Evaluation of multi-annual plans for cod in Irish Sea, Kattegat, North Sea, and West of Scotland (STECF-11-07)

John Simmonds

STECF Management Plans EWG (Chair)

Overview of report

- The STECF Process
- State of stocks / prognosis
- Main Overall conclusions
- Details and some Identified issues
- Next steps?

Process

- STECF agreed process revision of a plan
- 2 meetings for Evaluation
 - Scoping and setting achievable workload.
 - Report meeting presentation of work draft report
 - finalised report with STECF opinion
- Commission / MS to decide to continue with existing plan or revise aspects
- If revision required then 2 meetings
 - Scoping and setting achievable workload.
 - Report meeting presentation of work draft report
 - Finalised report with STECF opinion
- Observers participate as much as possible but are not responsible for writing the report.

STECF EWG 11-01 and 11-07 Scoping March Copenhagen / Report June Hamburg

- ToR
 - Impact assessment of Bay of Biscay sole / plans for Baltic cod
 - Evaluation of cod in North Sea (In cooperation with ICES),
 Kattegat, Irish Sea and West of Scotland.
 - Provide separate reports for each topic
 - Procedures and reports from STECF groups SGMOS 09-02 and SGMOS 10-01
- STECF Opinion on cod reports 37th plenary July 2011
- Report completed and circulated end of July.

North Sea cod: State of Stock



West of Scotland cod: State of Stock



Irish Sea cod: State of Stock



Kattegat cod: State of Stock



Fmsy by 2015 ?

- For North Sea, Irish Sea and West of Scotland cod stocks, medium term simulations based on the current rate of change per year in F suggest that fishing mortality is unlikely to reach F=Fmsy by 2015.
- Currently it is not possible to evaluate the likely success in terms of F reaching Fmsy by 2015 for Kattegat cod.

Overall conclusions from STECF

- Limitations
 - With the data available, it was not always possible to assess whether any of aspect the plan has caused observed changes which are in line with plan objectives.
 - Instead, we can, in some cases, comment on whether the desired objectives are being achieved, but we cannot say that any observed changes are or are not a result of the plans being implemented.
- Given that the plan has only been in place for two and a half years (09, 10, first half of 2011), it is premature to conclude on the medium term impacts.
 - It is not possible to predict how the plan will develop over the next few years as F and effort constraints intensify and the number of fleets operating under derogations increases.
- Overall STECF concludes that the plan is not delivering reduced F
 - additionally in many areas does not have stakeholders' support.
 - A plan which stakeholders support is more likely to succeed because the stakeholders' actions are needed to contribute to its success.
 - Support of the plan also should also, in theory, lead to their acceptance of responsibility to fulfil their obligations.

Main comments on detailed aspects

Additional Impacts on environment and ecosystem

- Various fleets have opted to use more selective gear (Article 11 or Article 13) or to operate real time closures (Article 13) or to fish outside the distribution area of cod (Article 11).
- Significant reductions in discards of commercial and non-commercial species, associated with Article 11 and Article 13 (technical measures), in some areas (e.g. North Sea).
- Some technical measures have significantly reduced commercial by-catch (e.g. Grids for Nephrops).
- **Reported landings in most areas are in line with the landings limits in the plans**, but scientific data, RAC statements and a Fishermen's Survey all **reported catches well in excess of TAC**, leading to quota-driven discards of fish in some areas, e.g. in West of Scotland.
- The Fishermen's Survey reports apparently 'conflicting' notions:
 - (i) the feeling that cod avoidance is being carried out, and
 - (ii) that discarding is being carried out because too much cod is being caught.
 - As F is still too high this suggests that while cod avoidance is occurring it is currently insufficient.
- **Mortality of some other species** such as haddock and whiting **has declined** to levels consistent with CFP objective in some areas, this maybe partly due to the cod plan.
- Increases in biomass may have been hindered by factors external to the fishery (e.g. seal predation on the West of Scotland).

Changes in fleet effort

- There has been a substantial decline in effort before the introduction of the current cod plan.
 - In all areas Effort has continued to decline but slowly is now levelling out.
 - Otter trawl gears contribute the highest effort amounts, with the relative importance of TR1 and TR2 otter trawl gears varying between areas.
 - Beam trawl (BT2) effort is also very significant in the North Sea.
- Due to the definition of the effort baseline, effort reductions were less than F reductions .
- Higher effort than intended has occurred due to differences in the respective methodologies used to calculate effort from the reference years and methods used in the reported consumption of effort within the plan.
- Effort associated with Article 11 is relatively low in all areas.
- Effort associated with Article 13 ranges from 25% to 75% of total deployed effort and 46% to 71% of total cod catch among areas.
- There have been positive contributions under Article 13c which appears to allow a locally tailored response which should provide better governance with measures based directly on catches. Notable effects are:
 - redistribution of effort away from higher abundance in Kattegat;
 - reductions in unwanted by catch and discards in the northern North Sea by TR1 vessels;
 - the use of more selective gears, and cod avoidance through real time closures.
- The verification aspects of Article 13 are too complex.
- The extent of unregulated effort varies between areas. However, in all areas this is currently associated with minimal cod catches.

Changes in capacity & employment

- There have been reductions in fleet capacity;
 - The decision by an owner to remove a vessel from a given fishery, depends on several factors and most of these factors are not influenced by the long term management plans, e.g.:
 - operating costs,
 - offers of decommissioning grants,
 - alternative fishing opportunities
 - and factors relating to the personal circumstances of business owners.
- Therefore this plan are not likely to be key in determining any single decision about the removal of a vessel from the fishery subject to the plan.
- An Economic study based on DCF data and is supported by the Fishermen's the Fishermen's survey reports that the effort limits resulted in more time in port, changes in patterns of fishing activity, problems due to catch composition rules and discarding, and knock-on effects leading crew reduction.

