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The Sea Fishing industry in Northern Ireland – issues, challenges and opportunities

Overall Context and Issues

This paper sets out some of the issues affecting the Sea Fishing industry within Northern Ireland both at present and in the near future. As such, this paper does not seek to present solutions to the issues but rather attempts to quantify and pin down many of the key challenges that fishing communities and those who live and work within them face.

There are effectively six sections to this paper as follows:

1. The EU Common Fisheries Policy – overview, impacts and reform;
2. The state of the sea fishing industry in Northern Ireland;
3. The general state of the Irish Sea Fishery;
4. Issues relating to the Irish Sea Cod Fishery;
5. Issues relating to the Irish Sea Nephrops Fishery; and
6. Issues relating to Fish Discards in the Irish Sea.

Whilst these listed issues are by no means the only ones facing Sea Fishing in Northern Ireland they are broadly recognised by most stakeholders as being key ones to address.

1. The EU Common Fisheries Policy – overview, impacts and reform.

1.1 Overview

The EU's Common Fisheries Policy is the main policy mechanism impacting upon the sea fishing industry within Northern Ireland, past, present and future.

The general principle that all EU members should have equal access to the waters of all member states was broadly agreed as part of the then European Economic Community's aspirations in 1970. The formalised Common Fisheries Policy emerged from this principle in 1983 and is the EU's key mechanism for the management of fisheries.

In 2002 the CFP underwent a significant reform with the aim of ensuring the sustainable development of fishing across the EU taking account of the environmental, economic and social impacts of the industry. The 2002 reforms[1] also brought to the fore the need for reliable and independent scientific advice and evidence when decisions were being made around the setting of fishing quota and the management of fish stocks.

As things currently stand with regard to the remit of the CFP, the European Commission currently promotes the following as being the important areas of action within the policy[2]:

- laying down rules to ensure Europe's fisheries are **sustainable** and do not damage the marine environment;
- providing national authorities with the tools to **enforce** these rules and punish offenders;
- monitoring the **size of the European fishing fleet** and preventing it from expanding further;
- providing **funding and technical support** for initiatives that can make the industry more sustainable;
- **negotiating on behalf of EU countries** in international fisheries organisations and with non-EU countries around the world;

[1] Council Regulation (EC) No 2371/2002 of 20 December 2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy

[2] European Commission Website, Common Fisheries Policy Information.

- helping producers, processors and distributors get a **fair price for their produce** and ensuring consumers can trust the seafood they eat;
- supporting the development of a **dynamic EU aquaculture sector** (fish, seafood and algae farms);
- funding **scientific research and data collection**, to ensure a sound basis for policy and decision making;

The 2002 reforms also introduced the concept of stakeholder involvement in decisions relating to the development of the CFP. This commitment led to the creation of 7 Regional Advisory Councils in 2004 with the aim of advising the European Commission on strategic policy decisions around fishing. Of the 7 created RACs 5 are based on a geographical coverage whilst two deal with wider issues as follows:

- Baltic Sea RAC;
- Mediterranean RAC;
- North Sea RAC;
- North Western Waters RAC (including the Irish Sea);
- South Western Waters RAC;
- Pelagic Stocks RAC;
- High Sea RAC.

The Regional Advisory Councils currently have a minimal role in the actual management of the EU's fisheries but they provide a vital space where stakeholders and interested parties from the fishing industry, EU Commission, environmental groups consumers and scientists can interact.

1.2 Actual impacts of the CFP

In terms of how the Common Fisheries Policy actually impacts on the sea fishing industry the most obvious and well known example is the creation and maintenance of the quota system for catches. Under this system EU member states are allocated a quota for the amount and type of fish they can catch based upon their existing fisheries. In an effort to ensure that there is no overfishing the CFP operates a mechanism to calculate the maximum amount of fish that can be removed from any fishery called the Total Allowable Catch (TAC). These TACs are traditionally agreed by EU Fisheries Ministers every December.

The latest EU Fisheries Council meeting that was held in Brussels on the 13th-14th December 2010, and attended by DARD Minister, Michelle Gildernew, saw the following changes being made to the TAC figures for selected species within area VIIa(ref page 11 Figure 1 in this report) covering the Irish Sea:

Species	Council TAC 2010 (tonnes)	Council TAC 2011 (tonnes)	% difference
Cod	674	505	-25%

Haddock	1,424	1,317	-8%
Herring	4,800	5,280	+10%
Nephrops (Dublin Bay prawns)	22,432	21,759	-3%
Plaice	1,627	1,627	-
Pollack (all of area VII not just Irish Sea)	13,770	13,495	-2%
Sole	402	390	-2%
Whiting	157	118	-25%

Table 1: 2011 Total allowable Catch for selected species and percentage change from 2010 – Area VIIa (Irish Sea)[3].

One of the most significant impacts of the CFP in Northern Ireland has been on the shape of the actual fishing fleet in Northern Ireland. The actual number of sea fishing boats operating within Northern Ireland has reduced since the introduction of the CFP in 1983. Between 1993 and 2003 a total of 124 fishing vessels were decommissioned in Northern Ireland[4].

In addition the types of catch that Northern Ireland fishing vessels are landing has changed in recent years. The heavy restrictions on the fishing of white fish such as cod, due to the apparently parlous state of stocks within the Irish Sea, has seen local fishermen focussing upon catching shellfish (including prawns). The Cod Recovery Plan that has been in force for the Irish Sea since the year 2000 has seen severe restrictions being placed upon the number of days that fishermen here can spend at sea and on the type and quantity of fish they can catch. In this regard it is very clear that the Total Allowable Catch (TAC) figures and Cod Recovery Plan have had and continue to have a very direct effect on both the size profitability and target species of the Northern Ireland Fishing Industry.

The CFP has also seen the creation of a grants scheme to enable the fishing industry across the EU to be more efficient and sustainable. The European Commission has introduced a series of schemes as a way to support the fisheries sector. At present the European Fisheries Fund (EFF) is running from 2007-2013 with a total budget of €3.8bn and this scheme was preceded by the Financial Instrument for Fisheries Guidance (FIFG).

