

# Results based management

**NS RAC Demersal WG special meeting  
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# Fishing is adaptation

- **To:**
  - **Input - Production costs and practicalities**
  - **Output - Markets for raw material**
  - **Regulatory environment – primarily addressing societal conservation concerns**
  - **Policy and cultural environment – norms, technological tradition and social control**
- **Adaptations are rational and innovative responses to balance profitability, practicality and legality**



# Adaptations to management instruments

- **Most instruments intend to limit negative impacts by capping catches or by reducing by-catches of non-target organisms or juvenile fish**
- **But in most cases there is also some short term economic loss**
- **Adaptations will therefore be developed which reduces this loss**
- **In this process the intended positive effects on non-target organisms and juveniles may be reduced**



# The micromanagement spiral

- **A conservation objective is identified**
- **Technical measures to achieve this are put in place**
- **The industry experiences losses of catch value or fishing opportunities**
- **Industry makes technological adaptations which nullifies negative economic effects of regulation**
- **These adaptations nullify conservation effect in the process**
- **Conservation outcomes not achieved**



Closely linked to a (largely) top-down, paternalistic management framework

# Micromanagement prose – additional technical measures to protect cod

20.10.2001 EN Official Journal of the European Communities L 277/13

COMMISSION REGULATION (EC) No 2056/2001  
of 19 October 2001

establishing additional technical measures for the recovery of the stocks of cod in the North Sea  
and to the west of Scotland

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Regulation (EC) No 850/98 of 30 March 1998 for the conservation of fishery resources through technical measures for the protection of juveniles of marine organisms <sup>(1)</sup>, as last modified by Regulation (EC) No 973/2001 <sup>(2)</sup>, and in particular Article 45(1) thereof,

Whereas

(1) In November 2000, the International Council for the Exploration of the Sea indicated that the stock of cod which inhabits the North Sea (ICES Sub-area IV and ICES Division IIa) and the stock of cod which inhabits waters to the west of Scotland (ICES Sub-area VI and ICES Division Vb) are at serious risk of collapse.

(2) At the Council meeting of 14 and 15 December 2000, the Commission and the Council noted the urgent requirement to establish a recovery plan for these stocks of cod.

(3) The immediate requirement is to reduce catches of juvenile cod by establishing:

- a general increase in the mesh size of towed nets and static nets used to catch cod to which end it is necessary to derogate from conditions regarding mesh sizes of towed gears laid down in Annexes I and VI of Regulation (EC) No 850/98, and
- additional conditions to ensure that capture of juvenile cod by towed nets of mesh size less than 120 mm is reduced.

(4) Many of the measures to be envisaged in the North Sea are also relevant in the context of cod recovery in waters to the west of Scotland and should therefore also be taken in that geographical area while some measures require to be specific to the west of Scotland.

(5) It is necessary to regulate on these matters immediately, in anticipation of a revision of Regulation (EC) No 850/98, so that the fishing industry will be provided with sufficient time to amend their fishing gears.

(6) The measures provided for in this Regulation are in accordance with the opinion of the Management Committee for Fisheries and Aquaculture,

HAS ADOPTED THIS REGULATION:

Article 1

1. This Regulation shall apply to fishing vessels operating within Community waters of ICES Sub-areas IV and VI and ICES Divisions IIa and Vb.

2. It shall not apply to fishing vessels operating within that part of ICES Sub-area VI enclosed by straight lines sequentially joining the following geographical coordinates:

56° 00' N 07° 30' W

56° 00' N 04° 00' W

55° 00' N 04° 00' W

55° 00' N 07° 30' W

56° 00' N 07° 30' W

3. In that area the conditions laid down in Articles 2 and 3 of Council Regulation (EC) No 2549/2000 of 17 November 2000 establishing additional technical measures for the recovery of the stock of cod in the Irish Sea (ICES Division VIIa) <sup>(3)</sup>.

Article 2

For the purposes of this Regulation the following definitions shall apply:

1. 'codend' means a codend *sensu stricto* as defined in the Annex to Commission Regulation (EEC) No 3440/84 <sup>(4)</sup> of 6 December 1984 on the attachment of devices to trawls, Danish seines and similar nets.

2. 'extension piece' means a lengthening piece as defined in the Annex to Regulation (EEC) No 3440/84.