Economic benefit/loss during the period of implementation

- It was not possible to conclude that the plan has had any impact on financial performance of the fleets involved compared to the situation likely to have prevailed in the absence of the plan.
- Analysis of changes in profitability at the level of fleet and vessel has not been possible due to inconsistency of cost data DCR and DCF
- There are indications that revenue per vessel may have increased while total revenues of the whole fleet declined, but it is not possible to attribute these changes to the plan.
- At a fleet and vessel level, reductions in effort may not necessarily result in the same proportion of reduction in revenue.
 - Total Operating Costs at a fleet level have fallen in line with decline in total effort,
 - but have increased at an individual vessel level due to increase in average effort per vessel.
- A meta analysis such the one, carried out on aggregated economic data can mask significant changes at an individual business level.
 - To understand the implications at an individual business level more detailed analysis would be required.
 - But due to confidentiality issues, this type of study would have to be sponsored specifically by MS.

Effects on the broader industry and general economic conclusions

• Effects on the broader industry

 Although we cannot conclude that the plan has had any effect on vessel numbers or fleet capacity applied to the fishery, reductions have occurred and these will have had knock-on effects upstream and downstream in the economy.

• Economic Indicators (DCF data)

- The economic indicators were only sufficient to describe changes over the period of analysis. It has not been possible to attribute any of those observed changes in the indicators to the multi-annual plan and hence they are not sufficient, on their own, to enable a robust evaluation.
- The short run economic impacts of the multi-annual plan are not clear, in part because data at the required level of disaggregation is not available,
- Outcomes depend on the balance of benefits resulting from increased cod TAC in the longer run and reductions in total (fleet level) costs resulting from reduced effort.
- The impact on long run economic sustainability will also depend on the stock effects of the plan (higher catch per unit of effort) which at this stage are unknown.
- Specific indicators or data that would be useful for a future evaluation of multi-annual plans
 - Fully documented effort allocation and deployment, landings and catch of cod for each vessel
 - Economic data linked to vessels and specification of any derogation Article under which the vessel is operating.

Aspects to consider for the future : 1: control measures

- Several of the Articles in the plan are ambiguous or difficult to apply.
 - Clear and unambiguous phrasing of the elements of regulations will make compliance more transparent and potentially more reliable.
- Reliance on the combination of TACs (enforced as landings) and effort restrictions as control instruments is a core weakness in the plan. Currently they have been found to be inadequate in controlling cod removals. Consideration should be given to use of cod catches (landings plus discards), as the main metric for allocating catch opportunities.
- Fishing mortality can not be expected always to follow proportionally trends in fishing effort.

2: Giving catch advice

- The HCR in the plan is overly reliant on annual estimates of F which are either absent, inaccurate or imprecise.
 - Consideration should be given to multiannual metrics for informing decisions. The lack
 of analytical assessments in WoS, Irish Sea and Kattegat preclude the application of the
 HCR. Therefore different metrics are needed for the application of the HCR.
- Short term forecasts for North Sea show bias
 - Assessments have been quite good but estimating SSB and F in short term forecasts is difficult, by comparison removals estimates were less biased.
 - The current practice of assuming the plan is working for the intermediate year, should cease;
 - There may be benefit in using alternative methods of setting TACs (catches) to see if they are more robust for predicting F for specified removals.
- The cod LTMPs were designed without consideration of the fishing opportunities for other species.
 - Mixed fisheries simulations give an indication of the potential for disparity between fishing opportunities
 - Thus potential implementation error in North Sea cod advice.
 - Actual F may be higher than stipulated in the LTMP if there is continued fishing for other species with higher Fs (TACs)
 - The plan would benefit from linking to plans for Nephrops, haddock, whiting, saithe, sole and plaice in the North Sea.

3 Exemptions under the current plan

- Exemptions through Article 11 require low cod catches.
 - These exemptions should only be approved when the fishing activity is deployed outside the distribution area of cod, or if deployed within the cod distribution area, when the used fishing gear is designed and confirmed to minimize cod catches.
- Basing monitoring on percentage of cod in the total catch (as in Articles 11 and 13.2b) is flawed,
 - because even when percentages of cod in the catch are low, these catches can still contribute significantly to overall cod mortality if overall catch or effort is high or when abundance is low.
 - Cod by-catch ceilings expressed as percentages of total catch also have a perverse incentive to maintain or increase catches of other species.
 - A system based on proportion of total expected cod outtake from the whole fishery would be more appropriate, and likely no more difficult to monitor.
- Verification of Article 13 exemption, based on expected effects on F, cannot be carried out in most cases.
 - By specifying Article 13 exemption on the basis of total catch (landings and discards) of cod it is expected to be easier for fishermen to understand, implement, and verify their compliance with the conditions of the derogation.

Next steps ?

- Scoping meeting to frame work
- STECF EWG 11-15 28 Nov 2 Dec Edinburgh Scotland
 - Multispecies plan Baltic
 - Amendments to KAT NS IS and WoS cod
 - Focus on main aspects that could be revised
 - Identify aspects to change here and scoping meeting
 - Information from this meeting to help
 - Identify aspects to be considered
 - Extent to which catch quotas (fully documented fisheries) are of interest
 - How to incentivise FDF .
 - Setting TACs (catches) for stocks without short term forecasts
 - Averages over years
 - Harvest rates based on assessment SSB