The EFF scheme requires national governments to draw up a national plan setting out how they plan to develop their fisheries (inland and sea) over the period of 2009-2013. Each national plan needs to set priorities as well as commit matching government funding to what is available from the EU. At present the EFF has 5 priority areas as follows[5]:

- **Adjustment of the fleet (axis 1)** – can mean aid for decommissioning on a temporary or permanent basis or measures to improve efficiency and safety of active vessels;

[3] European Commission, press release 13-14th December 2010
[4] Tingley D., Northern Ireland Fleet Futures Analysis (2004-2013) - Methodology and Analysis, DARD, April 2006
[5] European Fisheries Fund Factsheet, European Commission Website

- **Aquaculture, processing and marketing, inland fishing (axis 2)** – funding available for diversification into new species, environmentally friendly aquaculture, public and animal health measures and lifelong learning;
- **Measures of common interest (axis 3)** – support can be given to activities such as the protection of aquatic flora and fauna, ports, shelters and landing sites, pilot projects and the development of new marketing and promotional campaigns;
- **Sustainable development of fisheries (axis 4)** – aims to help local communities reduce their dependency on fish catches. Coastal communities with a significant level of employment in the fisheries sector can access funds to strengthen their general competitiveness, develop tourism infrastructure and services, protect the environment and encourage inter regional and transnational co-operation;
- **Technical assistance (axis 5)** – covers items including studies, reports, information activities and other actions relating to the implementation of the operational programmes.

The EFF within Northern Ireland has been allocated a total of €18.1 million. This figure which is matched by DARD means that fishermen and fishing communities in Northern Ireland potentially have access to grants worth a total of €36m.

The previous FIFG scheme provided total funding of nearly £29m to Northern Ireland from 2000-2006[6]. Just under £9m of this amount went towards the decommissioning of fishing vessels on either a temporary basis whilst the funding also enable significant infrastructural investment in each of Northern Ireland's 3 sea fishing ports that included examples such as the building of a chill room in Portavogie, the refurbishment of a slipway in Kilkeel and the refurbishing of the old fish market building in Ardglass.

1.3 CFP Reform

Looking to the future of the fishing industry across the EU, in 2008 the Commission launched what has been generally referred to as a 'radical reform' of the Common Fisheries Policy (CFP). The first stage in this process saw the publication of a Green Paper[7] that was put out for public consultation between April and December 2009, and this process yielded 17,000 responses and a subsequent synopsis paper of the main issues raised[8]. A conference held in La Coruna, Spain in May 2010 looked at the responses to the public consultation under the 3 broad headings of governance, access and resource management and the differentiated regime for small-scale and coastal fisheries.

As part of this ongoing process of reform the European Commission has hoped to publish legislative proposals for the reform of the CFP in early 2011 with a view to

[6] The European Fisheries Fund Draft Investment Plan, DARD, 2nd May 2008
[7] Green Paper on the Reform of the Common Fisheries Policy, Commission of the European Communities, 22 April 2009
[8] Synthesis of the consultation on the reform of the Common Fisheries Policy, Commission Staff Working Document, European Commission, 16th April 2010.

revised CFP coming into force on the 1st of January 2013, but as yet nothing has appeared.

What is known is the agreed position of both DARD Minister Michelle Gildernew and the other Fisheries Ministers from across the UK in relation to the priorities they would like to see a reformed CFP focussing on. A key requirement, not just for the UK, but the majority of EU nations, is the increased regionalisation/decentralisation of the CFP and the associated increased involvement of local fishermen in the actual management of local fisheries such as the Irish Sea.

These key principles of regionalisation/decentralisation and greater stakeholder involvement sit well with the following more specific and agreed UK issues for CFP to address, which were outlined by Defra Fisheries Minister Richard Benyon at the EU Agriculture and Fisheries Council meeting in Luxembourg on the 29th June 2010[9].

- **Getting rid of unnecessary and over-detailed regulation** - which means moving away from the current centralised system that attempts to micro-manage fishermen's daily activities to a reformed CFP that enables fishermen to take responsibility for the sustainability of the stocks.
- **Dealing with the rigidity of current quota rules** - it is recognised that the current, inflexible system of annual quota allocations is contributing to high levels of discards. There is a need to find a better way to manage mixed fisheries more imaginatively, and again we would support approaches that will help fishermen to take responsibility for good fisheries management.
- **Catering for the diversity of the fishing fleet** - there are many different fleets both locally and throughout the EU that have different needs and circumstances. Our long term aim is for all fishermen, from large scale to artisanal, to be economically viable in a market-based system which allows them to extract the maximum wealth from the fisheries they access. But we recognise that special measures may be needed to help small fishing businesses adapt and prosper, including where they make a substantial contribution to local, sometimes remote, coastal communities.
- **Reducing discards** - we want to see European-wide action to tackle this economic and environmental waste. A reformed CFP must provide the incentives and regulatory framework to enable us to catch less but land more of it.
- **Greater integration of fisheries with other marine policies** – we acknowledge that Fisheries has tended to be seen as somehow separate from what else goes on in our seas. But with increasing and competing pressure for using the resources our marine environment has to offer there is a need to align the CFP with other marine objectives, especially those in the Marine Strategy Framework Directive. We want to see rules streamlined so that Member States can implement conservation measures in a straightforward way.

[9] Agriculture and Fisheries Council (June), The Secretary of State for Environment, Food and Rural Affairs (Mrs Caroline Spelman), Written Ministerial Statements for 12 July 2010, Houses of Parliament, Hansard.

- **Management of aquaculture** - this is set to play an increasing role in the supply of fish and food security. But we would argue that it does not follow that the CFP should seek to exert detailed control over aquaculture and unless good reasons can be given, the management of aquaculture should be left to Member States.

