effort between quota holders. The intention is that the market then aligns effort with quota. This approach is also under consideration in Denmark.

In Germany POs are allocated the effort for their members and can therefore align with quota operated in a pool system between vessels within the PO and make transfers between POs to align with quota holdings. German operators can also trade individually with the approval of BLE. On the 1st of November each year vessel owners are obliged to inform BLE whether they will use all or part of their remaining effort. Un-used effort is re-allocated to others in the fleet.

In other member states alignment is attempted centrally through the partial allocation of effort, regular monitoring of effort uptake and subsequent re-allocation. In Lithuania, vessels operating in the fishery for Deep Sea species are allocated half of the total quota and effort with the remainder being allocated on a needs basis based on logbook data up to the point when 90% uptake and an order to stop fishing is given.

In France there is no specific alignment of effort following initial allocation, which may be why it is the only MS to identify effort as the primary constraint in the Deep Sea regime.

7.2 COST IMPLICATIONS

Administration of an effort management regime results in costs to the Member State administrator (generally the MS fisheries agency) and costs to the fishing industry. The costs of effort management to the fishing industry in terms of operational changes are discussed in section 8, exploring the impacts of effort management. Below we focus on the administrative costs to the public and private sectors.

The costs of effort management to the public sector include set-up costs (introducing legislature, developing systems and consulting with the industry on changes) and ongoing running costs of effort management schemes (verification, monitoring, reporting, on-going consultation and acting on non-compliance). Generally these cannot be disaggregated from wider fisheries management administrative costs, but MS responses have highlighted a number of aspects:

- Administrative costs arise from informing the industry, monitoring uptake and reporting to the Commission;
- The complexity of the system (including attempting alignment with quota) can be assumed to increase administrative costs; and

- Devolving administrative responsibilities to industry (e.g. POs) passes a proportion, but not all cost to the private sector;

The costs of informing the industry increase with the level of consultation associated with decision-making. However the higher administrative costs must be balanced with the potential benefits of greater consultation. For example, the Irish Ministerial Group on Cod Recovery met 15 times in 2009 at significant cost to both the agencies and industry involved. However as changes are made by consensus there is no need for a complaints/objections procedure and agencies have not faced legal challenges as has occurred in other Member States. Extensive consultation has therefore resulted in cost savings elsewhere.

A more flexible system can be assumed to be an administratively more complex and costly system (e.g. with the notification of changes), but once again the additional costs to administration would be offset by the benefits of potential for industry performance that is less constrained by inflexible effort arrangements and the benefits of greater levels of compliance. These benefits are therefore shared between the public and private sector.

In some Member States the administrative costs are partially transferred from the public to the private sector (see 5.2 for more on the delegation of some responsibilities to POs). In Spain the POs, associations and co-operatives assist member vessels with effort management and transfers creating an additional administrative burden for these organisations. For instance in Germany POs are allocated a total amount of effort for all member vessels for the PO to manage. This has reportedly resulted in employment of 1 additional full time staff member for most POs. Verification and reporting obligations would prevent that the wholesale transfer of effort management administration to the private sector. However, it does appear to be appropriate that the additional costs of increased flexibility in effort management are borne by the beneficiaries of that increased flexibility.

The most significant administrative cost increase is from the additional running costs where effort can be transferred. If effort units also become tradable, as with quota, an additional operational cost to the industry is established. However, as with all commodities, unless the market is constrained in some way, a 'fair' market price should be established.

In the UK, for relevant fleets the purchase of days at sea varies from 0.1% to 1.6% of fishing expenses. For demersal trawlers in the North Sea and the West of Scotland this amounted to an average spend of €24,000 per vessel in 2007, around 40% of that spent on quota leasing. While these are relatively small transfers between vessel operators, they are an additional expense. The expense of days at sea purchase is therefore not welcomed, but accepted as part of the cost that enables a vessel to keep fishing. It is for the individual to decide whether the benefits of additional fishing opportunities out-weight the costs involved. However, it is not clear whether creating a market for effort is advantageous to vessels or not compared to centralised attempts by MS agencies to align effort with quota. The North Sea RAC suggested that from 2010 effort is now so scarce for some gear categories that the cost of leasing it is prohibitive.

In theory permitting trade in effort can result in benefits to the sector as a whole; the sale of effort by an operator not planning to use it results in financial gain for that operator as they were allocated the effort free of charge. The operator purchasing the effort would choose to do so if additional profit can be achieved through its purchase. However when effort becomes

highly constraining, prices rise to the point where effort is no longer traded as the costs involved outweigh the benefits of additional fishing opportunities. A benefit of tradeability is that the running costs are directly proportional to the benefits of flexibility they deliver as administration and transaction charges only occur with transfer activity.

It is difficult to conclude whether the tradability of effort creates a comparative advantage for those Member State fleets where it is permitted. We recognise, however, that tradability may have an influence of sector performance and so the different approaches adopted by Member States prevent a level playing field between Member State fleets.

Overall a number of Member States report that, as some effort management regimes are not the primary constraint compared to quota (see section below), their establishment and ongoing administration has been disproportionate to the effect of the regime. However, where effort is not constraining there are fewer resources applied to its management and the ongoing costs for monitoring and reporting are seen as minimal.

7.3 PRIMARY CONSTRAINT

Table 16 presents the Member State views on whether they deem quota or effort to be most constraining. This opinion is time-bound and is likely to change with fluctuations in both quota and effort under the regimes. Quota remains the primary constraint for most of the fisheries affected by effort management, other than the cod plan.

Table 16 MS opinion in 2009/2010 on whether effort or quota is most constraining

	Western Waters	Deep sea	Cod	NS Flatfish	S Hake & N Lobster	W Channel sole
Belgium	Q		Q	Q		
Germany	Q		E	E		
Denmark			E	E		
Spain	Q	Q			E	
Estonia		Q/E				
France	Q	E	E	Q	Q	Q
Ireland	Q	Q	E			
Lithuania		Q				
Latvia						
Netherlands			Q	Q		
Poland						
Portugal	Q	Q			Q/E	
Sweden						
UK	Q	Q	E	Q		Q

Council Regulation (EC) No. 1342/2008 requires the recovery plan to include the reduction of effort allocations as well as quota. This year-on-year effort reduction has resulted in the days at sea limits now being considered a greater influence than quota limits. This is mainly due to most fleets operating in mixed fisheries with species that are not experiencing the same quota reductions as cod. For example whitefish trawlers are constrained by reduced effort under the cod recovery plan even though haddock and whiting are not.

A review of effort uptake in 2009 shows a mixed picture for those Member States reporting that effort is the primary constraint under the cod and flatfish plans. Cod quota uptake in the North Sea stood at 97% for the UK, 93% for Denmark, but only 67% for France. In the West of Scotland cod quota uptake in 2009 was 95% for the UK, 87% for France and 85% for Ireland. In the Irish Sea, VIIa, there is a lower uptake with the taking up 85% of quota by the UK and Ireland only 51%. Of these the UK and France permitted effort transfers during this period while Denmark and Ireland did not. An alternative factor is likely to be determining cod quota uptake rather than effort in these instances.

Cod in the North Sea may be an example of where effort has been more closely aligned with the quota for this species. However, for other species in other sea areas being targeted by gears regulated under the cod plan, particularly those associated with the mixed demersal fisheries, this may not be the case. Haddock uptake by Denmark and France in the North Sea was only 34% and 8% respectively and even for the UK where haddock is a key fishery, uptake in the Irish Sea was only 67%.

For plaice, uptake in the North Sea was high while Belgian, Irish and UK quotas in the Irish Sea were low (45%, 11% and 32% respectively). Whiting quota uptakes were highly variable with high uptake in the North Sea (97% of total EU quota) but only 76% in the West of Scotland and 42% in the Irish Sea. UK and Irish uptake of Nephrops quotas in the West of Scotland were only 61% and 18% respectively.

A number of factors are likely to be the cause of lower quota uptake, but in some instances effort limitations could be one of those factors. This is either a direct impact in the number of days not being sufficient to catch the entire quota or an indirect impact in altering the fishing patterns of some fleets by creating a disincentive to travel to the more distance sea areas.

