Discards – new developments 2009

Contents

For the view of a 16 year old on discards see:

http://www.youtube.com/watch?v=9A689ISOZo4

Electronic monitoring

1. Aalborg declaration – 8 October 2009

In October 2009 Scottish, UK, Danish and German ministers signed the Aalborg declaration calling for a system of catch quotas in a fully documented fishery (using onboard CCTV). This approach must be adopted across the EU. The proposal would see more responsibility handed to fishermen, providing suitable rewards for their innovations and responsible fishing practices.

An increase in the number of Scottish vessels installing CCTV would mean the collection of more accurate data, bridging the gap between fishermen and scientists.
http://www.fvm.dk/Admin/Public/DWSDownload.aspx?File=%2fFiles%2fFiler%2fEnglish%2fFisheries%2fJoint_statement_okt2009.pdf

2. Danish electronic monitoring project.

In trials running from September 2008 to July 2009, DTU Aqua, Denmark's National Institute of Aquatic Resources, tested electronic monitoring on six Danish fishing boats. The study was commissioned by the Danish Government.
The Danish Electronic Monitoring Project aimed to:

- ✓ Test whether electronic monitoring can be used to provide reliable documentation of the fishing operation and the catches.
- ✓ Investigate a new fishery management system where vessels with full documentation get incentives in the form of increased fishing possibilities.

"Preliminary analysis shows that the vessels which participated in the project discarded fewer fish than other vessels," said Jorgen Dalskov, project manager for DTU Aqua. "The project has shown that the technique can work under Danish conditions and with several types of Danish vessels. Data from cameras and sensors on the GPS and hydraulics allows high accuracy to determine where and when a fishery has taken place and how big catch and discards have been."

Data was collected from 5,708 hours of fishing. DTU Aqua has processed and analysed 81% of all data collected. This equates to 13,935 hours of recording – with a data loss of only 2.1%.

A report assessing the photographic trials, was presented on 1 September by the Technical University of Denmark (DTU), showed among other things that the fishermen kept considerably more small fish on board than previously. (The results of the camera trials were presented at the Ministers conference in Aalborg on 8 October, attended by ministers and top civil servants from a number of European countries.)
http://www.aqua.dtu.dk/upload/dfu/nyheder/jorgen%20dalskov%20-%20electronic%20monitoring.pdf

3. CCTV aims to reduce fish discards - 24 July 2009

A pilot scheme was launched in July for skippers to use CCTV on their boats to help reduce fish discards. Seven Scottish skippers have been chosen for the £100,000 pilot scheme (four whitefish and three *nephrops*):

Fairline PD 325
Fruitful Bough PD 109
Maracestina INS 291
Aubretia BCK 32
Audacious BF 83
Caspian BF 38
Seagull BF 74

The system uses four cameras. One is focused on the net drums to record the net being hauled; one on the catch reception hopper and two on the vessel's fish handling system, including the chute used to return unwanted fish outboard.

<u>The aims are to establish:</u>

- ✓ If CCTV can be used as an effective tool to provide reliable catch/discard observation data.
- ✓ If it can give fishermen an incentive to comply with fisheries management and stock conservation initiatives.
- ✓ If it can be used to enhance current monitoring and control capabilities, particularly on misreporting and compliance with discarding bans.
- ✓ Further ways to reduce cod mortality to supplement the work of the Conservation Credits Steering Group.

SCOTLAND

The Scottish Government's Response to the European Commission's Green Paper on Reform of the Common Fisheries Policy. 21 Dec 2009.

The discarding of marketable fish is perhaps one of the best examples of the failure of the CFP. Discarded fish are a precious resource which the regulations of the CFP prevent skippers from landing. The vast majority of these fish are already dead when thrown back, representing a biological and economic loss. In 2008 it is estimated that 21,800 tonnes of cod was discarded in the North Sea alone. This is only 2000 tonnes less than actual catches for that year. Figures for plaice are even worse, with 49% of all catches thrown overboard. These are shocking statistics and a primary objective of reform must be to address this scandalous waste.

Scotland has led the way in seeking innovative ways to improve sustainability and reduce discard levels. Selective gears and our system of real time closures developed over the past two years have reduced discarding. But more needs to be done. We are currently piloting the use of CCTV onboard whitefish and Nephrops vessels to test their utility as a tool which could enable the establishment of an outright ban on discarding. We are encouraged by the European Council's decision at the December Council in 2009 that we run a Catch Quota pilot project in 2010 as an incentive for fishermen to abide by a discard ban.

One of the major causes of discarding of marketable fish is the mismatch of quota held by a skipper, and the mix of fish that is found in the net. The problem is magnified in the mixed demersal fishery, where a single haul is likely to contain a half dozen or more quota species. These differences may occur because Total Allowable Catches set annually do not reflect accurately the abundance of the stock, leading to lack of quota for certain portions of the catch. Alternatively, a skipper may simply not hold the relevant quota which would allow him to land the fish legally.

There are a number of potential solutions which can reduce unwanted catches. For example, avoidance of areas of high abundance of particular stocks (Real Time Closures), gear measures which preferentially allow certain fish species to escape, and trade in quotas to help skippers match their quota portfolios with relative fish abundance on the ground. The role of new technologies, such as on-board cameras, is also being explored by the Scottish Government. A greater input from fishermen on haul composition could improve knowledge on relative abundance of stocks on the fishing grounds.