In terms of more recent developments at the 18th October 2010 Fisheries Committee meeting, Commissioner Damanaki revealed the she was *"..aiming to have the upcoming CFP reform package ready in time for the Commission to adopt it towards the end of the first half of next year"*.[10]

In addition Mrs Damanaki revealed that the proposed package will consist of the following five parts:

- **An overarching Commission Communication**, explaining the content of our proposals, but also highlighting the Commission's ideas for all those areas which will not be part of the proposed legal instruments. I am thinking here, for example, about issues such as what we intend to do to improve the quality of scientific advice;
- **A Communication on the reformed international dimension of the CFP** covering international organisations, Regional Fisheries Management Organisations and Fisheries Partnership Agreements.
- **The proposal with the basic framework for the functioning of the CFP**. To introduce the radical reform we have already discussed.
- **A proposal to reform the market policy**. We will address sector organisation and the role of producer organisations, to improve the management of fisheries and aquaculture activities and the marketing of fisheries and aquaculture products. It will also revisit instruments to support stability of the market and information to consumers, through a labelling system.
- **A proposal on a fund to support the new Integrated Maritime Policy, the Common Fisheries Policy and aquaculture**. Here we envisage integrating all the financial instruments we need, building it in support of the objectives of our fisheries policies and contributing in a broader context to the aims of the Europe2020 Strategy. I can already tell you that I won't be proposing more of the same. The new fund will be there to help deliver the policy we want.

[10] Press release by Maria Damanaki,Member of the European Commission Responsible for Maritime Affairs and Fisheries, Meeting of the Fisheries Committee (PECH) of the European Parliament, 18th October 2010

Key Questions around the CFP and CFP reform

- How will the demands for both greater regionalisation/decentralisation and simpler regulation be met through CFP reform – are these realistic demands/expectations?
- In practical terms how best can the expertise and knowledge of local fishermen be brought to bear in both the process of CFP reform and the implementation and management of the finalised policy?
- How can the accuracy of the scientific knowledge on which the health of fish stocks and TAC's are based be further enhanced to ensure the sustainable future of our fisheries? – what constructive role can both local fishermen and the Northern Ireland Executive play in this process?
- What steps can be taken at both a local and EU level to increase the amount of money and support available to the local fishing community through the European Fisheries Fund? – including the possible recommencement of a vessel decommissioning scheme.

2. The state of the Sea Fishing industry in Northern Ireland

For the purpose of this paper references to the Fishing Industry relate to the sea fishing industry within Northern Ireland, as this makes up the biggest part of the fishing industry here.

Table 1 below highlights the total number of UK fishermen at regular periods from 1938 to 2009.

	Northern Ireland	England and Wales	Scotland
1938	898	29,011	17,915
1948	1,100	29,319	17,228
1960	650	16,358	11,246
1975	823	12,463	8,848
1985	1,102	13,020	8,102
1991	1,369	No data	8,095
1995	1,159	10,432	8,395
2005	569	7,107	5,155
2006	613	7,116	5,205
2007	658	6,854	5,359
2008	625	6,597	5,392
2009	654	6,209	5,349

Table 2 : UK constituent country fishermen numbers, 2009[11]

[11] United Kingdom Sea Fisheries Statistics, 2009, Marine and Fisheries Agency, Defra

It is clear from the data in table 1 that the numbers of fishermen both within Northern Ireland and the UK as a whole has fluctuated significantly since 1938, but that in general terms the number of fishermen across the UK is now lower than it once was. Whilst the industry in England, Wales and Scotland peaked in 1948 and 1938 respectively, Northern Ireland saw its biggest number of recorded fishermen in 1991 when there were a total of 1,369 fishermen employed here in total.

In terms of ports, the boats which constitute the sea fishing industry in Northern Ireland are mainly located in the 3 Co Down fishing villages of Portavogie, Kilkeel and Ardglass. Based on 2009 figures all 3 of these ports are within the UK's top 20 ports in terms of the tonnage of fish landed by UK vessels. Table 3 below highlights the catch landed in each port in 2008 as well as the approximate value of these catches in millions of pounds.

	2008 Quantity (tonnes)	Value (£ millions)	2009 Quantity (tonnes)	Value (£ millions)
Ardglass	9,900	7.0	8,500	5.6
Kilkeel	5,100	8.1	4,100	5.4
Portavogie	3,200	5.7	3,000	4.7

Table 3: Fish landed into NI ports by UK vessels, 2008 and 2009[12]

In terms of the actual types of fish that make up these landings in Northern Irish ports table 4 below provides a breakdown.

	Demersal tonnes	Demersal £	Pelagic tonnes	Pelagic £	Shellfish tonnes	Shellfish £
Ardglass	200	200,000	6,000	2,200,000	2,300	3,200,000
Kilkeel	500	700,000	100	-	3,500	4,700,000
Portavogie	600	1,000,000	-	-	2,500	3,700,000

Table 4: Fish catches by UK boats at NI ports - type, tonnage and value, 2009[13]

It is clear from the figures presented in table 4 that shellfish make up the most significant part of the overall catch landed at Northern Ireland's 3 ports. Pelagic fish which incorporate species such as mackerel and herring make up the next largest tonnage landed at NI ports followed by the lower tonnage but more expensive Demersal fish which incorporate species including cod and plaice.

According to the recently published State of the Seas report[14] produced by the DOE, the Northern Irish fishing fleet is broken down as follows:

- 147 registered vessels over 10 metres in length – mainly fishing for nephrop (Dublin Bay prawn);
- 204 registered vessels under 10 metres in length - mostly doing inshore fishing;
- 2 vessels seasonally targeting Irish Sea Herring;

[12] United Kingdom Sea Fisheries Statistics, 2009, Marine and Fisheries Agency, Defra
[13] United Kingdom Sea Fisheries Statistics, 2009, Marine and Fisheries Agency, Defra
[14] Northern Ireland State of the Seas Report, AFBI and NIEA, January 2011.

- A small fleet of semi pelagic trawlers targeting whitefish; and
- Small boat (skiff) fishery targeting herring on the Mourne shore.

The actual age of the fishing fleet is also of interest within Northern Ireland given the fact that of the 370 boats making up the total fishing fleet within Northern Ireland in 2009 the greatest number of boats had been built between 1981 and 1990 (28%).