7.4 INTERNATIONAL SWAPS & EFFORT ALIGNMENT

As Ireland's DAFF reports in its 2009 Review of Western Waters Regime, for the most part, exchanges of fishing effort between other Member States do not arise as an issue as these tend to be within a specific quota segment, i.e. demersal quota for demersal quota. Exchanges occurring within the same segment are likely to involve roughly similar quantities so it can be assumed that the effort allocations required to catch the swapped quota would cancel each other out.

More difficult situations arise where quota is being exchanged across segments. For instance, in Ireland's case, deep-sea quota is sometimes exchanged for demersal quota. In theory, it makes sense that an appropriate amount of effort should be "attached" to the quotas exchanged. In practice, however, this would be extremely difficult to carry out as there are no established quota-to-effort ratios to determine the appropriate swap deal. Any such ratios would be difficult to establish as these would differ between Member States, fisheries, quota species and fishing periods. It would be an even more complex exercise to calculate the amount of effort that should ideally transfer with a quantity of quota from a mixed fishery. In

most instances therefore an associated effort swap has not occurred along with quota as quantities involved are usually relatively small. The Commission did propose a system of effort swaps being linked to quota swaps under the cod implementation regulation, but that this was not successful due to these complexities.

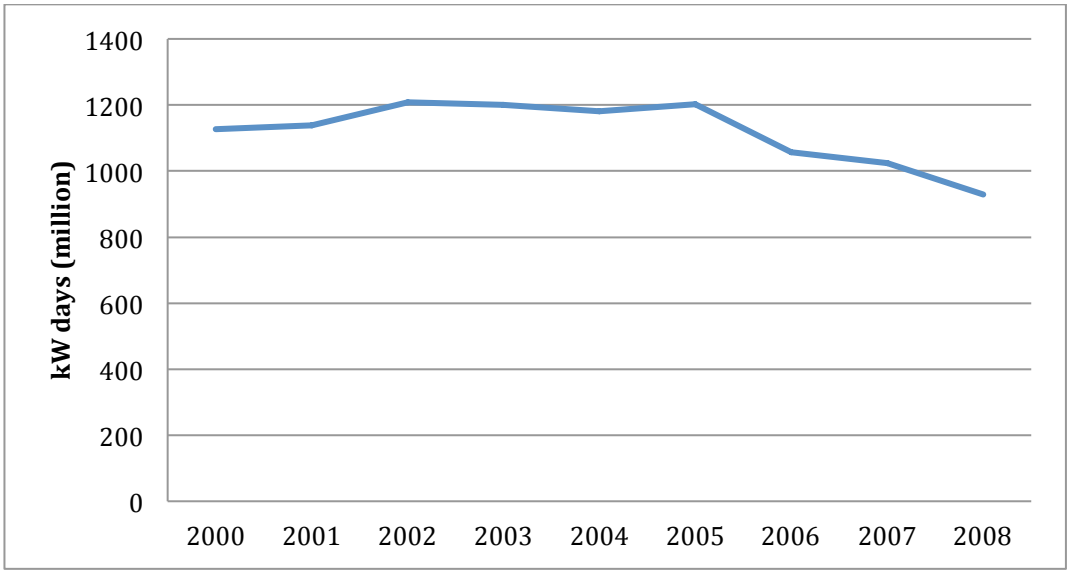
There are instances of effort being swapped to enable the targeting of non-quota species (e.g. crab & scallop under Western Waters regime). Due to this and the difficulties outlined above it is easier to have no direct linkage between effort and quota, allowing each to be exchanged independently between Member States.

8 IMPACT & INCENTIVES FOR RESPONSIBLE FISHING

8.1 IMPACT OF EFFORT MANAGEMENT ON FISHING PATTERNS

Member State responses gave mixed messages on the impact of effort management on fishing patterns. Overall fishing effort is generally reducing under the plans[8]. For example, Figure 1 shows that even with the improved reporting levels of recent years, the total reported kilowatt days under the cod plan clearly decreased since 2005. This reduced total activity is partly the result of decommissioning schemes reducing vessels numbers as foreseen under the EFF, or other externalities like higher fuel prices and lower fish prices

Figure 1 Total reported effort under the cod plan (kW days)



Source: DG MARE

The reduced activity has occurred in the targeted fishing activity, which is the intended result. Some effort management has also led to reductions in other fisheries, e.g. the Danish authorities claim that the *Nephrops* fishery in the Kattegat is being unnecessarily constrained by effort allocations under the cod plan and an exemption is currently being sought.

It is also reported that effort has been displaced to other fisheries. For example, Spain reports the limitations on fishing in the West of Scotland under the cod plan has led to the increased targeting of Nephrops on the Porcupine Bank. Portugal also reports an increase of effort in exempted fisheries.

Several MS report spatial displacement of vessels as a result of days at sea restrictions. Ireland reports diversion of effort from West of Scotland and the Irish Sea to other parts of area VII as well as voluntary tie-ups by vessels. Netherlands vessels did target the Dogger Bank area for plaice, but due to effort restrictions (and fuel prices) instead work grounds that are closer to home ports. This is also a consequence of increased fuel prices and quota restrictions making it less attractive to target high density areas as non-quota species become a more important proportion of the catch value. There is therefore sometimes a trade-off

[8] The EC notes that effort reduction has not occurred in zones VIIIc and IXa, relevant to the southern hake and Nephrops (EC COM (2010) 241 final).

between effort (and fuel) encouraging more efficient fishing operations and quota restrictions encouraging the spreading of quota take-up over more trips.

Germany reports that vessels from Cuxhaven now use Hanstholm a Danish port as their main base. Landings are distributed by road, which has reduced trade for ancillary sectors and processing facilities in Cuxhaven.

Fishermen are now more careful in terms of planning the start and end of trips to avoid 'spilling days'. In some cases, vessels are reported to stay out at sea under dangerous weather conditions, in order not to waste effort by steaming in and out of port. The STECF effort working group stated that there is no identifiable change in fishing patters due to effort[9]:

"STECF-SGRST notes that there are no indications of substantial change in the recent geographical distributions patterns of the effort deployed by demersal trawls other than beams 70-89mm and ≥120mm. Observed changes are consistent with technical measures. However, the beam trawlers of Belgium, Germany and UK showed a concentration in the southern North Sea. It remains unclear whether the observed patterns are due to abundance changes of target stocks, economic considerations or effort regulations."

This finding was, however, based on 2003-2006 data and anecdotal evidence direct from industry reports the situation from 2009/2010. The change in fishing patterns reported are due to a combination of factors including fuel price and changes in abundance, with effort allocations certainly cited as being a contributing factor.

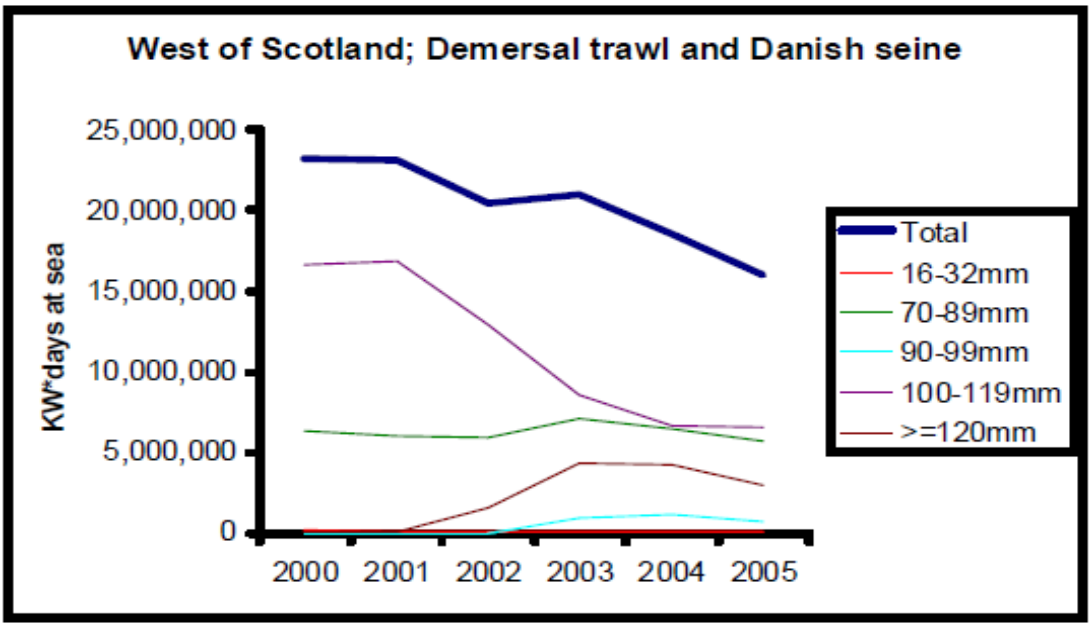
An area of concern is the additional constraints caused by effort management measures. In France vessels that would ordinarily choose to switch between gears on the same trip avoid doing so as the time counts for both gears used, i.e. two differently regulated gears in one day = two days used.