A more fundamental measure proposed by the Commission's Green Paper is a change from quota to effort management. The Scottish Government can see some advantages of this approach in mixed fisheries to address discarding. By managing fishing effort the incentive to discard is reduced as all catches can be landed legally.

There remain economic incentives to discard, however, in an effort-only system. For example it would make economic sense to an individual to target the most valuable component of a fishery and discard less valuable stocks. A discard ban would make such behaviour illegal. Thus additional safeguards for stocks at risk would need to be developed. Perhaps, more fundamental, an effort system creates an incentive for fishers to intensify their fishing activity to maximise the catch in the time available.

A change to effort rather than quotas as the main tool for managing fisheries also requires effort limits to be allocated to Member States and an effective end to Relative Stability quota shares. This point is discussed elsewhere in this document, but the Scottish Government is firmly of the view that the benefits accrued from Relative Stability, which secure our historic fishing rights, must be evident in any alternative management regime.

http://www.scotland.gov.uk/Publications/2009/12/21104310/5

2. Jt Statement of Denmark, Germany and UK. 15 October 2009.

Beside the commitment to explore another way for the Common Fisheries Policy the important part of the statement points to the need for the catch quota incentive to be made available in 2010. The establishment of a limited incentive from 1st January 2010 will provide valuable knowledge prior to the revision of the CFP in 2012, and it will balance the Commission initiatives within the existing management framework with alternative information crucial to the decisions in 2012.

The finalised projects have demonstrated strong evidence of improved governance in the fishery and that fisheries management can be perceived as legitimate by fishermen. The establishment of a catch quota incentive in the TAC/quota regulation for 2010 will show whether the introduction of a “second management track” will provide the following benefits on a broader scale:

- Correct registration of catches.
    - Precise data for biological advice resulting in better advice and management and a more uniform perception of the stock situation between biologists and fishers.
    - Vessels with documentation will make reference points compared to the rest of the fleet.
    - All catches are counted against the quota, with the effect, that the fisherman will optimize his economy by fishing selectively instead of discarding.
- Simplification of rules.
    - The complex machinery of rules and controls do not have to apply. Why impose days at sea, when all catches are documented and accounted for.
    - Discards can be abandoned. In relation to the public costs of managing and controlling fisheries it will provide important

information about alternative methods and financing of catch documentation.
http://www.fvm.dk/Admin/Public/DWSDownload.aspx?File=%2fFiles%2fFiler%2fEnglish%2fFisheries%2fPaving_the_way_for_a_New_Common_Fisheries_Policy__revised_15__october_2009.pdf

Conservation Credits II

1. Scottish example heralded at Brussels event – 14 December 2009
At an event in Brussels Ministers, government and EU officials, key European decision makers and fishing industry representatives heard from WWF Scotland fisheries experts about the measures being undertaken by the Scottish Government, fishing industry and NGO's in this innovative partnership to move fisheries management towards conservation.

A special report: The Scottish Conservation Credits Scheme – Moving fisheries management towards conservation is available from:
http://assets.wwf.org.uk/downloads/scottish_conservation_credits_scheme.pdf

2. Moving into 2010
The Conservation Credits Scheme was launched in February 2008. This landmark scheme rewards Scottish fishermen with extra days at sea when they sign up to initiatives which have an appreciable impact on the conservation of fragile fish stocks. Conservation Credits II is a development of the Conservation Credits Scheme piloted in 2008. The scheme provides alternatives to the European Commission's proposal for a 25 per cent reduction in days at sea, giving the majority of Scottish vessels the opportunity to fish for the same number of days as they fished in 2008.

Full details of the voluntary closure scheme arrangements for 2010 are as follows:

- A minimum of 40 cod per hours fishing effort will indicate a high abundance.
- There will be a maximum level of 9 closures (plus 3 extra in the event of a positive sample) set at any one time. Closed Area (CA) will be a maximum of 50 square miles.
- Any closed area will be defined by a maximum of 6 points.
- There will be no closed areas within the 12 mile zone unless exceptional circumstances for doing so exist
- Each closure will be as a result of 1 positive sample (over 40 Cod per hour) or defined by landing per unit effort data when sampling is not possible
- Closures will last for a fixed period of 21 days after which the area will automatically re-open.
- In seeking to address commercial impact concerns raised by the industry we will introduce Commercial Impact Zones (CIZ). There can be no more than 3 closed areas within any CIZ.

- Commercial Impact Zones will be 25 miles in radius.
- A voluntary scheme with no enforcement action to be taken, other than loss of benefit gained from participation in the Conservation Credits Scheme.
- Other UK administrations and other member states will be advised of closures and vessels encouraged to observe them.
- Industry will be encouraged to notify the existence for information purposes where they have encountered high numbers of undersized cod. Tel: +44(0)131-271-9700, Fax: +44(0)131-244-6471 and Email: UKFCC@scotland.gsi.gov.uk
- Sampling will be undertaken by the SFPA and independent observers.
- FRS observers shall seek the permission of the vessel master before any notifications are made.

http://www.scotland.gov.uk/Topics/marine/Fisheries/Sea-Fisheries/COMPLIANCE/closures

Gear technology

1. New selective gear trials in the North Sea – 10 November 2009.
An innovative £250,000 fisheries scheme to help tackle wasteful discards has got off the ground. The first trial of new selective gears is underway in the North Sea, as what is being dubbed Scotland's "land more, catch less" approach gathers momentum. The Fraserburgh-registered Caspian, a whitefish boat, is one of five vessels taking part. Both whitefish and prawn gears will be used in the trials.