Year of Construction	Number of boats (NI)	Percentage of total (NI)	Percentage of total (Scotland)	Percentage of total (England)	Percentage of total (Wales)
Unknown	25	7%	8%	8%	12%
1960 or earlier	9	2%	3%	4%	1%
1961-70	44	12%	7%	7%	3%
1971-80	92	25%	21%	20%	17%
1981-1990	102	28%	30%	28%	31%
1991-2000	63	17%	19%	18%	19%
2001-2009	35	9%	12%	15%	17%

Table 5: Age of the fishing fleet - NI versus rest of the UK, 2009[15]

Looking at the figures from across the UK it is clear that the fishing fleet within Northern Ireland has more older boats when compared with the other UK nations.

With regard to the issue of representation there are currently 2 fish producer organisations that have active memberships within Northern in the form of the Anglo Northern Irish Fish Producers Organisation, which had a total 45 vessels membership in 2008-2009 and the Northern Ireland Fish Producers Organisation, which had a total of 118 vessels in membership in 2008-2009[16].

Key Questions around the local fishing industry

- How sustainable is the local fishing industry given its almost total reliance upon nephrops? What steps can be taken to diversify the fleet activities?
- Given the small size of the local fishing fleet in both UK and EU terms what practical support can be given to the local industry to ensure that its voice is both heard and listened to at a UK and EU level?
- What steps can be taken to address concerns around both the age and condition of some vessels within our fleet and the state of the infrastructure supporting the industry within our local ports – how could European Fisheries Fund support or other funding streams be best utilised to address these issues?

[15] United Kingdom Sea Fisheries Statistics, 2009, Marine and Fisheries Agency, Defra
[16] United Kingdom Sea Fisheries Statistics, 2009, Marine and Fisheries Agency, Defra

3. The general state of the Irish Sea Fishery

For the purpose of this paper the focus is on the Irish Sea Fishery which has traditionally been the main focus of effort for the majority of our fishing fleet. The geographical limits of the Irish Sea fishery are generally accepted as being those set by the International Council for the Exploration of the Seas (ICES), which identifies the Irish Sea as area VIIa (see figure 1 below) on all of its correspondence. This designation is generally widely accepted as a result of ICES providing scientific support and guidance on sea fishing to the European Commission, which is the main source of fisheries legislation impacting on Northern Ireland.

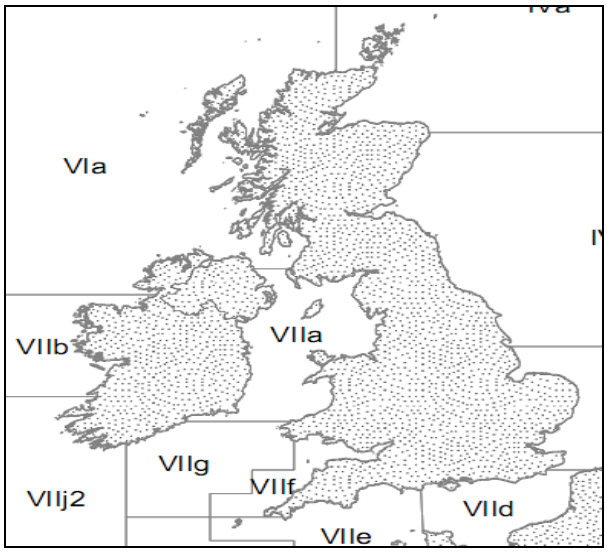

Figure 1: International Council for the Exploration of the Seas (ICES) Area Map[17]

In terms of the health of the Irish Sea fish stocks ICES is the body that collates and analyses the data provided by marine scientists within individual nations on which stock assessments are based.

A fish stock assessment is made using data collected by monitoring fish landed at ports, the catches onboard fishing vessels, and by research ships undertaking independent sampling surveys in terms of catches. This data once collected enables an assessment of the health of the fish stock to be established. There are 3 critical measures used here as follows:

- **The level of fishing mortality** – the proportion of a stock killed/dying as a result of fishing activity;
- **The spawning stock biomass** – the total weight of fish within a stock that are able to spawn (reproduce);
- **The recruitment levels** – the number of young fish entering the fishery either through year groups ageing or fish migration.

[17] ICES Area Map, ICES website, 2nd February 2011

By taking into account the data under these 3 headings for each fishery and species of fish within it an assessment is made as to the overall health and state of the fishery. The 2010 ICES stock assessments for the Irish Sea fishery are presented in figure 2 below which is taken from the recently published State of the Seas report.

Species	Biomass	Exploitation	Trend	Irish Sea TAC 2010	2010 ICES assessment of state of stock
cod			▲	674t	Harvested unsustainably since the late 1980's. The stock has had reduced reproductive capacity since the mid-1990s. After 7 years of some of the lowest recruitments in the time series, the 2009 year class is estimated to be more abundant and is estimated by surveys to be the largest since 2001
haddock			▲	1,424t	Stock trends indicate an increase in spawning biomass over the time-series but a decrease since 2008. Total mortality appears relatively stable
plaice			▲	1,627t	The spawning biomass trends show an increase in stock size since the mid-1990's to a stable level. Total mortality shows a declining trend since the early 1990's
sole			▼	402t	Spawning biomass has continuously declined since 2001 to low levels and recruitment reached its lowest level in 2008. A large reduction of fishing mortality in recent years reflects a reduction in fishing effort
whiting			▼	157t	The present stock size is extremely low. Landings have seen a declining trend since the early 1980s, reaching lowest levels in the 2000s. Survey results indicate a decline in relative spawning biomass
herring			▲	4,800t	Spawning biomass is close to its highest abundance in the 17 year time-series. The current fishing pattern shows no signs of being detrimental to the stock

Biomass: reproductive capacity impaired; at risk of suffering reduced reproductive capacity; at full reproductive capacity

Exploitation: overfished; at risk of becoming unsustainably fished; sustainably fished

Trend: ▲ state improving; ▶ stable; ▼ state deteriorating

Figure 2: Status of the main commercially exploited fish stocks in the Irish Sea, 2010[18]

Looking at the assessments contained within figure 2 it seems clear, on the basis of the scientific evidence utilised by ICES, that with the exception of haddock, plaice and herring there are serious concerns at the current stock levels of species such as cod, sole and whiting. In terms of the trends for stocks however it is worth noting that ICES believe that the trend for stock of all species, with the notable exceptions of sole and whiting, is improving. It should however be recognised that there will be time lag between stocks recovering and being able to be fished sustainably.

