What a Celtic Sea fisheries management plan might look like

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1. Background:

This is a discussion document for NWWRAC what an "Integrated Fisheries Management Plan for mixed demersal fisheries in the Celtic Sea" might look like. Such a plan should not be the product of scientific stakeholders but requires the industry and environmental stakeholders to take ownership and develop it in consultation with the managers and policy makers. The fisheries landscape in Europe is changing very rapidly. Policy is evolving towards broader and longer term objectives. The number and complexity of management regulations nationally and internationally are also increasing. There are many threats to future sustainability of the fishing industry in the Celtic Sea. The NWWRAC appears to be trapped in cycle of "reactive advice" whereby it mainly appears to be responding to top down management measures rather than strategically developing management frameworks that satisfy broad policy objectives and stakeholder objectives simultaneously.

Recently the EC services have put forward a non-paper entitled "Effort management in Zone VIIfg: An ecosystem approach". The paper essentially suggests an effort cap (in KWdays) at 2007 levels *0.9 for trawl and seine gears. There are no clear biological and economic objectives attached to this management action although the non-paper does identify some "deleterious effects" of effort increases. Whilst the measure suggested is simple in a mixed fisheries context it is likely to have some perverse consequences and even more deleterious effects. Simple command-and-control policies will not work in complex, multi-jurisdictional, mixed fisheries (Net Benefits).

In developing a management plan NWWRAC must ensure that is fit for purpose guided by the following considerations (amongst others):

- Where are we now in terms of stocks and metiers?
- What are the key long term sustainability issues in Celtic Sea mixed demersal fisheries?
- Where do we want be?
- How do we get there as effectively as possible?
- Which management tools are going to be the most effective?
- How long will it take us to get there?
- What needs to change?
- How do we audit progress and develop the plan?

There is quite a lot of data available from a variety of sources on fisheries resources in the Celtic Sea. Utilisation of this data to inform a management plan could always be improved. The current scientific advice and recent effort trends has been summarised in the last NWWRAC Celtic Sea Focus Group meeting. The stock situation in the Celtic Sea is not optimal but many stocks are not as seriously depleted as in adjacent fishing areas e.g. VI and VIIa and effort has been reducing in recent years. The current scientific assessments and advices are drafted in a way that fulfils the needs of the current management framework (i.e. the annual TAC machine). There are many other species that are important components of the catches and ecosystem in the Celtic Sea that do not have annual assessments but could and should be integrated into the plan. It will also be critical to consider the economic and social data within the plan.

The following except from the Net Benefits report is highly applicable to the situation Celtic Sea fisheries particularly if cod is one of the key management drivers: "*this fishery must be managed in a way that acknowledges that there will always be high uncertainty over the level and mixture of stocks in any particular year, and application of the precautionary approach must be coupled with adaptive management to ensure adequate economic predictability.*
Methods of risk management include: moving to effort-based management; using in year data from fishers to update stock estimates; and adopting an adaptive fisheries management approach which would allow a regular process for the reassessment of hard to measure stocks throughout the year."

2. Draft Scope of the plan

The plan establishes the framework for the management of the Mixed demersal Fisheries in the Celtic Sea. The Plan sets out the objectives of the Plan, the measures by which those objectives are to be attained, and performance criteria against which the measures taken may be assessed. The plan is to be prepared in consultation with participants in the fishery and other stakeholders. The draft plan should be made available for public comment. To be effective the Management plans must be legislative documents.

3. Examples of Existing Multi-species and or Multi-fishery Management Plans

The FAO handbook for fisheries managers sets out in chapter nine the design and implementation of fisheries management plans. There are many examples of operational or developing Multi-species and or Multi-fishery Management Plans a around the world. A review of this could be carried out to identify the necessary elements that would be most applicable to a Celtic Sea Plan. Here are a few examples from a quick internet search.

US	Portal to Fishery Management Plans (FMPs)
Pacific US	Gulf of Alaska (GOA) Groundfish Fishery Management Plan
Atlantic NW Canada	GROUNDFISH INTEGRATED FISHERIES MANAGEMENT PLAN SCOTIA-FUNDY FISHERIES MARITIMES REGION
New Zealand	Draft North Island West Coast Finfish Fisheries Plan
Australia	Northern Prawn Fishery
	Western Trawl Fisheries Statement of Management Arrangements

4. Example Table of contents
For now modelled on the Gulf of Alaska (GOA) Groundfish Fishery Management Plan

5. Executive Summary
ES.1 Management Policy
ES.2 Summary of Management Measures
ES.3 Organization of the FMP

Chapter 1 Introduction

Chapter 2 Policy Context and Management Objectives
2.1 CFP, MSFD, Biodiversity etc.
2.2 Management Approach for the Celtic Sea Demersal Fisheries
2.2.1 Management Objectives (from GOA but no a bad start for the Celtic Sea)