Trials scheduled for the New Year will use different equipment to release cod whilst allowing other whitefish such as haddock and whiting to be retained. The trials will use industry observers to monitor the trials and collect the data.
The new selective gears, once fully developed, will allow Scottish fishermen to buy back additional days at sea through the Conservation Credits Scheme in the 2010/11 fishing year. The new selective gears trial programme is being co-ordinated by Marine Scotland Science Marine Laboratory.
http://www.scotland.gov.uk/News/Releases/2009/11/10103014

2. Marine Scotland trials with square mesh panels – two projects
2a. To assess the effect of three different square mesh panel (SMP) mesh sizes; 120mm, 160mm and 200mm in reducing the mortality of juvenile cod in trawls used in the North Sea *Nephrops* fishery. The intention is to target *Nephrops* grounds in the northern North Sea. The main target species are cod and *Nephrops* but other commercial species such as haddock and whiting etc will be sampled as available. Timescale: 27 November – 14 December 2009.
http://www.tendersdirect.co.uk/OurService/TenderView.aspx?ID=%20000000002632463
2b. To assess the effect of three different square mesh panel mesh sizes; 120mm, 160mm and 200mm in reducing the mortality of juvenile cod in whitefish gears. The intention is to target northern North Sea whitefish grounds. The main

target species is cod but other commercial species such as haddock, whiting, monkfish and megrim will be sampled as available. 6 – 23 November 2009.
http://www.tendersdirect.co.uk/ourservice/TenderView.aspx?ID=%20000000002632462

3. Scottish Industry/Science Partnership (SISP).
Marine Scotland is funding research ideas to enhance the existing cooperation between the Scottish catching sector and fisheries science providers.
http://www.frs-scotland.gov.uk/Delivery/standaloneM.aspx?contentid=2095

SISP Project 004/09. Report 01/10.
Trials to reduce cod by-catches in Shetland mixed demersal whitefish trawl fisheries by putting large meshes (300 and 600mm) in the front portion of a commercial trawl.
During 2009 experimental trials were conducted to assess the extent to which cod by-catches in the Shetland mixed whitefish fishery would be reduced by replacing the 120mm netting in the front sections of a trawl with 300 and 600mm netting. A further aim was to assess the effect of these modified trawls on the catches of monkfish and megrim, which are economically important to the Shetland fleet.

The results showed that both test gears caught significantly fewer cod, hake, megrim and ling than the control trawl across all length classes and significantly fewer monkfish below 76 and 83cm respectively than the control trawl. The 300mm trawl caught significantly more haddock than the other trawls and catches of saithe greater than 53cm were reduced in both test gears.
http://www.frs-scotland.gov.uk/FRS.Web/Uploads/Documents/SISP01_10.pdf

SISP Project 003/09. No report yet
Twin-rig *Nephrops* trawls incorporating a large mesh top sheet. Reducing gadoid by-catch is a key requirement for improving the sustainability of the west Scotland twin-rig Nephrops fishery. Although a 120 mm square-mesh release panel is now mandatory in the Nephrops fishery, additional measures may be helpful to aid whitefish stock recovery and contribute to the Conservation Credits Scheme. This project will trial a modified trawl where the top-sheet extending into the taper is replaced with wide mesh (240 mm). Twin-rig tows will be made comparing the performance of the modified net with a standard net incorporating a 120 mm square mesh release panel. Replicated tows will be undertaken at two Nephrops grounds on the west coast where juvenile gadoids are known to occur. The catch composition from both nets will be monitored and compared between the two nets using standard statistical comparisons.
http://www.frs-scotland.gov.uk/Delivery/standaloneM.aspx?contentid=3373

SISP Project 009/08. Report 05/09
Trials to reduce cod by-catches in whitefish trawl fisheries by modifying the belly sheets of commercial trawl nets to incorporate large diamond mesh panels.

During 2008, catch comparison experiments were conducted to assess the potential for large mesh (800mm) netting panels to reduce the by-catches of cod from gears used by Scottish vessels targeting the mixed whitefish trawl fisheries. Three different configurations of large mesh panels were rigged into an existing trawls' belly sheet and the resulting catches compared with those from an unmodified trawl. The results show that catch rates of haddock and whiting were not affected by any of the test cases but for two of the test cases cod catches were significantly reduced. For all test cases catches of anglerfish, megrim and plaice were significantly reduced. Some practical solutions to rigging large mesh panels into existing trawls were also developed.
http://www.frs-scotland.gov.uk/FRS.Web/Uploads/Documents/SISP0509.pdf

SISP Project 008/08. Report 04/09
The effects of square mesh panel mesh size and position on the selectivity of high and low powered *Nephrops* trawlers.
During 2008 experiments were conducted to improve the selectivity of round-fish from gears used by Scottish *Nephrops* trawlers targeting North Sea grounds. The main aims of these selectivity trials were to assess the differences in performance between square mesh panels (SMPs) placed in the straight extension or in the taper, between 110 and 120 mm SMPs, and between gears towed by vessels of different horsepower. Results demonstrated that compared to an 80 mm codend with no SMP, all cases with an SMP improved the selection of haddock and whiting. Increasing the mesh size of the SMP from 110 mm to 120 mm in the straight extension of the net rather than the tapered section improved the selection of whiting and was sometimes shown to improve the selection of haddock. Catches of haddock or whiting were not affected by the power of the vessel.
http://www.frs-scotland.gov.uk/FRS.Web/Uploads/Documents/0409.pdf