There is also a mixed message in terms of the effect of effort management on gear type adopted. The Netherlands reports that the unfavourable exchange rate of kW days from one gear to another act as a disincentive to switch from beam trawling to twin-rigging for flatfish as this is a more restricted gear under the cod plan. This is due to the TR2 gear historically having a significantly higher cod catch, but this is when operated in a gadoid-targeted fishery rather than using TR2 gear to target flatfish with lower headlines to reduce net height and therefore limit demersal by-catch. Rather than seeking a more complex distinction of gears and conversion factors it may be more appropriate for authorities and industry to gather proof of this reduced by-catch to seek fleet exemptions.

[9] SEC(2007) Commission staff working document. fishing effort regime (SGRST-07-02 and 07-04) subgroup on the assessment of the fishing effort regime (SGRST-STECF opinion expressed during the plenary meeting of 5-9 November 2007 in Ispra)

Figure 2 shows the varied effect of the cod recovery plan for trawlers and seine-netters fishing in West of Scotland waters. There is an overall decline in effort, but this varies by mesh size. The large decrease seen in the 100-119mm category resulted in increases in other mesh sizes. A positive move in terms of discards and selectivity is the move to 120mm+ mesh, but this is countered to some extent by the increased effort by vessels using <100mm.

Figure 2 West of Scotland trends in nominal effort 2000-2005



Source: DAFF, Ireland

8.2 INCENTIVES FOR CHANGE

Member States listed a variety of actions and initiatives seeking more responsible fishing practices (reducing discards, increasing selectivity, survivorship, etc.). Some such as the UK, Netherlands and Denmark have initiated industry groups to help find solutions to these problems. Initiatives to improve performance are most often technical measures and spatial restrictions. Generally initiatives are not wholly the result of effort management regimes. However, Article 13 of the regulation on the long term cod plan (Council Regulation 1342/2008), allows Member States to allocate fishing effort above the minimum set out, where vessels participate in additional cod avoidance activities. Article 13.2 incentivises cod avoidance through additional effort permitted if certain measures are adopted:

The maximum allowable fishing effort may be increased within effort groups in which the fishing activity of one or more vessels:

(a) is carried out having on board only one regulated gear the technical attributes of which result, according to a scientific study evaluated by STECF, in catching less than 1 % cod (highly selective gear);

(b) results in a catch composition of less than 5 % cod per fishing trip (cod-avoiding fishing trips);

(c) is conducted in accordance with a cod avoidance or discard reduction plan which reduces fishing mortality for cod among participating vessels by at least as much as the effort adjustment referred to in Article 12(4); or

(d) is carried out in the west of Scotland area to the west of a line drawn by sequentially joining with rhumb lines the positions laid down in Annex IV measured according to the WGS84 coordinate system, provided that the participating vessels are equipped with satellite-based vessel monitoring systems (VMS).

Ireland has seen the introduction by some vessels of Swedish grids in the prawn fishery for cod avoidance, to be in line with point (a) and also to contribute to achieving exemption under Article 11 (see below).

In Spain and the Netherlands Discard Reduction Plans are proposed as attempts to improve practice and allocation of additional effort in line with (c).

Article 13.2 has provided a clear incentive to Scottish authorities and industry to develop and implement additional measures, as seen with the Scottish Conservation Credits Scheme (see Box 1).

Article 11 of the cod recovery plan exempts certain groups of vessels from the scheme if they can show cod catches are below 1.5% as "the inclusion of these groups of vessels in the effort regime would constitute an administrative burden disproportionate to their overall impact on cod stocks". Voluntary increases in gear selectivity have occurred through adopting larger mesh sizes (Belgium, Germany and Denmark) and devices (e.g. the Swedish grid used in Sweden and now other countries such as Ireland). The intention is to get below the 1.5% cod catch and therefore be exempt from effort restrictions under the plan.

In 2009 many MS notified the Commission about their intention to use this by-catch provision, but later reported that they have not used it. Several applications for exemptions have been rejected by STECF due them lacking sufficient evidence of the impact of these measures on fishing mortality. In a number of instances this related to the evidence presented being percentages of cod landed rather than caught. The inability to provide evidence of the full catch profile of vessels has prompted innovative measures such as the use of CCTV to enable full catch reporting which are being trialled in Denmark and the UK.

From 2010 certain vessel groups from Spain, France, Germany, Ireland, Poland and Sweden had been excluded from effort regime of the cod plan. The North Sea RAC suggests that more opportunities under Article 11 and 13 have not been taken up due to:

- The text of the article is obscure and difficult to comprehend and the process of exchange is protracted. It takes a long time for STECF to evaluate the measures being taken
- The standard of proof required is set too high

The STECF's 2010 summer plenary report provides more guidance to MS supplementing Article 13.7 on the reports that should be submitted for evaluation. While this clarifies the requirements the above perception of the North Sea RAC is unlikely to have changed.

Many other developments such as gear adaptations and strategies are cited by member states, but there are various reasons behind these developments such as reducing gear costs, improving fuel efficiency or environmental certification. The above are specific examples where developments are clearly attributable to the effort management regime.

Box 1 Scotland's Conservation Credits Scheme[10]

The Scottish Government has sought to mitigate the impact of the reductions in fishing time required by the long-term cod management plan by introducing 'Conservation Credits'. The Scottish Government agreed with the European Commission that it would institute a system of real time closures in 2008 to reduce catches of juvenile cod. Fishermen who complied with the area closures received additional days at sea.

The scheme – which came into place on 1 May 2009 - provides alternatives to the 25% reduction in kilowatt days, whilst still reducing cod mortality by 25%. It is intended to give the majority of Scottish whitefish and Nephrops trawlers the opportunity to fish at a level close to their normal practices. Fishermen can receive additional days at sea by adopting conservation measures such as nets that allow cod to escape, and avoiding fishing in areas with high concentrations of cod. The more conservation methods used the more days at sea can be topped up. The scheme includes the following measures:

• Real time closures are established for 21 days in areas where aggregations of cod have been identified by sampling or reported by fishermen. The 21 day period is thought to be long enough to allow aggregations of e.g. spawning fish to disperse. Closures have been estimated to reduce cod mortality by at least 11% in 2009. In 2008 RTCs were implemented on a voluntary basis and compliance was almost 100% by fishermen both from the Scottish fleet involved in the CCS and by foreign vessels fishing in Scottish waters. From 2009 compliance was made mandatory. There were 144 RTCs in 2009[11], which alone was estimated to provide a 10% reduction in cod mortality.

• Establishing "amber" areas - data from fishing vessels are used to identify areas of consistent cod abundance. Vessels which avoid fishing in these areas receive additional days at sea.

• Voluntary permanent or seasonal closures.

• A one net rule, which means participating vessels can only carry one type of net on a fishing trip. This makes enforcement of the rules easier.

• *Nephrops* vessels must insert a square mesh panel in their nets.

• Observers on fishing vessels to monitor and sample fish catches, record discards etc. These observers are additional to the work carried out by fisheries scientists for stock assessment purposes.

• A trial of CCTV on board fishing vessels

The Conservation Credits Scheme is now compulsory for all vessels over 10m using regulated gear in the cod recovery area.

8.3 ADDRESSING NEGATIVE INCENTIVES

Table 17 below presents Member State responses when ask if and how the Member State acted to avoid negative incentives being created. For example, with certain categories of vessels such as the under 10m fleet being exempted, has there been any movement into these sectors as a consequence of the regime. The responses suggest that reaction to effort management in the form of moving into new areas or sectors has not yet occurred. Where there is movement into the small scale sector, this is due to a number of incentives not just effort. In most instances other management measures are in place, such as limited permits, to

[10] For more details see http://assets.wwf.org.uk/downloads/scottish_conservation_credits_scheme.pdf

[11] http://www.scotland.gov.uk/Topics/marine/Sea-Fisheries/17681/closures/2009Closures

prevent movement occurring that could have negative impacts in terms of capacity within a segment.