Prevent Overfishing:

1. Adopt conservative harvest levels for multi-species and single species fisheries and specify optimum yield.
2. Continue to use the existing optimum yield cap for the Celtic Sea Demersl fisheries.
3. Provide for adaptive management by continuing to specify optimum yield as a range.
4. Provide for periodic reviews of the adequacy of *Fmsy* target ranges and adopt improvements, as appropriate.
5. Continue to improve the management of species through species categories.

Promote Sustainable Fisheries and Communities:

6. Promote conservation while providing for optimum yield in terms of the greatest overall benefit to the nations with particular reference to food production, and sustainable opportunities for recreational, subsistence, and commercial fishing participants and fishing communities.
7. Promote management measures that, while meeting conservation objectives are also designed to avoid significant disruption of existing social and economic structures.
8. Promote fair and equitable allocation of identified available resources in a manner such that no particular sector, group or entity acquires an excessive share of the privileges.
9. Promote increased safety at sea.

Preserve Food Web:

10. Develop indices of ecosystem health as targets for management.
11. Improve the procedure to adjust acceptable biological catch levels as necessary to account for uncertainty and ecosystem factors.
12. Continue to protect the integrity of the food web through limits on harvest of forage species.
13. Incorporate ecosystem-based considerations into fishery management decisions, as appropriate.

Manage Incidental Catch and Reduce Bycatch and Waste:

14. Develop an incidental catch and bycatch management program through Results Based Management (RBM).
15. Develop incentive programs for bycatch reduction including the development of mechanisms to facilitate the formation of bycatch pools, vessel bycatch allowances, or other bycatch incentive systems.
16. Encourage research programs to evaluate current population estimates for non-target species with a view to setting appropriate bycatch limits, as information becomes available.

17. Reduce discards by developing management measures that encourage the use of gear and fishing techniques that reduce bycatch which includes economic discards.
18. Manage incidental catch and bycatch through seasonal distribution of total allowable catch and geographical gear restrictions.
19. Account for bycatch mortality in total allowable catch accounting and improve the accuracy of mortality assessments for target, prohibited species catch, and on commercial species.
20. Control the bycatch of prohibited species through prohibited species catch limits or other appropriate measures.
21. Reduce waste to biologically and socially acceptable levels.

Avoid Impacts to Seabirds and Marine Mammals:
Reduce and Avoid Impacts to Habitat:

26. Instigate habitat protection measures for sensitive species.
27. Identify and designate essential fish habitat and habitat areas
28. Develop a Marine Protected Area an international policy
29. Encourage development of a research program to identify regional baseline habitat information and mapping, subject to funding and staff availability.
30. Develop goals, objectives and criteria to evaluate the efficacy and suitable design of marine protected areas and no-take marine reserves as tools to maintain abundance, diversity, and productivity. Implement marine protected areas if and where appropriate.

Promote Equitable and Efficient Use of Fishery Resources:

31. Provide economic and community stability to harvesting and processing sectors through fair allocation of fishery resources.
32. Maintain the licence limitation program, modified as necessary, and further decrease excess fishing capacity and overcapitalization by eliminating latent licences and extending programs such as community or rights-based management to some or all groundfish fisheries.
33. Provide for adaptive management by periodically evaluating the effectiveness of rationalization programs and the allocation of access rights based on performance.
34. Develop management measures that, when practicable, consider the efficient use of fishery resources taking into account the interest of harvesters, processors, and communities.

Improve Data Quality, Monitoring and Enforcement:

38. Increase the utility of demersal fishery observer data for the conservation and management of living marine resources.
39. Develop funding mechanisms that achieve equitable costs to the industry for implementation of the Observer Program.
40. Improve community and regional economic impact costs and benefits through increased data reporting requirements.
41. Increase the quality of monitoring and enforcement data through improved technology.
42. Encourage a coordinated, long-term ecosystem monitoring program to collect baseline information and compile existing information from a variety of ongoing research initiatives, subject to funding and staff availability.
43. Cooperate with research institutions such as the North Pacific Research Board in identifying research needs to address pressing fishery issues.
44. Promote enhanced enforceability.