The other major target species for the Northern Irish fishing fleet within the Irish Sea remains nephrops (Dublin Bay Prawns). According to the State of the Seas report *"..the nephrops stock in the western Irish Sea has maintained a stable size composition and sex ratio during the past four decades, suggesting that the stock is harvested sustainably."*[19]

[18] Northern Ireland State of the Seas Report, AFBI and NIEA, January 2011.
[19] Northern Ireland State of the Seas Report, AFBI and NIEA, January 2011, page 41.

Key Questions around the Irish Sea Fishery

- Whilst according to ICES there are signs of improvement in relation to the stocks of key species of fish within the Irish Sea how long is the lag between this improvement and the long term sustainable of these species likely to be? What are local fishermen meant to do in the interim – is simply focusing on prawns ideal?
- What enhancements and improvements can be brought to the collection and analysis of scientific evidence around fish stocks within the Irish Sea at both a local, national and EU level to improve accuracy and in so doing ensure that proposed annual TAC levels are fair?
- In terms of a long term strategy does the EC see fishing within the Irish Sea as sustainable in the long term? If the answer is yes what type and scale of fishery does the Commission envisage being there in 10-15 years?

4. Issues relating to Irish Sea Cod Fishery

As highlighted previously ICES believes that the stocks of cod within the Irish Sea are seriously depleted. The science utilised by ICES supports the assertion that high and ultimately unsustainable levels of fishing of cod within the Irish Sea over a number of decades has reduced the reproductive capacity of cod within the fishery. It should be recognised that recruitment levels within the fishery are finally showing signs of improvement but the reality is that whilst more fish are being recruited the spawning stock remains dangerously low and is likely to be so for some time to come.

Efforts to improve the state of the cod fishery within the Irish Sea have effectively been ongoing since the year 2000. In February 2000 the European Commission implemented a series of measures within the Irish Sea in an effort to return cod stocks to a sustainable level. A key component of these steps was the creation of two close spawning areas in the Eastern and Western Irish Sea during the fish spawning season. Additional restrictions around the type of towed net allowed for use within the Irish Sea were also adopted in November 2000 in an effort to reduce the pressures on cod whilst not diminishing the ability to fish for prawns and flatfish. In spite of these efforts to improve the situation, in 2004 ICES formally advocated that there should be no catches of cod within the Irish Sea due to the fact that the science suggested that stock levels were not improving, particularly in relation to the older and more likely to spawn fish.

Further mechanisms such as the control of fishing effort (trawl duration), the decommissioning of fishing vessels and a 15%-25% total allowable catch (TAC) reduction per year since 2006 have also been instigated by the European Commission and in their entirety these alleviation measures were referred to as the Cod Recovery

Plan (CRP) which was formally set out in European Council Regulation no 423/2004[20]. The core objective of the 2004 CRP was defined as creating a situation whereby for ***"..two consecutive years, the quantity of mature cod has been greater than that decided upon by managers as being within safe biological limits."***The European Commission openly acknowledges that in terms of achieving this primary objective the 2004 CRP failed. This view is also endorsed by research conducted by Kelly, Codling and Rogan[21] relating to the Irish sea who reflected that, ***"..the Irish Sea cod stock at the end of 2004 seemed to be in a state similar to that in 1999, so the recovery plan seems to have had little effect."***

The current Long Term Cod Recovery Plan (CRP) has been in force since the beginning of 2009 having being proposed in European Council Regulation (EC) No 1342/2008[22]. Whilst the focus of the regulation continues to be on enabling cod stocks to recover hence enabling their sustainable exploitation the new regulation has also seen a change from ***"..a biomass-based target to a fishing mortality-based target, which should also be applied to permitted levels of fishing effort."*** In relation to the Irish Sea this new approach has seen a 25% cut in both the Total Allowable Catch and fishing effort for cod in 2009, 2010 and 2011.

Figures published for 2009 and referred to previously in this paper, suggest that the cod recruitment level for 2009 is estimated to be the largest since 2001, indicating that the stocks may finally be improving. In spite of this apparent improvement however the European Commission remains concerned that the reductions in cod mortality as required in the Cod Recovery Plan are not being met in the Irish Sea Fishery. This concern led the European Commissioner for Fisheries, Maria Damanaki, to write to the British and Irish governments in November 2010 to suggest that the Commission may invoke Article 10(2) of the current CRP and implement greater reductions in both fishing efforts and cod TAC for the Irish Sea than the originally proposed 25%[23].

Mrs Damanaki's motivation for this course of action is linked to her assertion that more cod are 'missing' in the Irish Sea than can be explained by the official landing discard statistics, and that this discrepancy is due to unofficial landings and discards, an allegation strongly refuted by both the British and Irish governments. At the December 2010 EU Fisheries Council meeting Commissioner Damanaki initially proposed to cut the fishing effort and TAC allowance for cod in the Irish Sea but this was negotiated back to the initially proposed 25% cut.[24]

A significant outcome from the 2010 EU Fisheries Council has been the commitment by the European Commission to undertake a review of the Cod Recovery Plan, as set

[20] European Council Regulation (EC) No 423/2004, establishing measures for the recovery of cod stocks, 26 February 2004.
[21] Kelly, C. J., Codling, E. A., and Rogan E. 2006. The Irish Sea cod recovery plan: some lessons learned - ICES Journal of Marine Science, 63: 600e610
[22] Council Regulation (EC) No 1342/2008 of 18th December 2008 on establishing a long-term plan for cod stocks and the fisheries exploiting those stocks and repealing Regulation (EC) No 423/2004.
[23] Fisheries: Commission proposes science-based, sustainable fishing opportunities for 2011, European Commission Press Release, 11th November 2010.
[24] Gildernew resists excessive cut in prawn quota, DARD press release, 15th December 2010

out in an EC press release[25] issued after the Fisheries Council meeting which states that,

"The Commission, taking note of the continued poor state of stocks of cod concerned by Council Regulation (EC) 1342/2008 and the lack of evidence of a reduction in fishing mortality rates, will undertake a review of all pertinent factors concerning the fisheries catching the relevant cod stocks. The review will include the measures fixed according to the aforementioned Regulation, their implementation and their effects, including discard reduction measures and measures affecting cod management decided by Member States as well as the application of the fishing effort limits.