Table 17 Consequences of exemptions and negative incentives in Member States

Member State	Response
Belgium	Fleets which do not fall under any effort regime are shrimp beam trawl, and scallop dredge. Also, one vessel is now fishing for squid. The squid vessel would like to have unlimited effort allocation, as it has a clean fishery for a non-quota species. BEL authorities are however reluctant to start making exceptions and have not done it yet. The BE fleet is shifting gradually to new gears to save fuel and/or exploit new species (flyshooting, sum wing, etc.), NOT because of the effort regime. There is too little or no information about the catches of cod by these gears. By catch of cod is a determinant factor to fix the transfer ratio of kW-days. Per gear type/mesh size different cod by-catches per kW-days exist. This leads to unfavourable transfers of kW-days, as the new gears have more by-catch of cod and more discards than the gears on which the transfer ratios are based. The reference period 2004-6 is now outdated, although BE does not wish to change it as other / new problems may arise.
Denmark	The move to other areas and use of more selective gears hampered because the need for "history". Disincentive to move to selective gears such as e.g. long lines have high conversion factor (1:10 compared to trawl)
Estonia	There are no such problems in Estonian fishery. Estonian fleet is rather small and regulation is quite straightforward, without "exemptions" which might be the case in bigger countries (like one sector can fish cod, other not etc.)
France	There are no specific dispositions in France to avoid negative incentives. The only risk is thought to stem from the cod regime, as the applications of the measures for the other effort regimes are not controversial at industry level. The Authority suspects that the cod plan may create an incentive for increased investments in the small scale fleet, but there are already other incentives to do so (inter alia special treatments granted by the CFP, social aspirations, lower financial risk).
Germany	No problems of this kind have been observed. Vessels below 10 m are exempted from the cod, plaice and sole regulations, but of these, only a few vessels exist on the German North Sea and these hardly fish for these species. In practice, smaller German vessels cannot reach and are not allowed to go to waters such as West of Scotland, so no problem exists.
Ireland	Some vessels have been forced to move to fish in other areas due to lack of days in the cod regulation, but under the WW regulation, effort is not a constraint (except for crab). There has been a shift in applied effort but only within the fleets under the

	regime both in species targeted and in gears in use but to date there is no evidence of any significant shift to vessel of smaller size which would be exempt. The IRL inshore fleet of under 10m would in the managed fisheries areas targeted very limited amounts of TAC species under any of the management regime and in the main are deployed in seasonal crustacean fisheries i.e. crabs and lobster. BIM financial support has been provided under the FIFG Irish Operational Programme. And also some voluntary moves to 150mm mesh size. But such initiatives are not seen as 'negative incentives' rather as improved and more responsible fishing practices which should reduce effort on cod.
Lithuania	The only Lithuanian vessels, fishing in NE Atlantic are >40 m length, they have to follow all the regulations without any exemptions.
Netherlands	The only exemption applies to shrimp beam trawl. However, this fishery is constrained by a limited number of permits, which make free access impossible. The mentioned negative incentives do not occur.
Portugal	Vessels are either moored for longer periods of time or they target other species – whether this is negative or not depends on the management of those alternative species.
Spain	In the Spanish fleet, the movement into segments exempted or out of those controlled under effort regime is not very significant. For the Spanish fleet operating in Western Waters regulations and Deep Sea Species regulations there are not exempted vessels. However, it is worth pointing out that the government has established a separate management system for boats < 100 GRT (order APA/3773/2006). Until 2007, boats < 100 GRT had a separate quota (21 % of the TAC), which was managed under a common pool approach for all participants. Since 2008, boats < 100 GRT have their fishing effort possibilities allocated individually (order APA/3844/2007). Regarding the fleet operating in NAFO waters, it can be said that there is not any segment of exempted vessel. The effort regulation of the smaller vessels is under the purview of the Autonomous Communities. The smaller vessels are distributed in six registers, according to the fishing modality. A vessel registered on a fishing modality is not authorized to use another one, but it is possible to make temporary changes to other modalities in function of the state of the resources and the characteristics of the vessel. Some métiers are being specially controlled, to limit their use and to avoid the overexploitation of the target species, for example the octopus traps.
Sweden	As vessels below 10 meters are exempted in the management regime, there has been a movement into this segment. No national measures have so far been implemented to counteract this movement.
UK	Not clear that observed changes are a result of the effort regime – also fuel and other pressures causing shift in fishing patterns.

8.4 OVERLAPPING REGIMES

Table 18 below presents MS responses when asked how they deal with overlapping regimes, i.e. where restrictions resulting from several regimes apply to the same vessels, whether this has given rise to complaints from the sector and where they perceive there to be inconsistencies or over-regulation.

There are few issues arising from overlapping regimes. A number of MS noted problems in overlaps between cod and Western Channel sole in VIIe, which caused reporting problems. As with other potential and emerging issues this was brought to the attention of the Commission and has since been resolved.

An outstanding issue has been the overlap between the cod recovery plan and the flatfish management plan with the tight control on effort in the former affecting uptake in the latter. This combination of regimes also creates a 'perverse incentive' for vessels to operate with smaller mesh gears (below 100mm rather than 120mm +) than they would otherwise choose to use in the plaice fishery due to more favourable days at sea allocations for the smaller meshed gear.

Table 18 Member State response to overlapping regimes

Member State	Response
Belgium	The main overlap is in area 7e, which does not fall under the cod recovery, but it does fall under the sole management regime. The allowed effort is specified in days instead of kW-days. Vessels operating in 7e received 192 days in 2009, but in 2010 the effort was cut by 15%, so that the individual allocation would fall below the standard 180 days. In order to maintain the 180 days, the effort is counted as if it fell under the cod recovery. This solution is possible as long as the total BEL effort allocation is high enough. Fishery for sole in 7e is very small – 30-40 t. - Effort on sole/plaice in the NS is restricted due to the cod recovery plan, while cod by-catch is limited. This has been reasonably resolved in 2010.
Denmark	Not overlapping effort regimes, but the overlap of one effort regime with other management measures is affecting the sector. Cod is "determining" the fishing pattern. The limited no. of kW days in e.g. Kattegat (related to limited catches of cod) restrains possibilities for catching (abundant and highly valuable) Nephrops.
Estonia	Vessels must follow all the regimes and restrictions. Naturally, there are often many restrictions originating from different legislative acts, different regimes etc. Complaints usually arise only if vessel-owners and officials interpret regulations differently (and this is very seldom).
France	France does not deal with overlapping systems. The basic rule is that the activities of the vessels are limited by landing quota and effort quota. The vessels must stop their activities as soon as one of these two limits is reached. This is perceived by the French Authority as a regulatory constraint difficult to

	manage and generating considerable administrative burden. For the cod effort regime, the FRA effort quota is split between 14 POs (incl. non members) and 18 area / gear regulatory units, i.e. 252 sub-national effort quota to monitor in addition to the 17 POs (incl. non members split into four regions) x 4 management units of landing quotas for cod (IV, IIa, IIIa / Via / VIIa / VIId) = 68 sub-national landing quota (for cod only in the area concerned by the cod recovery plan).
Germany	1342/2008 (cod) is managed jointly with 676/2007 (plaice and sole); up to now, no problems occurred. There is a geographical overlap of regimes concerning the ICES divisions Vb and VIa (west of Scotland), but the regulations say how to deal with this, no problem
Ireland	Overlapping regimes in the case of WW and cod regulations are not reported to be an issue for either the government or the sector, or to cause any specific problems.
Lithuania	The overlapping regimes are not an issue for Lithuania, as fishing of Lithuanian vessels is not very intensive in NE Atlantic. Most of the vessels are moving from one region to another and has permits to utilise several different fish species in different areas. So the fishery is usually not targeted on one species and vessels are moving from one area to another.
Netherlands	Overlap in area 7d is experienced as very complicated, as this area belongs to W. Waters and to Annex IIa regime. NL swaps days with BE (herring fishery) or IE (monk), but these species are allocated to the pelagic fleet, so that subsequently effort is swapped between the pelagic and the demersal fleet.
Portugal	No problems reported for industry in relation to overlapping effort regimes. For Administrations effort studies by area have been found to conflict with species recovery plans because the resulting data from the different regimes conflicts with each other, which hurts the quality of the final results.
Spain	There are some vessels in Western Waters that occasionally catch deep sea species, in small quantities as accessory catches. These deep sea species are not target species of these vessels (usually hake, megrim and anglerfish) but these small quantities of accessory deep sea catches oblige the fleet already under Western Waters effort regime to follow the deep sea species regime. This results in an overlapping of regimes that makes difficult to the ship-owners to plan fishing activities to answer to market or stock conditions (different prices per species, local abundance of species in certain fishing grounds, etc…). On the other hand, according to ship-owner effort restrictions in southern hake are so severe than several vessels are not profitable, especially in periods where fuel costs rise.
Sweden	The fishermen complain that the effort is not compatible with the quotas. However in the real life, there has been no big problem and the Swedish quotas have been utilised.