ENGLAND/WALES/NORTHERN & SOUTHERN IRELAND

Gear technology trials

1. Project 50% (Reducing discards in the Devon beam trawl fleet) 2009 – new fact sheets:
An innovative partnership between scientists and the Devon beam trawler fleet aimed at helping to protect fish stocks, has led to skippers reducing the amount of juvenile fish discarded overboard by 57 percent.
There are now 11 fact sheets that can be downloaded from:
http://www.cefas.co.uk/data/fishing-gear-technology-at-cefas.aspx and
http://www.seafish.org/b2b/subject.asp?p=325

Fact sheets:
Sea trial 1:
http://www.cefas.co.uk/media/135595/project50seatrialsno1mfvkorenbloem.pdf
Sea trial 2:
http://www.cefas.co.uk/media/135598/project50seatrialsno2barentszee.pdf
Sea trial 3:
http://www.cefas.co.uk/media/135773/cefasseatrial3finalforweb.pdf
Sea trial 4:
http://www.cefas.co.uk/media/135773/cefasseatrial3finalforweb.pdf
Sea trial 5:
http://www.cefas.co.uk/media/136951/cefas%20sea%20trial%205%20final%20for%20web.pdf
Sea trial 6:
http://www.cefas.co.uk/media/136954/cefas%20sea%20trial%206%20for%20web.pdf
Sea trial 7:
http://www.cefas.co.uk/media/139088/factsheet_7_%20margaret_of_ladrum.pdf
Sea trial 8:
http://www.cefas.co.uk/media/139091/factsheet_8_admiral_grenville.pdf
Sea trial 9:
http://www.cefas.co.uk/media/139095/factsheet_9_lloyd_%20tyler_version_2%20(web).pdf
Sea trial 10:
http://www.cefas.co.uk/media/139098/factsheet_10_carhelmar.pdf
Sea trial 11:
http://www.cefas.co.uk/media/139365/factsheet_11_kerrie_marie_no2%20(web).pdf

Reports:
i. Using a second square-mesh panel to facilitate the escape of whiting in 80mm codend Nephrops trawls (September 2008)
http://www.cefas.co.uk/media/131648/summary%20gear%20trials%20second%20panel%20sept%2008%20(good%20format).pdf

ii. More prawns and fewer cod caught in trials with multi-rig prawn trawl (April 2009)
http://www.cefas.co.uk/media/131639/quad%20rig%20study%20final%20version%20002%2030%20april%2020091.pdf

iii. English and Welsh Otter trawlers in ICES Sub Area VII (December 2008)
http://www.cefas.co.uk/media/131645/otter%20trawlers%20in%20ices%20vii.pdf

iv. Further North Sea fishing trials with the 'Eliminator' TM trawl (December 2008)
http://www.cefas.co.uk/media/131642/pair%20team%20eliminator%20report%202008%20final.pdf

v. Increasing the survival of discarded ray and reducing discards in a UK fishery (August 2009)
http://www.cefas.co.uk/media/133621/increasing%20the%20survival%20of%20discarded%20ray%20-%20version%201.pdf

vi. A simple trawl modification designed to reduce cod catches (September 2009)
http://www.cefas.co.uk/media/135592/mf032finalreportversionforwebsite.pdf

Press announcement
http://www.fishupdate.com/news/fullstory.php/aid/13049/Dramatic_results_in_reducing_discards_announced.html
http://fishnewseu.com/latest-news/uk/2409-cefas-social-research-project-cuts-devon-beam-trawler-discards-by-57-percent.html
http://www.worldfishingtoday.com/news/default.asp?nyId=4539

5. CEFAS 2009/2010 Fisheries Science Partnership Project
http://www.cefas.co.uk/data/fisheries-science-partnership-(fsp)/20092010-programme.aspx

6.1 North Sea 'Eliminator' Type Gear Trials
Purpose: To provide new information on comparative catch profiles of the 'eliminator' trawl to those from a conventional trawl fitted with belly cod-escape panels. And to address industry concerns that the "eliminator" trawl is not the only trawl design, which can effectively reduce cod catches in the North Sea. The simple trawl modification described in this work, has been demonstrated to reduce the catches of cod by over 55% in a mixed North Sea demersal whitefish fishery.
Timing: 20 July - 2 August 2009. Report dated September 2009.
http://www.cefas.co.uk/media/135592/mf032finalreportversionforwebsite.pdf

6.2 South Wales Bass Square Mesh Panels
Purpose: To reduce catches of undersized bass through the use of square mesh panels. In August 2009, 46 hauls were conducted. Catches were sampled and video footage was taken of fish behaviour at the square-mesh section.

Timing: 6 - 12 August 2009 and 21 - 25 August 2009. Report published December 2009. It concluded: the section of square-mesh netting fitted well in the trawl and retained its shape during fishing; a lower percentage of undersized bass were caught when using the square-mesh section; the percentage of undersized bass was 11% of the total bass catch when using the experimental trawl and 30% when using the control trawl; bass were seen to make active escape attempts when in the square-mesh section. Small bass were seen to escape from the square-mesh section; the number of discards of other species caught per hour per haul was on average 14% lower when using the square-mesh section; in general, a lower number of fish of 30cm in length and below were caught when using the square-mesh section.
http://www.cefas.co.uk/media/137283/fsp_bass_09_report.final.pdf

6.3. Modification and Testing of an 'Eliminator' Type Gear in the North Sea Saithe Fishery
Purpose: To evaluate the effectiveness of an 'Eliminator' type trawl in the North Sea saithe fishery.
Timing: June - November 2009. Report published December 2009.
The gear has also been shown to be effective at reducing cod catches in the mixed roundfish fisheries of the North Sea. In all cases, catches were much lower in the test net than in the control net, with catches of saithe being notably affected. The results of the trials suggest that the design of net investigated is not suitable for use in the North Sea saithe fishery.
http://www.cefas.co.uk/media/137295/saithe-eliminator-fsp-report-final.pdf

6.4. CCTV Development on Western Irish Sea Nephrops Vessels
Purpose: To develop a cost effective method in monitoring the amount of cod by-catch within the Irish Sea Nephrops fishery by using CCTV.