The review will cover scientific and control aspects and will require the submission of relevant data by Member States. The Commission will request the advice of STECF concerning the review and will consult stakeholders through the Regional Advisory Councils. The Commission undertakes to convene a conference to discuss the findings of these consultations."

As yet there are no further details with regard to either when or how this review will be conducted, but both the UK and Irish governments are hopeful that such a review will help to accurately establish both the rates of cod mortality and the levels of discard within the Irish Sea.

By way of information a further factor that will require further investigation in relation to Irish Sea cod stocks is the impact of climate change. A recent scientific paper[26] prepared by an Expert Group under the auspices of the International Council for the Exploration of the Sea (ICES) concluded that rising sea temperatures are both having and will continue to have an impact on both the numbers and distribution of co within the North Atlantic area (including the Irish Sea).

To summarise this report there is evidence that the levels of cod recruitment to a fishery bear a strong relation to the mean sea bottom temperature. The paper highlights the fact that **cod are currently not found in waters with mean bottom temperatures of more than 12°C**. Based upon this figure **an increase of only 1-2°C mean bottom sea temperature within the Irish Sea would potentially see the collapse of the cod fishery, with any remaining fish steadily migrating further north to colder waters** (as shown in figures 3 and 4) .

[25] European Commission, press release 13-14th December 2010

[26] Ken F. Drinkwater, Corinna Schrum, Keith M. Brander, editors, Cod and future climate change, ICES Cooperative Research Report, No 305, September 2010.

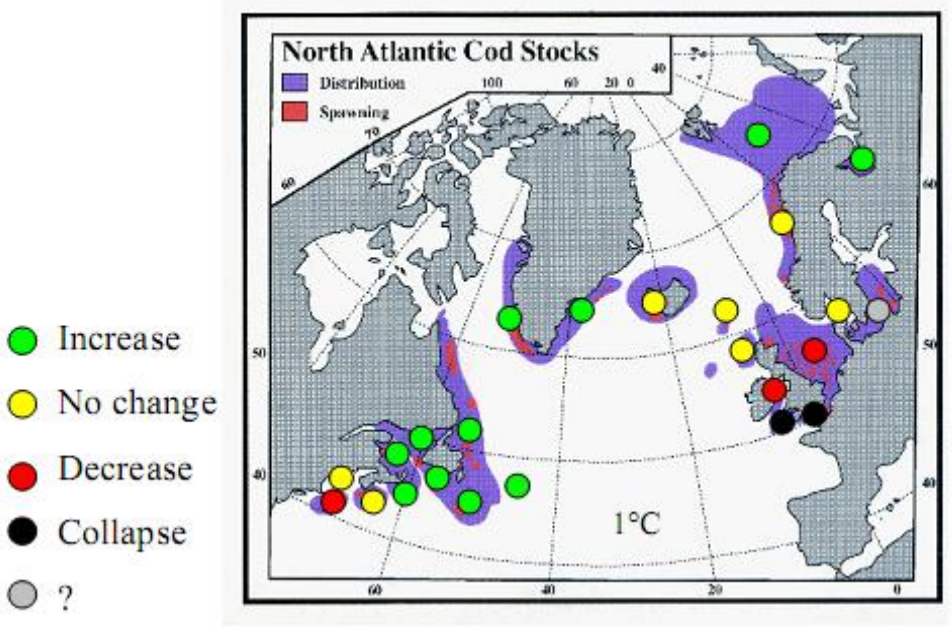

Figure 3: Expected changes in abundance of cod stocks with temperature increase 1°C above current mean sea bottom temperature.

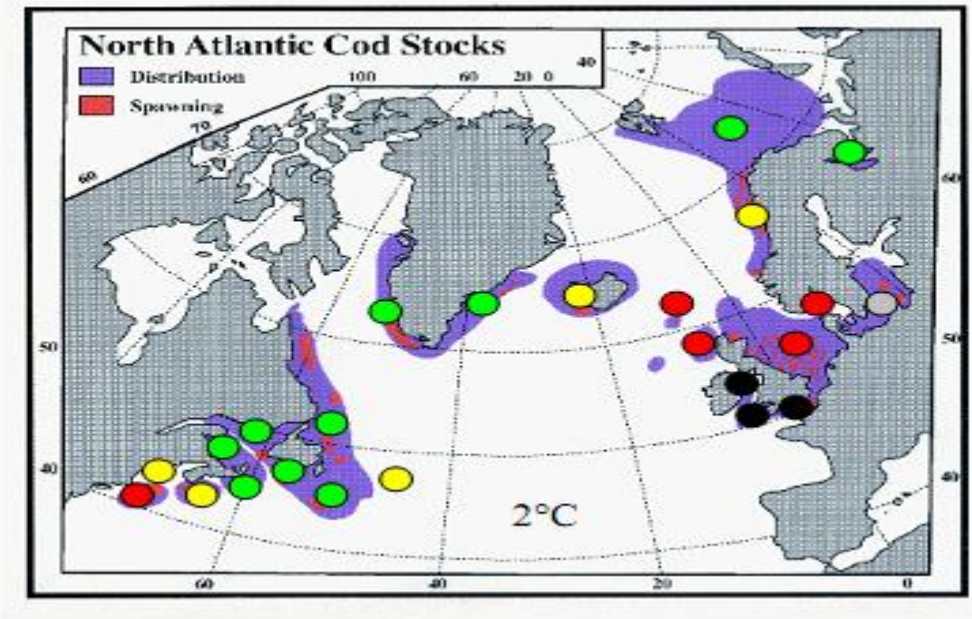

Figure 4: Expected changes in abundance of cod stocks with temperature increase 2°C above current mean sea bottom temperature

Whilst models for climate change impacts and potential temperature increases are to be treated with care there does appear to be a sound rationale for additional specific work to assess the potential impacts of any such changes in the Irish Sea cod stocks.