UK	The high level of complexity and the overlap between days at sea scheme and quota availability has caused some problems for industry. Cod / Western Channel sole caused problems between 7d/e reporting, but now clarified.

9 MEMBER STATE SWOT ANALYSIS

Member State administrations were asked to suggest the main strengths, weaknesses, opportunities and threats (SWOT) associated with the effort management regulations. Responses were collated to produce an analysis of the effort management arrangements in general. These are presented in Box 2 and discussed below. Issues relating to a specific effort management regime raised by respondents are presented at the end of each section.

Box 2 SWOT analysis of Effort Management Arrangements

- **Strengths**

1. Effort reduction overall - but not just due to these regimes
2. Clear allocation based on historic and scientific evidence

- **Weaknesses**

1. High administrative effort/cost
2. High complexity & low industry comprehension (and for administrations)
3. Rigid and inflexible ref period despite dynamics in sector
4. Timing not in line with quota making January difficult
5. Shift from environmentally damaging gear is not incentivised

- **Opportunities**

1. Automated system provides monitoring/reporting possibilities (FR)
2. Increased science creating more efficient measures
3. Keeping industry better informed and involved
4. Encouraging more gear improvements with greater incentives/ more exceptions

- **Threats**

1. Some MS fear trade in effort units, increasing costs
2. Use of quota and effort is over-regulation
3. Inconsistent messages could harm compliance
4. VMS & e-logbook tampering if over-reliant on one method

9.1 STRENGTHS

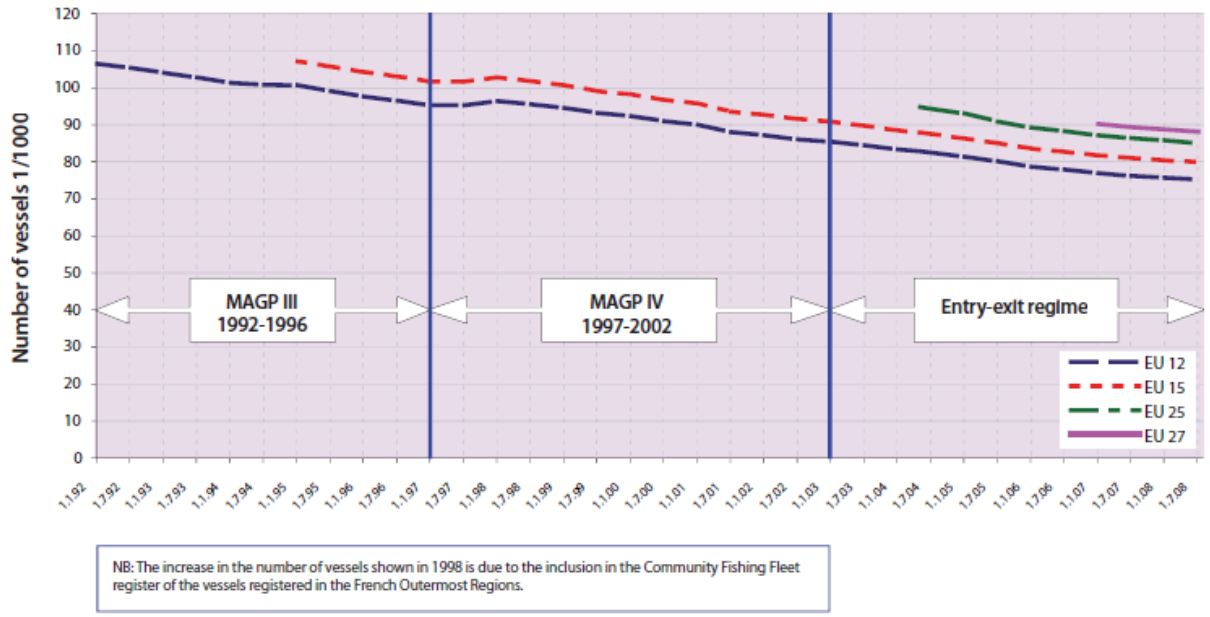
Effort Reduction

Member State administrations were generally in agreement that the underlying objective of capping or in most cases reducing fishing effort to bring it more in line with fishing quota was being achieved.

Most Member States suggested that rather than effort reduction resulting due to the effort management regulations, other management measures have been more influential such as decommissioning schemes to tackle overall capacity reduction which in turn are triggered by

rebuilding plans, quota restrictions and the introduction of rights-based management. In the case of Denmark the new cod plan gave support to the capacity reduction by 30%. Other than the fleet gains from EU enlargement, the EU fleet has been reducing at a rate of around 2% per year (Figure 3) resulting in a reduced total fishing capacity which has been further controlled by effort restrictions.

Figure 3 Trend in the number of EU fishing vessels 1992-2007



Source: DG MARE

Operational issues such as higher fuel costs and lower fish prices have also contributed to the overall reduction in fishing effort. While this is certainly the case for most of the effort management regimes, it is clear that in the case of the cod plan effort management has made a major contribution to overall effort reduction. It is recognised that the application of effort management can encourage more efficient fishing practices and has been an additional incentive for fleets to down-size and modernise.

Transparency in allocation

A further strength of the effort management regulations identified is the transparent calculation of total effort allocations per Member State. While some take issue with the continued use of certain reference years (see 'weaknesses' section below), they are at least fully aware of the historical and scientific data used to as the basis of allocations. "Basing it on past performance is perceived as fair and is easy to explain". The transparency of the system of effort allocation is appreciated, with some highlighting the contrast with the horse-trading that causes quota allocations to diverge from scientific advice.

The flexibility of the cod plan was highlighted as a strength by Swedish respondents, which is a Member State that permits the buying and selling of effort days. This Member State may be more favourably disposed to the cod plan than others as its trawl fleet was given an exemption with the use of a separator grid.

9.2 WEAKNESSES

High complexity and resulting costs

The main weakness identified in relation to the administration of effort management measures (rather than the application of effort management *per se*) is the high level of complexity. Various aspects highlighted by Member States contribute to this complexity, which results in high administrative costs and low industry comprehension and acceptance. Complexities result from:

Timing

Quota is allocated on a calendar year and therefore the full year's quota is available in January. In contrast, effort is allocated in February, making management of effort in January somewhat based on assumed future allocations. Annual planning in January can only therefore be on a provisional basis, requiring later confirmation and occasional revision, which increase administrative costs.

Fixed reference periods

Several Member States found the consistent use of reference years to result in problems to be resolved due to the current situation no longer reflecting the reference years. See Table 10 for details of the various reference periods used by Member States.

For most MS this is not problematic as nearly all segments have shown decreases since the reference years, but there have been new gears introduced and switches to alternative gears, which are not reflected in the reference period. The lack of recognition of new gears means that the introduction of environmentally-friendly gears is not incentivised as allocations are still based on previously-defined gear segments.

The use of different reference years to determine activity and kilowatt ceiling was identified as being problematic for Ireland with fleet changes between the two periods causing certain vessels excluded from one calculation but included in another. France also allocates quota to POs based on 2001 to 2003 while effort is allocated based on 2006-2008.

Flexibility/Inflexibility

Member State systems differ in their level of flexibility in terms of alterations to initial allocations. A highly flexible system which facilitates changes to allocations tends to be more complex as it must have a number of safeguards and a comprehensive reporting system in place to ensure effort management is as per the EU regulations. Article 8(6) of the implementing rules for the cod plan does deal with this issue, making permanent transfers possible.

The extra notifications of changes made by industry or POs and recorded by administrations are an additional administrative burden and cost. These administrative costs are in part shared between industry and the Member State. A less flexible effort management system (e.g. a flat rate allocation that is not altered) may be less expensive administratively, but it may also result in the inefficient allocation of effort and lead to industry performance being constrained and/or to higher compliance costs. Therefore no Member State operates a completely inflexible system.