Article 3

For the purposes of this Regulation percentages of catches retained on board shall be calculated in accordance with conditions laid down in Article 5 of Regulation (EC) No 850/98.

<sup>(1)</sup> OJ L 125, 27.4.1998, p. 1.

<sup>(2)</sup> OJ L 137, 19.5.2001, p. 1.

<sup>(3)</sup> OJ L 292, 21.11.2000, p. 5.

<sup>(4)</sup> OJ L 318, 7.12.1984, p. 23.

Council reg 2056/2001

# If you are a trawler it is simple (?)

- With the exception of beam trawls, it is prohibited to deploy any demersal towed net:
- (i) of mesh size range 70 to 89 mm having more than 120 meshes in any circumference of the codend excluding the joinings and selvages;
  - (ii) of mesh size greater than 90 mm having more than 100 meshes in any circumference of the codend excluding the joinings and selvages;
  - (iii) of mesh size range 70 to 99 mm unless the upper half of such a net consists of a panel of netting material attached directly to the headline, extending towards the posterior of the net for at least 15 meshes and constructed of diamond-meshed netting material of which no individual mesh is of mesh size less than 140 mm;
  - (iv) of mesh size range 70 to 99 mm unless a square-meshed panel of mesh size at least 80 mm is included in such a net in compliance with the conditions laid down in paragraphs 2 and 3 of Article 7 of Regulation (EC) No 850/98.

The conditions laid down in paragraphs (iii) and (iv) shall not apply whenever the catch retained on board and taken with a net or nets of mesh size range 80 to 99 mm consist of:

- at least 85 % of queen scallops, or
- at least 40 % of sole and no more than 5 % of cod.



# But if you are a beam trawler -

It is prohibited to carry on board or deploy any beam trawl of mesh size equal to or greater than 80 mm unless the entire upper half of the anterior part of such a net consists of a panel of netting material of which no individual mesh is of mesh size less than 180 mm attached:

- directly to the headline, or
- to no more than three rows of netting material of any mesh size attached directly to the headline.

The panel of netting shall extend towards the posterior of the net for at least the number of meshes determined by:

- (i) dividing the length in metres of the beam of the net by 12;
- (ii) multiplying the result obtained in (i) by 5 400 and
- (iii) dividing the result obtained in (ii) by the mesh size in millimetres of the smallest mesh in the panel and
- (iv) ignoring any decimal or other fractions in the result obtained in (iii).



# Repair guides in legal text:

- 2. 3,5 m for a codend of circumference between 88 and 75 diamond meshes measured in front of the window and;
- 3. 3 m for a codend of circumference of less than 75 diamond meshes measured in front of the window.
- (iii) A back strap shall not encircle the BACOMA exit window. It shall be made of rope not more than 20 mm in diameter and be at least 2 m long.

- (i) Clean the hole.
  
- (ii) Count the meshes to be replaced. Prepare a patch using knotless braided single twine that is the same material, diameter and strength of the net needing to be patched.
  
- (iii) The patch should be no more than two meshes larger in each direction than the cleaned-up hole to provide sufficient netting to overlap the edges of the hole.
  
- (iv) Lay the patch over the hole and lace it to the existing netting using braided twine, as shown in the illustration.
  
- (v) Make sure to lace the crosses of the netting together.
  
- (vi) Continue lacing around the hole so that you have at least two rows of lacing around the patch.
  
- (vii) The patched hole will resemble the above illustration when finished.



Interesting legal prose is matched by  
equally interesting technological  
innovations



# Outcomes of the micromanagement spiral

- **Perverted technologies**
  - **Non-economical technologies and tactics**
  - **Technologies which do not achieve conservation targets**
- **Low legitimacy**
- **Low compliance**
- **Increasingly paternalistic governance - down to repair guides in legal text!**
- **Widening the fisher-science-manager gap**
- **Non-achievement of objectives - ecological, economic, social**
- **Complex and costly policy**