Results from the first series of trials (9–11 September) showed that, where crew catch-handling was modified, accurate assessments of cod live weights and hence percentage cod in the total catch could be made by video analysis in a cost-effective manner. Conversely, the initial trials also highlighted problems with species recognition of fish <30 cm total length. A second series of trials conducted from 23 to 27 September focused on whether or not the CCTV equipment could accurately assess the cod bycatch independent of any modified catch handling. Results indicated that video analysis failed to identify 81% of cod catches (by number). This was due to the small size of the cod being caught (mainly 12–20 cm), the presence of morphologically similar species (whiting, blue whiting, poor cod, haddock and Norway pout) in the catches, and the manual sorting and discarding procedures used on board.

The findings show that CCTV technology is perhaps not the most effective tool for monitoring small-mesh fisheries, such as the trawl fishery for *Nephrops*. The results do, however, support further investigation of the utility of CCTV technology in fisheries where larger fish are encountered (e.g. otter trawls using

120mm+ cod ends) or more selective fisheries (such as gillnetting or longlining), where gear (and by default, fish) retrieval is at a steady rate.
Timing: September 2009. Report published December 2009.
http://www.cefas.co.uk/media/137555/nicctvfinalexecsummary.pdf

6.5. Simple trawl modification to reduce cod catches
Purpose: Design a demersal trawl modification to facilitate cod escapement in order to catch fewer cod and comply with conservation objectives in the North Sea. The trawl reduced catches of cod by over 55% in a mixed North Sea demersal whitefish fishery.
Timing: Two week trial in July 2009. Report published.
http://www.cefas.co.uk/media/135592/mf032finalreportversionforwebsite.pdf

7. Other trials

7.1 Assessing discard mortality of commercially caught skates (Rajidae) – testing results concluded from laboratory experiments
Purpose: The project aim is to identify skate species discarded in representative UK fisheries, their condition and discard survival rates. CEFAS.
Timing: July 2009 to March 2011.

7.2. Assessing survivability of bycaught porbeagle and spurdog and furthering our understanding of movement patterns in UK marine waters
Purpose: The project aim is to assess the survivability of porbeagle (*Lamna nasus*) and spurdog (*Squalus acanthias*) which are bycaught but returned.
Timing: July 2009 to March 2012.

7.3. Bycatch And Discards: Management Indicators, Trends and location (BADMINTON)
Purpose: The project aim is to develop operational indicators and propose discard mitigation tools for fisheries management. This project proposes to do the following: 1. An analysis of total catch in terms of species and size composition; 2. develop indicators of discard issues; 3. Analyse the factors that determine discard amounts; 4. Investigate fishers' behaviour to understand how discarding is part of their fishing strategy; 5. Based on all previous steps, recommend potential mitigation measures. CEFAS.
Timing: August 2009 to August 2012.

7.4. Mitigating Cetacean Bycatch
Purpose: The project is to develop methods to reduce cetacean bycatch in nets by testing some specific mitigation measures (pingers), in collaboration with industry and Seafish. St Andrews University
Timing: April 2008 to March 2011.

7.5. Northern Ireland (AFBI and DARD)

Purpose: 120mm square mesh panels in various positions have been trialed in *nephrops* trawls in the Irish Sea.

7.6. Southern Ireland

Purpose: BIM and MI have trialed Swedish grids with and without square mesh panels in the Irish Sea. Reports for all these are due for release in the near future. Much of the work being done in the Irish Sea is trying to find an answer to Article 11 and Article 13 in the Council Regulation (EC) No 1342/2008 *Establishing a long-term plan for cod stocks and the fisheries exploiting those stocks*. These articles cover fishing effort regime and the allocation of fishing effort for highly selective gear and cod-avoiding fishing trips.
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:348:0020:0033:EN:PDF

Policy

1. Defra Response to the European Commission's Green Paper on Reform of the Common Fisheries Policy. 23 December 2009.

The Defra response is full of mentions of the need to reduce discard levels with the aim of "fish stocks within safe biological limits, with incentives and a regulatory framework to reduce discards".