9.3 OPPORTUNITIES

Automated systems

The French administration suggests some of these information improvements could be provided through automated reporting systems. This would also help to reduce administrative costs.

Improved information

Opportunities identified by Member State administrations include improved information at all levels;

- Targeted science & research creating more efficient measures;
- The need to monitor effort in greater detail contributing to the knowledge-base in fisheries science and to better overall management;
- Awareness of information requirements of the Commission and STECF in advance; and
- A better two-way flow of information between administrators and industry will help to improve regulation and compliance respectively.

Recent MS experience, particularly the rejection of applications for fleet exemptions, has shown information provision is ad hoc and reactive. Member States would benefit from a standard, well-defined format of reporting to the Commission. They would also have benefitted from prior knowledge of the level of information required by STECF when assessing effort management and in making determinations. As STECF 'reacts' to advice requests from the Commission, the information required from Member States has not been fully determined in advance. Consequently MS information is also reactive and has often proved to be insufficient or incomplete. Establishing in advance precisely what information is required and when, will reduce confusion and administrative costs as resource allocations can be better planned.

More incentives for responsible fishing

It is also suggested by several Member States that more flexibility in the application of exemptions is required. According to Council Reg 754/2009[12] only Sweden and Spain had achieved exclusions for some of their fleets from restrictions under the cod plan. Several applications were rejected following judgements by STECF. These rejections and the costly evidence-gathering required for any submission act as a disincentive to seek gear improvements.

However from 2010 certain vessel groups from Spain, France, Germany, Ireland, Poland and Sweden had been excluded from effort regime of the cod plan. Greater incentives and more exemptions are desired by Member States and industry alike. They propose the expansion of the days-at-sea incentives for bona fide pilot schemes to encourage adaptations to be adopted and enable sufficient sample sizes to show impacts.

[12] COUNCIL REGULATION (EC) No 754/2009 of 27 July 2009 excluding certain groups of vessels from the fishing effort regime laid down in Chapter III of Regulation (EC) No 1342/2008

9.4 THREATS

Trade in effort

Some Member States are concerned that effort management regimes are moving towards effort becoming a tradable commodity, creating additional costs for administrations and particularly industry. In some Member States this is already the case. It is unclear whether the regulatory cost of effort trading puts those member state fleets at a comparative disadvantage or whether this is out-weighted by the advantages of increased flexibility.

Over-reliance on one technology

The introduction of electronic logbooks may encourage Member States to further reduce monitoring control and surveillance (MCS) activity. A number of Member States identify the threat of an over-reliance on one method of verification. The levels of logbook and VMS tampering are unknown, but they are likely to vary between fleets. As regulatory and economic pressures increase, along with the reliance on 'virtual' monitoring, so do the incentives to find ways to circumvent the technology.

Managing with effort and quota

The greatest threat viewed by Member States is that effort will increasingly be used as a reductive tool in parallel with quota. MS favour an either/or approach to the two systems and are concerned that further effort reductions will make fleets unviable.

Inconsistent messages harm compliance

The need to further reduce effort despite no proportional quota reductions being proposed under recovery plans such as cod is not fully appreciated by the industry. This lack of acceptance is in part due to positive messages regarding cod recovery suggesting that effort could be increased in a fishery. In part this is a consequence of the lag time between what operators 'on the ground' see and the gathering of scientific evidence that then leads to management decisions.

9.5 SUGGESTIONS

The most common comment by Member State administrators related to the relationship between effort and quota. This can broadly be summarised as proposing that either quota (single fisheries) or effort (mixed fishery) management should be applied, not both. Where both are deemed necessary, there should be a clear hierarchy, e.g. quota leads and effort supports, but not a mixture as this confuses administrators and industry.

Member States suggest the following in relation to the administration of effort:

1. **Harmonise** between regimes including between Baltic (deemed simpler) and North Sea cod*.
2. **Flexibility** should be designed in to enable positive change and reduce complexity.
3. **Distribute** national allocations with due time before they enter into force.

* The Danish respondents indicate that the kW days system applied in the Baltic Sea cod fisheries is much simpler to manage. Same no. of days allocated to all vessels irrespective of

segment/gear type. No opportunity for transfer (trade in) of kW days. Applied in combination with closed seasons and closed areas.

In addition to Member State comments, the Regional Advisory Councils have recently commented on the efficacy of various effort management plans. “One of the successes of the cod recovery plan has been that it has shown that it is possible to reduce fishing mortality on cod in a wide variety of ways without restricting effort, through the application of incentives. The facility to engage in “cod avoidance” arrangements in return for buy-back days has been a welcome part of the plan. There is strong support for the inclusion in the plan of effort rewards in return for cod avoidance and discard reduction. Those rewards have been well utilised by some sectors of the fleet.”

10 CONCLUSIONS & RECOMMENDATIONS

The following section presents the consultants opinions based on the review of background material and in particular the responses received from the Member State interviews.

10.1 CONCLUSIONS

10.1.1 Regulations

Across the different effort regimes, the definition of fishing capacity adopted (when relevant) is the same, i.e. the power of the vessel expressed in kW. But the definition of a vessel's activity is not consistent across these regulations. In contrast to the others, the 'Deep Sea Species' effort regime (2347/2002) defines effort as the time that fishing gear is deployed and therefore does not include time steaming to and from the fishing area.

When the effort regime only specifies vessels active in the area (e.g. Western Water regime), Member States may have their own interpretation of 'active' i.e. present in the area or gear deployed in the area.

Concerning management of fractions of days, only the cod regime specifies that any fraction of a day is to be counted as a full period. For other regimes, it can be assumed that article 26 of reg. 1224/2009 applies, i.e. any part of a continuous period of 24h is to be counted as a full day. This regulation entered into force only recently in January 2010, so before this date the rules for dealing with fractions of days are assumed to be discretionary (except for the cod plan).

10.1.2 Member State Implementation

(See section 4 for detailed description)

The relevance and application of the six effort management regimes varies significantly between the Member States interviewed. Poland and Latvia have no system in place as they have removed obligations through international agreements. Estonia and Lithuania have very limited obligations under the Deep Sea regime. Most Member States are responsible for administering three or four effort management regimes to their national fleets. France is responsible for administering five of the six regimes.

There is consensus amongst Member States that the implementation of effort management is often highly complex that results in low comprehension by the industry and in some cases by the administrations themselves. The combination of effort management with quota management adds an additional dimension to this complexity.

A number of Member States derogate some administration of the effort management to Producer Organisations (Germany, Spain, France, Ireland and from 2011 the Netherlands). In other Member States there is a centralized administration of effort management schemes, with some suggesting P.O.s are unwilling to become involved in complex and unpopular management. In France, the Ministry derogates calculation of effort under certain regimes to the scientific institute (IFREMER)

Even in the most devolved system in Germany, as 20% of vessels are not members of a P.O., central administration is still necessary. Overall responsibility for effort management,

reporting requirements and the need to monitor in real time create additional barriers to derogation to catching sector organizations such as P.O.s.

The majority of Member States report some consultation with stakeholders regarding effort management arrangements using already existing or specifically-established groups. In some instances consultation has created a significant additional administrative burden to agencies and industry alike.

The existence of a consultation process does not in itself ensure industry appeasement and compliance. Good practice in consultation is required and this is not always possible with the short time between announcements and implementation.

10.1.3 Calculation and Allocation

(See section 5 for detailed description)

There is a lack of clarity regarding reference periods. Some Member States feel tied to use of the same reference periods that the Commission uses in its total allocation to Member States for allocation within Member States. It is not clear to some Member States whether they must use the same reference period as the Commission or they can use their own methods (such as alternative reference periods) for allocation to vessels.

As far as the most important effort regimes are concerned (in terms of number of vessels regulated), allocation of effort is on an effort group basis, i.e. aggregated kW-days per metier. Two effort regimes (Sole Western Channel and Southern hake regimes) set effort limits on an individual vessel basis in terms on maximum number of days fishing (not taking into account vessels' capacity), with however possible derogation to use an aggregated KWKW-day management system.

Most effort regimes exclude vessels less than 10 m from the management regime. However, in the cases of the Western Water regime and of the cod regime, Member States are required to take this fleet into account, and must therefore have specific national arrangements to monitor its activities.