Key Questions around the Irish Sea Cod Fishery

- Is cod recovery a realistic and achievable objective within the Irish Sea given the failure of the previous CRP and possible challenges posed by warming seas due to climate change?
- What further steps can be taken to improve the data on cod stocks given the perception amongst some stakeholders that current sampling methods are not taking account of apparent changes to the locations and times at which cod within the Irish Sea are spawning?
- Further reductions in both the TAC and days at sea/fishing effort in relation to Irish Sea Cod will potentially make the industry unviable for the whitefish fleet. In these circumstances what alternatives/options are open to these vessels and crews?

5. Issues relating to the Irish Sea Nephrop Fishery

As stated previously within this report the generally held view by many local fishermen and marine scientists alike is that the nephrop fishery within the western Irish Sea is being harvested sustainably. In spite of this assessment however over the last few years ICES has recommended cuts to the overall nephrop TAC within the Irish Sea on the basis that they believe nephrop stocks within Area VII cannot sustain the current levels of exploitation. The major problem here was that ICES and the EU did not recognise the specific area of the western Irish Sea when the nephrop TAC was being set, but rather set their TAC for all of area VII, which covers a wide area with nephrop fisheries in various states of health.

This move to a universal TAC and harvest ratio for all nephrop stock in ICES areas IV, VI, and VII was first proposed in 2009 despite the opposition of fishermen and marine scientists in both Northern Ireland and the Republic of Ireland. Such a move was seen by local fishermen as unduly penalising them, despite the apparently sustainable nature of the western Irish Sea nephrop stock.

To further complicate matters ICES and the EC now recognise that there is spatial variation within Area VII and other nephrop fisheries, and this position was put forward in a 'non paper' published by the EC on the 30TH June 2010 entitled *"Spatially Structured management of Nephrops in Zone VII*". In simple terms the proposals which the EC wish to bring forward would see the creation of 7 smaller Functional Units within area VII each of which would have their own nephrop TAC. At first glance the advocation and creation of a Functional Unit (sub regional) approach to the setting of TAC's for nephrops appears to make sense but there are a number of potential problems associated with this approach.

Firstly the data on which the TAC for each Functional Unit area is set becomes very important. As part of its proposals the EC plans to use data for period of 1998-2008 to

establish both the baseline situation and the basis for future catches. In the case of the western Irish Sea local fishermen are opposed to this approach as they argue that this reference period is too short, given that the western Irish Sea nephrop fishery has been in operation for over 40 years. DARD is also of the opinion that the proposed reference period is wrong and would prefer to see data being used from 2006-2010, as this would better reflect the most recent fishing patterns and exclude landings prior to the introduction of Buyers and Sellers legislation in 2006 that DARD believes to be inaccurate. In addition there are some concerns that the use of such data would not take account of some landings of nephrop by Scottish vessels and would therefore underestimate the sustainable catch for the fishery, which could potentially reduce the TAC for the fishery.

For many stakeholders, a key fear and suspicion around the Functional Unit model is that it has the very real potential to both restrict movement and thereby reduce flexibility in relation to the exploitation and management of the nephrop fishery within the western Irish Sea. The present largely self regulated system has operated for over 35 years with boats moving from areas which are not producing to areas that are. It is debatable whether an additional level of bureaucracy and regulation would enable this approach to continue and as such could jeopardise both the viability of the stock and the fleet within the western Irish Sea.

At present it is likely that the Commission will return to the proposals for the spatial management of nephrop stock in 2012 because it has made a commitment to do so in the TAC and Quota regulation.

Key Questions around the Irish Sea Nephrop Fishery

- Given that the nephrop fishery in the western Irish Sea seems to have been operating on a sustainable and largely self regulating footing for many years why is there a need for further centralised regulation and bureaucratic burden that may actually lead to the decline of the fishery and the fleet it supports?
- If the Functional Unit approach is adopted for the management of the nephrop fishery in the western Irish Sea what provisions would be put in place to ensure that the knowledge and experience of local fishermen is taken into account when setting any proposed quota and TAC levels?
- If the Functional Unit approach is adopted what reference period will be used by the Commission to assess the quota and TAC for nephrop and how appropriate/relevant will this be to the nephrop fishery in the western Irish Sea?

6. Issues relating to Fish Discards in the Irish Sea.

Discards are those parts of a catch that are returned to the sea. The reasons for fish being discarded vary but in general terms the two major factors leading to fish being discarded are

- **Market conditions**-fish are discarded because there is either no or a low market value for them or because they have been mechanically damaged by the fishing action greatly reducing their value. In each of these instances it makes no commercial sense for the operator to retain the catch.
- **Management regulations-** these 'regulatory discards' can occur as a result of regulations which relate to the Minimum Landing Size (MLS) meaning that fish below a certain size cannot be landed or due to quota restrictions which restrict the amounts of a particular fish species that can be landed.

To further complicate matters discards can be counted in different ways, with some definitions applying the classification to only commercial species, all fish species, all animal species including invertebrates and all species including plant life.

In addition discard rates can also be described in terms of numbers of animals or their weight.

The level of discards can also vary widely depending on the fishery, species of fish being targeted and the fishing gear being employed.

The Food and Agriculture Organization (FAO) of the United Nations estimates the world annual weighted discard rate, meaning the proportion of the overall catch discarded, at 8%[27]. Based upon data collected between 1992 and 2001 this would mean that annual world fish discards are estimated to be 7.3 million tonnes.