A reformed CFP should set limits on certain key issues such as discards and by-catch and, at the same time, give fishers greater opportunity and incentives to devise their own means of achieving evidence-based results with a clear requirement to have input from scientists and other experts to achieve these results. ***The UK therefore supports moves towards results-based management based on sound evidence as a way of both giving more control back to fishers and focussing more strongly on the results or outcomes we all want to see. There will of course need to be appropriate safeguards put in place to take action in the event that key objectives are not being met.***

The unacceptably high level of fish discards is a reflection of the failure of the present system. Simply imposing a discard ban will not, in our view, eliminate the problem. Greater flexibility to transfer fishing opportunities combined with a greater emphasis on catch limits as opposed to landing limits, offers the potential to tackle discards more effectively. That system would help to minimise discards of commercial stocks, and indeed would provide strong incentives to reduce discards to levels consistent with maximising the overall value of the fishery, i.e. minimising over-quota discards, and providing a strong incentive to avoid high grading and the capture of immature fish. In addition, the UK believes that the focus on reducing discards should not be restricted to commercial stocks. There needs to be a clear commitment in a reformed CFP to reduce the incidental catch of all marine species, including seabirds and cetaceans. We want local fishermen to find their own solutions to the discard and bycatch problems specific to their fisheries. A regionalised CFP should be designed to make that happen.

http://www.defra.gov.uk/foodfarm/fisheries/documents/fisheries/cfp-response.pdf

2. Discarding in UK Commercial Fisheries – PHD Project application, School of Environmental Sciences, University of East Anglia
This PhD project will quantify the spatial and temporal variation in discarding, and seek to understand the biological, commercial and policy drivers of this. It will use population modelling to examine the impacts of discarding on populations of individual species, including estimating the future catches and income foregone, and assess the impacts of discarding on the marine ecosystem as a whole. Application deadline 12 March 2010.
http://www.findaphd.com/search/showproject.asp?projectid=25837

3. Speech by Huw Irranca-Davies MP at the 2 day Inter-RAC (Regional Advisory Committees) Conference, Edinburgh. Achieving sustainable fisheries: 4 November 2009
I agree with those who say that not all the problems of today require long discussions on future change. I am committed to tackling the tragedy of discarding. I know that everyone here is committed also. That is why we are working together in the UK and with our EU partners to do something now. In the UK, Richard Lochhead and I, are working together to identify new ways of tackling the dilemma of discards. We are working with Denmark and Germany to test a new initiative that if successful would contribute to the development of options for reform but also importantly may provide a way to do something about the problem of discarding sooner than 2012. I congratulate the Danes on developing the idea and I am pleased to be able to associate the UK with that project.

We must not just focus our attention on reducing discards of commercial species. We also have to strive to reduce the incidental catch of marine species, such as seabirds and cetaceans. This is why the UK is playing a leading role in finding ways to reduce by-catch and will continue to push for firm commitments on this in the EU and internationally.
http://www.defra.gov.uk/corporate/about/who/ministers/speeches/irranca-davies/hid091104.htm
http://www.nsrac.org/2009/09/inter-rac-conference-decision-making-withina-reformed-cfp/

DENMARK

1. NEAFC agreement – 19 November 2009

The 28th annual meeting of the Northeast Atlantic Fisheries Commission (NEAFC) adopted a ban on discards in international waters on the major stocks regulated by NEAFC.

After a proposal from Norway, Russian Federation, Iceland and Denmark (in respect of Faroe Island and Greenland) a ban on discards of the species regulated by NEAFC in the high seas, including mackerel, blue whiting, herring, haddock and redfish, was adopted. NEAFC also agreed on to continue the work of developing technical measures to assist the contracting parties to implement the ban on discards.
http://www.regjeringen.no/en/dep/fkd/Press-Centre/Press-releases/2009/north-atlantic-ban-on-discards-in-intern.html?id=586750

2. Danish proposals for all catches to count against quota

Danish Minister of Food, Agriculture and Fisheries Eva Kjer Hansen says that the results of the camera monitoring support the Danish proposals for the future European Common Fisheries Policy. Denmark is asking that the EU Fisheries Council allow from January 2010 a voluntary scheme for Danish fishermen that would require all catches of fish to count against their quota. The scheme would require fishermen to have observers or cameras on board their vessels to show that they are not discarding fish. In exchange for catching less fish they would be allowed to land more.

“The catch quota method ensures that all fish caught is counted against the quota. Writing off everything that is caught on the boat against the quota will reduce the motivation to discard small fish and induce an incentive to fish selectively.”
http://www.intrafish.no/

3. Individual Transferable Quota

In January 2007 Denmark began a system of individual transferable quotas (ITQ), where national quotas are divided among the fleet and can be traded or pooled between vessels. The consequences have been dramatic: the fleet has shrunk by 25% in just 18 months as smaller fishermen sold out.

NORWAY

1. Press statement. Nordic Council: Discarding fish is deplorable. 17 December 2009.

The Nordic Council strongly urges the EU Commission to ban fish discards **….** Every year European fishermen throw enormous quantities of fish back into the sea, and often the unwanted catch does not survive this harsh treatment. Discarding is reprehensible both from ethical, and from environmental and stock considerations. Therefore, in its comments to the reform of the EU fisheries policy, the Nordic Council strongly urges the EU Commission to base future catch regulations on different principles that the current ones. The Nordic Council calls for the speeding up of initiatives to protect species and habitats, and for catch levels to be set in a way that helps to rebuild the overfished European stocks.
http://www.norden.org/en/news-and-events/news/nordic-council-discarding-fish-is-deplorable

2. EU and Norway agree to pelagic discards ban – July 2009

The EU, Norway and the Faroe Islands agreed in July 2009 to implement a highgrading ban from 1 January 2010 in several of the principal pelagic fisheries including mackerel, herring and horse mackerel.
The following measures are proposed:

- ✓ Highgrading (discarding of fish which can be landed legally) of these species is banned throughout the entire migratory range of the stocks in the North East Atlantic.
- ✓ Slipping (releasing the fish before the net is fully taken on board the fishing vessel, resulting in the loss of dead or dying fish) of these species is banned throughout the entire migratory range of the stocks in the North East Atlantic.
- ✓ Fishing vessels shall move their fishing grounds when the haul contains more than 10% of undersized fish (below the minimum landing sizes or the minimum catching sizes) of these species.

http://fishnewseu.com/latest-news/scottish/1523-pelagic-high-grading-ban-proposal-wins-warm-welcome.html

3. Norwegian policy paper on discards

The discarding of fish is one of the biggest threats to fish stocks, a Norwegian Fisheries Ministry policy paper has underlined. The document, setting out the Norwegian approach to discarding, underlines that the policy of sustainable marine resource management is based on certain key principles: sustainable harvesting, ecosystem approach, adequate regulations and an efficient control and enforcement scheme.