The use of several gears during the same trip is most unusual. A small number of countries allow only one gear on board at any time, e.g. Belgium and the UK. In all other MS, there is a disincentive to carry more than one gear on board as the sea-days are counted against each gear, so that with two gears the use of effort is double the number of calendar days spent at sea. There is ambiguity in areas where vessels are permitted to participate in regulated as well as unregulated fisheries. Carrying unregulated gears may not be taken into account (e.g. gillnets or handlines for non-quota species).

Allocation of effort to individual vessels is quite different in the various Member States ranging from detailed individual allocation based on historical track record to flat rate general allocation. These variations are in part associated with whether the MS attempts to align effort with quota allocations.

10.1.4 Verification and monitoring

(See section 6 for detailed description)

In all Member States, the main information source used to calculate effort is logbook declaration for activity (area fished, gear used) and National fleet register for engine power.

For vessels equipped with VMS (>15 m), all Member States report using VMS positions to verify area declared. Some Member States (e.g. France) also declare using data on vessels speed from the VMS data flow to verify if the vessel was fishing or simply transiting through a regulated area. Some Member States (e.g. Belgium, Denmark, Ireland and United Kingdom) declare using sighting data from seaborne or airborne inspections to verify area declared by vessels of all class lengths.

For verification of gear used, the only possibility mentioned by Member States is on the spot inspections (at sea or in port).

While main engine power as declared in the fleet register is the reference value used for the capacity indicator, it has not been subject to a specific verification programme until now. The reformed Reg. 1224/2009 control regulation imposes control verifications of declared engine power.

10.1.5 Alignment with Quota

(See section 7 for detailed description)

Many Member States suggest that alignment is implicit in the initial allocations. Six of the twelve administrations stated that they do attempt some form of alignment of effort with quota allocations either through central re-allocations or through permitting transfers between vessels.

The transfer of all or part of original effort allocations between vessels is permitted by some Member States, but not by others. Overall there appears to be a general move away from centralised control towards greater individual and PO involvement. As transfers appear to be desirable in that they allow flexibility and therefore a potentially greater level of uptake, the decision not to permit transfers is to better ensure excessive effort is avoided, i.e. a more conservative approach is adopted.

Where transfers are permitted, this can be managed centrally by the national administration or by the sector itself. Although monitoring by national administrations would still be required, the transfer of effort within groups is likely to be more efficient if conducted by the industry. Therefore the decision to derogate or not may be politically/ideologically driven.

Transferring effort between fisheries is an uncommon practice, probably because the added complexity and unfavourable nature of the imposed 'exchange rates' act as a disincentive.

Certain Member States express concern that transferability will lead to a trade in effort developing. This concern is either due to Member States not wishing to create an additional access right for a public good or due to them observing the market for that right can create a significant additional operating cost for vessels.

It is difficult to determine whether the tradability of effort creates a comparative advantage for those Member State fleets where it is permitted. We dodo, however, recognise that tradability may have an influence of sector performance and so the different approaches adopted by Member States prevent a level playing field between Member State fleets.

Most Member States identify quota as being the primary constraint for operators, other than for the cod plan, where the proportional annual reduction in effort has a larger impact on operations than the same reduction in quota.

10.1.6 Incentives for Responsible Fishing

Member State responses gave mixed messages on the impact of effort management on fishing patterns.

Fishing effort is generally reducing under the plans. This reduced total activity is partly the result of decommissioning schemes reducing vessels numbers and higher fuel prices.

Fishing effort has been displaced spatially with the targeting of grounds closer to port to minimise steaming times. This has primarily been reported in the North Sea under the cod plan. There has also been displacement into other non-restricted fisheries. The targeting of non-quota species as an alternative to reduced fishing opportunities has also been restricted by effort management. All these factors contribute to the complex decision-making process of determining fishing pattern.

Fishermen are now more careful in terms of planning the start and end of trips to avoid 'spilling days'. In some cases, vessels are reported to stay out at sea under dangerous weather conditions, in order not to waste effort by steaming in and out of port.

Generally initiatives such as improved gear selectivity or spatial restrictions are not wholly the result of effort management regimes. Only Article 13 of the cod recovery plan (1342/2008) provides the clear incentive of additional effort allocations to encourage responsible fishing practices.

A number of applications for exemption from the effort restrictions under the cod recovery plan were rejected by STECF due them lacking sufficient evidence of the impact of these measures on fishing mortality. The extensive sample and evidence base required is cited by several Member States as a disincentive to change to more responsible practices. However, at the time of writing seven Member State fleets (Spain, Sweden, France, UK, Ireland, Poland, Germany) have now achieved exemptions and further applications are in process.

Member States commented that the inflexibility of the effort allocation system and exchange rates act as a further disincentive to move to less damaging fishing methods (e.g. from beam trawl to twin-rigging).

10.2 IMPLICATIONS FOR ADMINISTRATION

There are many variables influencing the approach to allocation of effort, which makes proposing 'best practice' difficult as systems have evolved to address the circumstances particular to each Member State and its fisheries. The approach to the administration of effort depends on the following (in order of priority):

1. EU regulatory requirements;
2. Complexity of the fishery (number of regulated vessels & métiers);
3. Interaction with other management (including other effort) regimes;
4. MS culture of derogation & self-regulation;

5. Existing MCS systems; and
6. Communication channels between industry and fishery managers.

The primary determinant of the approach to allocating effort adopted by Member States is the EC requirement as stipulated in regulations, which are common to all Member States. The level of complexity that a MS must consider is then important in determining the effort management system that is established, including complexities created by the existence of other management regimes, including other effort regimes. The remaining factors are inter-related, with the type and extent of communication with industry related to the MS culture of derogation and self-regulation, as are existing MCS systems.

Member States tend to build in conservative measures through holding a proportion of total effort in reserve. This is more likely the more complex the effort regime is as there can be more opportunities to overshoot allowances. However this can lead to the full effort allocation not being taken up. This is problematic for the industry if effort is the primary constraint as fishing opportunities are not maximized.

The decentralized management of effort by POs potentially enables a less conservative approach to allocation and management as uptake levels can be monitored on a close to real time basis. This is only likely to work if good communications and a constructive working relationship exist between the administrations and the POs, which builds trust.

Enabling the re-allocation and transfer of effort is likely to result in greater effort take up. Whether a MS chooses this approach is dependent on the variables mentioned above, mainly the complexity of the fishery (is it cost-effective to introduce a higher administrative burden for greater flexibility?) and the culture of the MS (are self-regulation and market-mechanisms favoured?).

The introduction of electronic logbooks will enable the monitoring of effort uptake in real time and the development of more automated administrative systems that to date would not have been possible or cost-effective.

10.3 IMPLICATIONS FOR REGULATION

EU regulation is a primary influence on the administration of effort by Member States. There are a number of areas where regulation could better guide their administration of effort:

1. **Harmonisation** between regimes and between information requirements of the various parties involved.
2. **Flexibility** should be designed to facilitate positive fleet changes.
3. **Simplification** of regulations to reduce complexity which leads to confusion and higher costs.
4. **Timing** of the distribution of national allocations with due time before they enter into force.

10.3.1 Harmonisation

This report has highlighted numerous differences between EU regulations that employ effort management as a tool. In most instances these differences are understandable as they have evolved to address different objectives. Change for the sake of standardisation alone risks further confusion and cost for Member States that have an understanding of the current regulations and have developed systems to deliver to requirements. However there are some instances where differences cause ongoing confusion and complexity.

While the most recent effort regimes consider presence in the area as unit of time, the Western Water regime and the Deep-Sea regime consider time active in the area, which may be interpreted as time fishing (gear in the water) and possibly time searching for fish as the logbook template does not foresee different entries for these two types of activities. From an administrative perspective, time present in the area is the easiest.

The use of different reference periods across regulations could be updated and standardised. Now that VMS is in place for all regulated vessels and electronic logbooks are to be introduced, the definition of fishing activity could be standardised in terms of 'active fishing' in the regulated area. Member States involved with both deem the Baltic cod recovery plan simpler and therefore preferable to that in place for North Sea stocks.