Chapter 3 Conservation and Management Measures

3.1 Areas and Stocks Involved
3.1.1 Management Area VIIfg or VIIbchjk <200m
3.1.2 Stocks

Within area:	Cod, Haddock, Whiting, Plaice, Sole, Nephrops
Transboundary stocks	Anglerfish, Megrim, Hake, ling
Valuable Non quota	Rays, John Dory, Lemon Sole, turbot, brill, bass etc.
Non comm.. By-catch	Dogfish, small pelagics etc.

3.2 Determining Harvest Levels.
3.2.1 Definition of Terms
3.2.2 Maximum Sustainable Yield of the Demersal Complex
3.2.3 Optimum Yield of the Demersal Complex
3.2.4 Overfishing Criteria
3.2.5 Procedures for Setting Total Allowable Catch
3.2.5.1 Framework for Setting Total Allowable Catch
3.2.5.2 Stock Assessment and Fishery Evaluation
3.2.5.3Marine Protected areas
3.2.6 Apportionment of Total Allowable Catch
3.3 Permit and Participation Restrictions
3.4 Gear Restrictions
3.4.1 Authorized Gear
3.4.2 Target Fishery Specific
3.5 Time and Area Restrictions
3.6 Catch Restrictions
3.6.1 Prohibited Species
3.6.2 Prohibited Species Catch Limits
3.6.3 Bycatch Reduction Programs

Chapter 4 Description of Stocks and Fishery.
4.1 Stocks
4.1.1 Description of Demersal Stocks
4.1.2 Status of Stocks
4.1.2.1 By SPECIES
4.2 Habitat
4.2.1 Habitat Types
4.2.3 Habitat Areas of Particular Concern
4.2.4 Conservation and Enhancement Recommendations for Fishing and Nonfishing Threats to Essential Fish Habitat
4.3 Fishing Activities Affecting the Stocks
4.3.1 History of Exploitation
4.3.2 Commercial Fishery
4.3.3 Recreational Fishery
4.4 Economic and Socioeconomic Characteristics of the Fishery
4.5 Fishing Communities
4.6 Ecosystem Characteristics
4.6.1 Ecosystem Trends in the Celtic Sea
4.6.2 Climate-Implicated Change.
4.6.3 Interactions among Climate, Commercial Fishing, and Ecosystem Characteristics

Chapter 5 Relationship to Applicable Law and Other Fisheries
5.1 National Laws
5.2 International Conventions
5.3 Other Fisheries

Chapter 6 References

Final considerations

Intrinsic in the development and successful implementation of a fisheries management plan is the concept of some form of ownership rights being conferred on participants in the fishery in my view. Currently there is no political or institutional support for this in current management framework and legal basis is not clear and probably complicated by the multinational dimension. Clearly, an evolution towards regionalised co-management envisage in the next CFP review. The burden of proof and responsibility may become more and more the domain to the RACs. The consultative engagement is critical to the development of a plan. How this will work will need to be well thought out. Ultimately there will be areas where consensus may be hard to achieve. It is critical that short term issues should not be allowed to derail or cloud long term strategic planning. The same applies to micro-management and national management issues.

Guiding international Principles:

FAO Code of Conduct for Fisheries management: http://www.fao.org/fi/default.asp

"all those engaged in fisheries management should, through an appropriate policy, legal and institutional framework, adopt measures for the long-term conservation and sustainable use of fisheries resources"

7.2 Management objectives

7.2.1 Recognizing that long-term sustainable use of fisheries resources is the overriding objective of conservation and management, States and subregional or regional fisheries management organizations and arrangements should, inter alia, adopt appropriate measures, based on the best scientific evidence available, which are designed to maintain or restore stocks at levels capable of producing maximum sustainable yield, as qualified by relevant environmental and economic factors, including the special requirements of developing countries.

7.2.2 Such measures should provide inter alia that:

a. excess fishing capacity is avoided and exploitation of the stocks remains economically viable;
b. the economic conditions under which fishing industries operate promote responsible fisheries;
c. the interests of fishers, including those engaged in subsistence, small-scale and artisanal fisheries, are taken into account;
d. biodiversity of aquatic habitats and ecosystems is conserved and endangered species are protected;
e. depleted stocks are allowed to recover or, are actively restored;
f. adverse environmental impacts on the resources from human activities are assessed and, where appropriate, corrected; and
g. pollution, waste, discards, catch by lost or abandoned gear, catch of non-target species, both fish and non- fish species, and impacts on associated or dependent species are minimized, through measures including, to the extent practicable, the development and use of selective, environmentally safe and cost-effective fishing gear and techniques.

7.2.3 States should assess the impacts of environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks, and assess the relationship among the populations in the ecosystem.

FAO Code of Conduct for responsible fisheries

"The right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and management of the living aquatic resources."

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