But these principles are undermined by discarding, which is one of the most serious threats to sustainable management. Norway had accordingly established a set of regulations and other management measures in order to reduce the problem.

How it works - Carrot and stick policy in Norway

- ✓ In parallel with the prohibition against discarding, there is a compensation scheme for fishermen who land fish caught unintentionally in contravention of the regulations.
- ✓ The general rule is that the economic value of the fish caught in contravention of the regulations is forfeited to the state. As such, where vessel quotas or by-catch limits are exceeded, the fishermen may regard it as better to discard the illegal fish rather than landing it.
- ✓ As an attempt to counter such behaviour and to support the loyal fishermen, there is a compensation scheme. Fishermen retain 20% of the forfeited sum of money if it is established that the illegal catch was taken unintentionally. However, this policy only applies for the whitefish sector.
- ✓ In the pelagic fisheries, there are various measures to avoid overshooting of quotas. Overshooting is mainly caused by the fishery operation itself. This may be due to problems with estimating the last catch or by-catch in other fisheries. The main measure for avoiding overshooting in pelagic fisheries is the so-called under-regulation of the different group quotas. This means that the sum of the vessel quotas is lower than the overall group quota decided on. The difference is estimated on the basis of earlier overfishing at vessel level.
- ✓ Attempts to set aside the quantities required to allow for by-catches before determining the quantities for direct fisheries. For North Sea cod, the first priority is to cover unavoidable by-catch in other fisheries. The necessary quantity to cover unavoidable by-catch is calculated annually and is set aside before the fishery is opened.

http://fishnewseu.com/latest-news/world/1495-norway-has-used-carrot-and-stick-policy-to-end-discarding.html
http://www.regjeringen.no/upload/FKD/Brosjyrer%20og%20veildeninger/fact_sheet_discard.pdf

ICELAND

1. Discard levels – Marine Research Institute press release 14 October 2009 Re annual report on discards in demersal Icelandic fisheries 2008 (Marine Research 147) – mainly covering cod (*Gadus morhua*) and haddock (*Melanogrammus aeglefinus*).

Key points:

- Cod discards 0.79% of landings. Cod discards amounted to 1090 metric tons, 0.79% of landings, the third lowest proportion value over the period 2001-2008.
- Haddock discards were 1935 tons, 1.93%, the second lowest proportion recorded during 2001-2008.
- Mean annual discard of cod over the period 2001-2008 was 2082 tons, 1.12% of landings.
- Mean annual discard of haddock was 2582 tons, 3.58%.
- The combined discard of cod and haddock was 3025 tons in 2008, a decrease by more than 1/3 since 2007, but was 4665 tons on average 2001-2008, or 1.83% of cod and haddock landings.
- By numbers cod discards 2001-2008 averaged 1.9 mill. fish, 3.01% of numbers landed, and haddock discards averaged 4.1 mill. fish, 7.93%.
- The combined annual discards of both species averaged 5.9 million fish 2001-2008.

http://www.interseafood.com/ifx/?MIval=dispatch&pg=newsview&news_action=read&id_news=20337
http://www.hafro.is/Bokasafn/Timarit/fjolrit-147.pdf

2. Overview of the most relevant projects being carried out by the Marine Research Institute and the Directorate of Fisheries in Iceland:
The Marine Research Institute is working on projects that aim to improve selectiveness of fishing gear, which in the long run might reduce the 'need or incentive' for discarding; and the Directorate of Fisheries is implementing a monitoring system that takes advantage of a new legislation that obligates all vessels to turn in real-time electronic logbooks.

The Marine Research Institute

- **Species selective demersal trawling:** The potential for species separation in demersal trawling through the use of horizontal separation panels with upper and lower codend has been investigated. Experiments with various panel positions and mesh sizes of panels have been conducted under commercial conditions. In general, 70–96% separation of cod from haddock was obtained, depending on fish length, rigging and seabed type. By extending the panel towards the trawl opening, better separation of cod was obtained, but less separation of haddock. Most other species such as redfish (S*ebastes spp*), Wolffish (*Anarhicas lupus*), Saithe (*Pollachius virens*) and flatfish species were retained in the lower

codend. Increasing the mesh size of the panel enhanced penetration of fish through the panel, resulting in higher proportion of most species in the upper codend. This can enable fishermen to avoid catching cod and other undesirable species; and therefore reduce the incentive to discard catch.