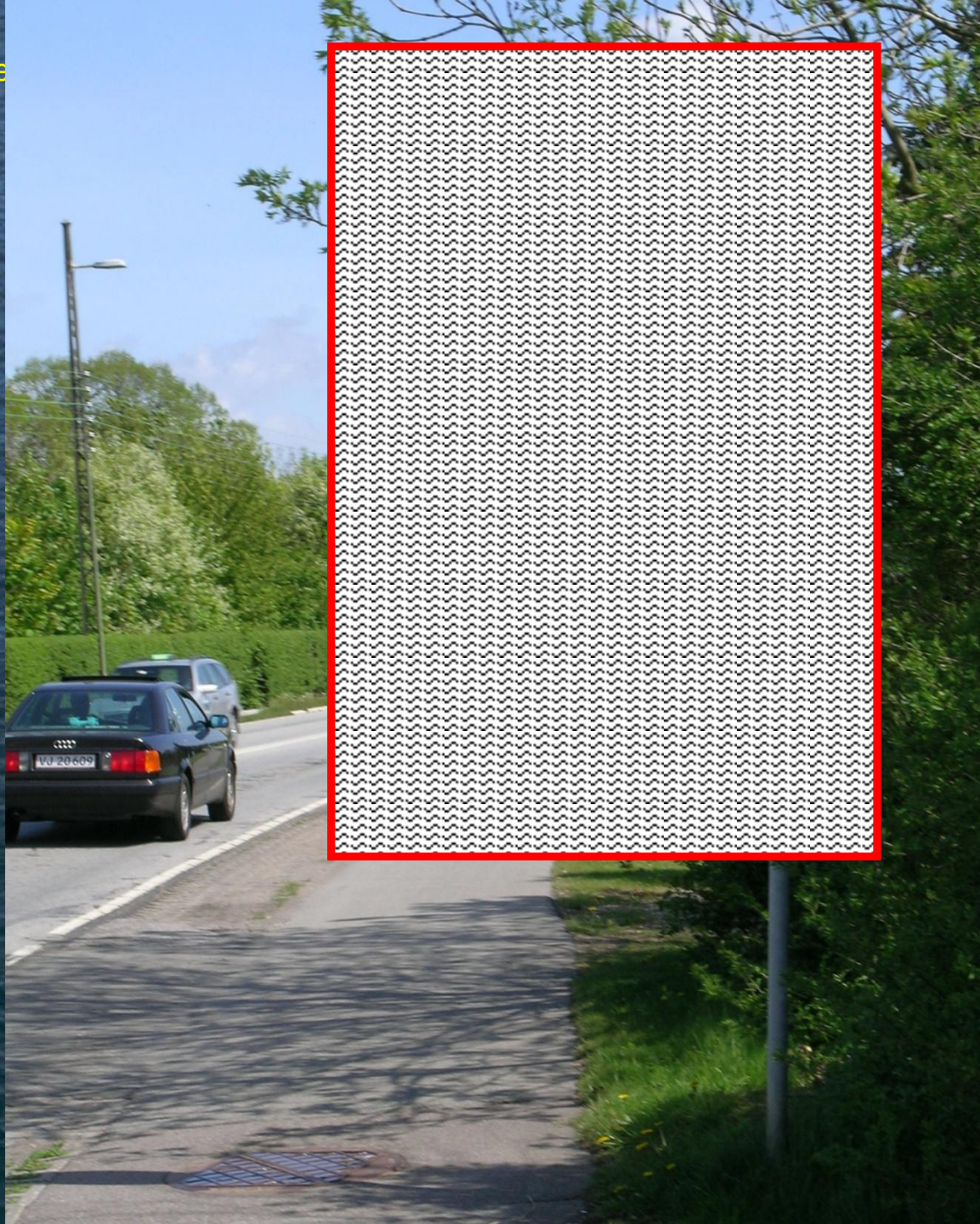


# Whose fault?

- **Everybody is reacting perfectly rationally to the role assigned to them in the fisheries management system**
- **The problem is systemic – everybody is locked into their roles acting rationally in an irrational framework**
- **Rational behaviour within an irrational system leads to overall irrational performance**
- **Solution – change to a system where it is in everybody's interest to take responsibility and do the right thing**
- **To what? Let us look elsewhere....**



If we  
regulated  
traffic like we  
regulate  
fisheries...





.....

**VW abc:**

If 1.8 model press speeder down maximum 5.5 mm

If 2.3 model press speeder down maximum 4.7 mm

If gti model of any of the above subtract .2 mm.