Improved harmonisation is also required in terms of information provision across the various effort management regimes and in relation to information requirements of STECF. Recent experience has shown information provision is ad hoc and reactive. Member States would benefit from a standard, well-defined format of reporting to the Commission. They would also have benefitted from prior knowledge of the level of information required by STECF when assessing effort management and in making determinations. As STECF 'reacts' to advice requests from the Commission, the information required from Member States has not been fully determined in advance. Consequently MS information is also reactive and has often proved to be insufficient or incomplete. Establishing in advance precisely what information is required and when will reduce confusion and administrative costs as resource allocations can be better planned.

10.3.2 Flexibility

This research has found that for MS administration, increased flexibility can result in increased complexity (and lead to increased costs). However in terms of regulation, flexibility can be encouraged if regulation is less specific and more results-based. Defining how a MS achieves the desired result is not as important as defining exactly what must be achieved. Such flexibility is a positive introduction by the cod recovery plan regulation (1342/2008), but as a result it adds complexity through explanation and defining permitted approaches.

10.3.3 Simplification

Regulation can be simplified through presenting further explanation and possible approaches within an implementation guidance document rather than within the regulation itself. This requires confidence that a results-based management approach is sufficient if supported by clear definitions of targets and how these are to be measured and verified.

So far, the Cod effort regime and the Western Waters regime are the only two effort regimes that consider monitoring of the fleet of vessels of less than 10 m. this proves difficult in the absence of compulsory declaration and means of verifying it (e.g. VMS) without prejudice to specific provisions contained in multiannual plans. Member States have systems to monitor the small-scale fleet, but often based on information using sampling methods as foreseen by Reg. 1224/2009. This information is not appropriate to monitor accurately effort deployment in near real-time. The regulatory framework would certainly be simplified if the <10m fleet was excluded from the scope of regulations. The exclusion of these vessels from the regimes may have contributed to the attractiveness of the <10m vessel fleet for investment along with other incentives, but there is no estimate of the size of the problem available. This should therefore be determined ahead of decisions relating to under 10m vessels.

10.3.4 Timing

The current timing of the distribution of MS allocations adds to administrative complexity. With more regimes operating under long term management plans (along with the more timely reporting by Member States) there is an opportunity to set allocations quickly and bring them into line with quota allocations.

In addition to the above, Member States would appreciate clarity on and standardisation of reporting requirements so that these can be resourced and delivered in a timely manner.

A number of recent and proposed developments will address some of the current shortcomings, particularly implementation of the control regulation (1224/2009). As future revisions to effort management regulations will be in the light of the Control Reg, there is an opportunity to standardise requirements including verification, monitoring and MS reporting.

APPEN 1: MEMBER STATE QUESTIONNAIRE

The following discussion should be based on the most recent year's activities, ideally 2009. Where changes have been made in 2010 or are planned, e.g. due to the new control regulation, please make a note of these changes.

A. MEASURES & REPORTING

A.1 Please specify the fleet segments to which the effort management regulations are relevant

	Western Waters regulations	Deep Sea Species	Long Term Plan for Cod stocks	Plan for plaice and sole (North Sea)	Southern hake & N. lobster (Iberian Peninsula)	sole in the Western Channel
Fleet segments:	1954/2003..1415/2004	2347/2002	1342/2008	676/2007	2166/2005	509/2007

A.2 Please specify any reporting or communication issues between Member State and Commission in relation to effort management measures?

B. DEFINITIONS

B1. What is the definition of a sea day? *(please tick where applicable)*

Definition **The question should also expand to the calculation of a day and to the allocation of a day to an area**	Western waters	Deep Sea	Cod	Plaice and sole	S. Hake & Nephrops	W. channel sole
Number of days at sea by trip in the area, rounded up to the nearest whole number						

Number of hours at sea in the area						
Number of hours at sea operating at certain speeds (identified as active fishing) in the area						
Other (describe)						

B.2 What measures are in place to ensure effort is not excessive? (e.g. defining 23 hours as a day, rather than 24, etc.)

B.3 How is engine power measured and does this differ between fleets (if so please specify – including if passive gear fleets measured differently)?

C. CALCULATIONS

C.1 How is effort calculated? *(please tick where appropriate)*

Method	Same for all fleets and areas	Western waters	Deep Sea	Cod	Plaice and sole	S. Hake & Nephrops	W. channel sole
Use of VMS							
Use of log books							
Combination of VMS and log book							
Other (describe)							

C.2 How is effort calculated for vessels using more than one gear?

C.3 How is effort in the small scale fleet calculated?

(Article 4 Reg 1954/2003 requires effort for vessels ≤15m to be assessed globally for each fishery or ≤10m in biologically sensitive areas)

definition of small scale (size range)	effort calculation

D. ALLOCATIONS

D.1 How are days at sea allocated? *(please tick where appropriate)*

Method	Same for all fleets and areas	Western waters	Deep Sea	Cod	Plaice and sole	S. Hake & Nephrops	W. channel sole
By metier/fleet segment							
By individual vessel							
Other (describe)							

D.2 Is administration of effort management allocation derogated to Producer Organisations or other bodies?

D.3 What is the formula used to allocate days at sea? (a specific formula or a description of approach)

D.4 How is a day allocated to a particular area

D.5 What reference period is used? And does this differ between fleets/fisheries?

D.6 How is consultation on allocations undertaken and what is the complaints/objection procedure? Does this differ between fleets/measures?

D.7 Following (initial) allocation how are remaining effort amounts managed towards the end of the fishing season? E.g. a reallocation and on what basis?

E. VERIFICATION

E.1 How is the engine power of vessels verified?

E.2 How is time at sea verified? *(please tick where appropriate)*

Method	Same for all fleets and areas	Western waters	Deep Sea	Cod	Plaice and sole	S. Hake & Nephrops	W. channel sole
Hailing in and prior notification							
VMS and hailing in exclusion							
Log book cross checks							
Other							

E.3 How is correct gear verified? *(please tick where appropriate)*

Method	Same for all fleets and areas	Western waters	Deep Sea	Cod	Plaice and sole	S. Hake & Nephrops	W. channel sole
Log book cross checks							
Inspection at sea							
Inspection in port							
Other							

E.4 How is fishing effort in the small scale fleets verified?

E.5 How is the list of vessels verified and updated? Is this cross-checked with the community fleet register?

E.6 What is the frequency of updates? Is this the same for all fleets?

E.7 What action is taken if discrepancies are identified in any of the above verifications?

F. ALIGNMENT

F.1 How does the system align effort with fishing quotas?

F.2 Describe if and how effort can be transferred between vessels or vessel groups, and to what extent this has been used in practice?

F.3 Has alignment resulted in administrative difficulties and/or costs to catching sector?

F.4 Have effort management measures caused any changes in terms of fishing patterns/behavior? e.g. moving to exempted segments

F.5 What has been more constraining on fishing operations, effort management or quota? *(please tick where appropriate & specify if certain fleet segments affected in different ways)*

Method	Western waters	Deep Sea	Cod	Plaice and sole		S. Hake & Nephrops		W. channel sole
Species	demersal species*	deep sea species*	cod	Plaice	Sole	S. Hake	Nephrops	sole
effort								
quota								

*Please give specific information if there have been differential impacts for certain fleet segments or species and why that may be:

F.6 Have overlapping regimes caused problems for administrations? Please give specific examples

F.7 Have overlapping regimes caused problems for the industry? Please give specific examples

F.8 How have problems been solved or addressed?

G. RESPONSIBLE FISHING PRACTICES.

G.1 Describe if and how incentives are being created for responsible fishing practice, including discards

G.2. Have any of the following systems been introduced in fishery (specifically for effort allocation & monitoring) *(please tick where appropriate)*

System	**Western waters**	**Deep Sea**	**Cod**	**Plaice and sole**	**Southern Hake & Nephrops**	**Western Channel sole**
Additional technical measures (gear)						
Discard reduction plans						
Spatial restrictions						
Industry reporting (see G.3 & G.4)						
Others						

G.3 How is industry involvement incentivised? Is this the same for all fleets/fisheries?

G.4 If industry involvement (reporting etc.) is encouraged, is this successful and how is performance assessed?

H. SWOT & COMMENTS

H.1 Please give your opinions on the effort management measures

Method	General (applicable to all)	Western waters	Deep Sea	Cod	Plaice and sole	S. Hake & Nephrops	W. channel sole
Strengths							
Weaknesses							
Opportunities							
Threats							

H.2 What recommendations would you make for simplification / standardisation?

H.3 Further comments on effort management issues