- **Bycatch reduction in Nephrops trawling:** Large mesh sizes (145–165 mm) in the top panel of a *Nephrops* trawl were tested in three surveys in 2008. A trouser trawl was used in the experiments, with one belly according to the legislation (80 mm mesh size, two 200 mm square mesh panels) and the other belly with larger mesh. All fish and samples of the *Nephrops* catches were measured. The increased mesh sizes appear not to affect *Nephrops*, cod, ling, monk-fish and wolffish catches. The square mesh panels were more efficient in excluding haddock than 145 mm meshes alone, but when increasing both the mesh sizes to 165 mm and the hanging ratio, the haddock catches were significantly reduced, only 13% of the total haddock catches were retained in the codend attached to the 165mm panel. Bycatch reduction in Nephrops trawling is expected to reduce discarding of undesirable species.
- **The effect of hook- and bait sizes on size selection in longline fisheries.** The effect of hook and bait size on fishing efficiency and size composition of cod (*Gadus morhua*), haddock (*Melanogrammus aeglefinus*) and wolffish (*Anarhichas lupus*) were investigated in a designed experiment in the Icelandic longline fishery. Five hook sizes, EZ 10–14, and two bait sizes, ~10 and 30 g, were compared. The bait was Saury (*Cololabis saira*). Bait sizes were found to affect catch rates and size selection in the longline fishery for haddock, cod and wolffish. Higher catch rates of haddock were obtained with small bait, but large bait caught cod and wolffish more effectively. The proportion of fish caught with large versus small bait increased significantly with fish size for all three species, and the relationship can be described with a logistic curve. Smaller hooks result generally in higher catches, but there are interactions between bait and hook sizes for cod and haddock; hook sizes affect size selection of cod when small baits are used and haddock selection when large baits are used. The proportion of catches of juvenile fish appeared to be inversely related to fish abundance. These results might affect high-grating onboard longliners.

The Directorate of Fisheries:

- **Electronic logbooks:** Electronic logbooks are currently being installed in the Icelandic fishing fleet. Before end of year 2009 all vessels will be obligated to send real-time information on their catch to the Directorate of Fisheries. This will enable the Directorate of Fisheries to compare catch between vessels. Discrepancies in reports between similar vessels on the same fishing ground can suggest high-grating. There are currently over 200 vessels that are using the electronic logbooks. Vessel owners are not only using the electronic logbooks to report to the Directorate of Fisheries; they are also using the information to collect data for their own processing.

FRANCE/HOLLAND/FAROE ISLANDS/GERMANY

1. Dutch beam trawlers re-gear for profit

The Dutch beam trawl sector has embarked on an overhaul of its fishing gear to halve fuel costs and return the sector to profitability. The aim is to reduce fuel costs by 25-50%.

In May 2009 the fishing vessel TX68 became the first in the Dutch fleet to be fitted with new 'pulse-trawling' gear. This emits a short electrical burst that draws bottom-dwellers from the sea bed. The scientific view is that pulse fishing can create both fuel and carbon emission savings of around 50%. Discards are also reduced by 50%, and the disturbance of the seabed declines 30%. However, TX 68's catches of sole and plaice have not fallen using this method.
http://www.intrafish.no/global/news/article259753.ece?service=print

2. French trials to beat discards

The Selecmer regional fisheries development project, which started in March 2008, is now complete. The aim was to reduce catches of undersized whiting (under 27 cm) while minimising losses of larger whiting and other commercial species in the standard French trawl.

- A 120 mm square panel located in a trawl's extension piece improved escape rates of undersized whiting by between 13% and 40%, but also resulted in a high loss rate of whiting, mackerel and red mullet.
- A trial with a square mesh panel in 80 mm resulted in no escape of whiting.
- Trials with selectivity grids showed an escape rate for whiting under 22 cm of between 16 and 30%, depending on the bar spacing of the grids.

Fishing News International November 2009

3. Faroe Islands

A presentation on Sustainable Fisheries by the Faroe Marine Research Institute highlights the effort management system adopted by fishermen which means that the fisheries do not have a problem with discards. These include controlling the number of days by vessel group, areas closed to trawling, areas closed during spawning, areas with corals closed for active gear, experiments with fish traps and a minimum mesh size of 135mm. For more information on fisheries management in the Faroe Islands see:
http://www.fishin.fo/default.asp

4. Fishermen's initiative from the Bay of Biscay

French fishermen are now using a gear design in the nephrops fishery that catches around 80% less undersized fish than conservative trawls.
Borg speech at Fisheries Council 25 May 2009 Statement on discards
http://ec.europa.eu/fisheries/press_corner/speeches/archives/speeches_2009/speech09_11_en.htm http://assets.wwf.org.uk/downloads/discard_reduction.pdf

EUROPEAN PERSPECTIVE

1. Preparations for Agriculture & Fisheries Council Dec 2009 press release 11 December 2009

'As part of the ongoing efforts to reduce discards, the practice of high-grading (i.e. discarding fish in view of a higher size/price catch) for any species subject to a quota has been banned. The Commission remains committed to reducing discards. In addition, fishers can do their bit to fish responsibly by returning to port once their quotas are used up, using selective fishing gear and avoiding concentrations of young fish.'
http://ec.europa.eu/fisheries/press_corner/press_releases/2009/com09_78_en.htm

2. Decision on discards postponed - 30 November 2009

THE conservation organisation WWF has blamed Spanish and French delegations at the November Agriculture and Fisheries Council for blocking changes to technical regulations that would have reduced discards by European fishing vessels. This would see the introduction of larger fishing nets, limited fishing seasons and a minimum size for fish caught in the North-East Atlantic, the North Sea, Skagerrak and Kattegat. However it is rumoured that after strong opposition from France and Spain the proposal was rejected.
http://www.fishnewseu.com/latest-news/world/2328-www-say-france-and-spain-blocked-discard-measures.htm