With specific regard to the Irish Sea **95% of the Northern Irish Fishing fleet effort is focussed on catching nephrops** (also known as Dublin Bay Prawns). As a result of this focus the local fleet discards very few marketable fish. Based upon 2009 figures obtained from DARD (as set out in table 5 below) the **total tonnage of discarded fish by the Northern Ireland nephrop fleet was 906 tonnes** within the Irish Sea which was broken down as follows:

- Cod – 10 tonnes;
- Haddock – 268 tonnes; and
- Whiting – 628 tonnes.

Of these fish which are discarded by the nephrops fishing fleet the majority are as a result of the fish being below the minimum landing size (MLS), effectively meaning that they are too small to be legally landed or sold.

[27] reduction of bycatch and discards, Fisheries and Aquaculture Department, Food and Agriculture Organization of the United Nations, website, 7th February 2011.

In terms of discard rates (ie fish discarded out of total catch) the following table prepared by AFBI[28] highlights the situation pertaining to Irish Sea discards for the years 2008 and 2009 by the nephrop fishing fleet. These figures are estimated, but based on a certain number of observations and then grossed up to fleet level and as such are considered as robust. The data contained in table 6 is specific to trawlers employing nets with mesh sizes between 70-99mm commonly referred to as TR2 which are commonly employed by boats targeting nephrops. Data relating to TR1 gear mesh, meaning nets of greater than 100mm, is not included due to the small number of boats within the Northern Irish fleet employing this net size in the Irish Sea which severely limits the opportunity for effective sampling.

Species	Sampling programme	2008 discard rate	2008 prop discard> MLS	2009 discard rate	2009 prop discard>MLS
Cod	Observer	0.02 (2%)	0.18(18%)	0.05(5%)	0
	Self sampling	0.004(0.4%)	0	0.02(2%)	0
Haddock	Observer	0.33(33%)	0.02(2%)	0.72(72%)	0.10(10%)
	Self sampling	0.30(30%)	0.03(3%)	0.76(76%)	0.02(2%)
Whiting	Observer	0.99(99%)	0.03(3%)	0.99(99%)	0.01(1%)
	Self sampling	0.99(99%)	0.01(1%)	1.0(100%)	0.04(4%)

Table 6: Discard information for cod, haddock and whiting for trawlers using 70-99mm mesh (TR2) in the Irish Sea, 2008-2009[29].

It is clear from these figures that the levels of cod discard in the Irish Sea by the nephrops fleet are very low. By comparison the levels of haddock and whiting being discarded are high ranging from 30% to 76% for haddock and from 99% to 100% for whiting. Interestingly the figures for haddock and whiting also reveal that the proportion of discarded fish over the minimum landing size (MLS) is low ranging from 2% to 10% for haddock, and from 1% to 4% for whiting. This effectively means that those haddock and whiting which are being caught and discarded are predominantly juvenile fish with next to no market value, due to them being below the minimum landing size (MLS). The discard of so many juvenile fish is also undoubtedly problematic in terms of the long term health of stocks given the obvious lack of recruitment into these stocks.

In highlighting the issue of discards for certain species within the Irish Sea attention also needs to be paid to the good work being done by both local fishermen and AFBI in terms of addressing and further reducing the levels of discard. Over the last few years for example the Anglo North Irish Fish Producers' Organisation (ANIFPO) has been experimenting with different net mesh sizes to reduce the number of cod, haddock and whiting discarded by vessels pursuing nephrops[30]. Fishermen have also been trained to self sample their catches and independent observers were employed to go to sea with the trawlers to monitor catches and discards – all in an effort to develop more

[28] Unpublished data prepared by PJ Schon, Senior Scientific Officer, AFBI Marine Science and Aquatic Ecosystems Division. This data was prepared and submitted to the European Commission in December 2010 – forwarded to Assembly Researcher by DARD staff on 1st February 2011.

[29] ibid

[30] Fishermen Vindicated by Latest Evidence, New Net December 2010, Anglo North Irish Fish Producers' Organisation (ANIFPO) website, 7th February 2010.

accurate information on both the state of the overall fish stocks and the levels of discard. In relation to the net mesh experiments the adoption of a 120mm square mesh escape panel (SMP) has been found to allow 54% of juvenile haddock and 65% of juvenile whiting to escape from the net with no loss in nephrops catch[31]. At present DARD is currently seeking an amendment to the EU Technical Conservation Regulations that would enable the specification of this net, which as has been stated could potentially more than halve the discards of juvenile haddock and whiting in nephrops trawls.

At a wider EU level there continues to be a recognition of the need to do more to address the issue of discards. The EU Fisheries Council, in a press release post its December 2010 meeting stated that:

'The Commission and the Council recognise that discarding fish is a waste of natural resources and is a serious problem in global and European fisheries. Widespread discarding damages marine ecosystems and the financial viability of fishing businesses and is ethically undesirable.

The Commission and the Council are committed to reducing discards now and under a reformed Common Fisheries Policy. They welcome action by and will work closely with Member States and others to tackle this problem, including trials of alternative management systems, fully documented fisheries or management by effort. The Commission and the Council are keen to see the results of initiatives such as catch quota management in order to have an assessment by STECF (Scientific, Technical and Economic Committee for Fisheries) *on its efficiency to reduce discards and overall mortality of fish.'*[32]

Key Questions around Fish Discards in the Irish Sea

- Given the high levels of haddock and whiting discards associated with nephrop fishing within the western Irish Sea what practical support can be given to continuing efforts by fish producer organisations to enable them to develop more efficient fishing gear and techniques which will reduce discards?
- What assistance can be given to DARD's efforts to amend the EU Technical Conservation Regulations which would enable the specification of the experimental fishing gear developed by ANIFPO and AFBI, which has been shown to have the potential to halve the discards of juvenile haddock and whiting in nephrop trawls?
- Given the successful work being done in relation to discards reduction in the Irish Sea by ANIFPO and AFBI how can the lessons learned through this work be both disseminated and built upon within the Irish Sea and other fisheries across the EU?

[31] Briggs, R.P, A novel escape panel for trawl nets used in the Irish Sea Nephrops fishery, Fisheries Research Journal 105 (2010) 118–124

[32] European Commission, press release 13-14th December 2010