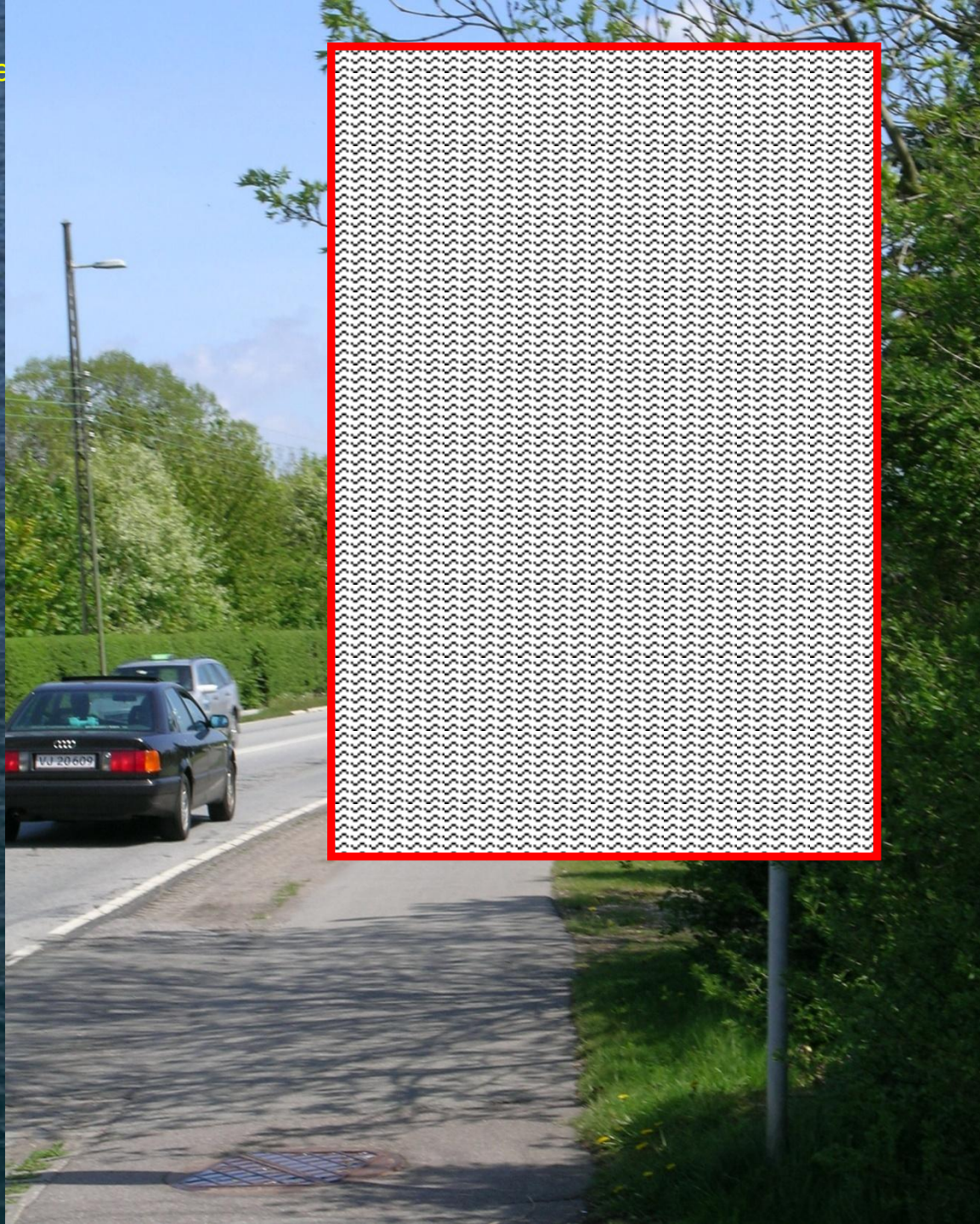
- Add .07 mm pr full year of age prior to 1 Jan 2009.
- Add .5 mm per 50 kg load above 150 kg not counting petrol
- If using winter tyres add .3 mm
- If wind against add .15 mm pr m/s wind against
- If wind from behind subtract .15 mm pr m/s wind from behind
- If wind from an angle subtract or add  $.15 * \cos(v)$  where v is the angle of impact
- At downward slopes subtract .24 mm pr % slope
- At upward slopes add .24 mm pr % slope
- During rain add .7 mm pr mm of water on road surface (max 1.8 mm)

**VW xyz:**

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The solution  
is simple...





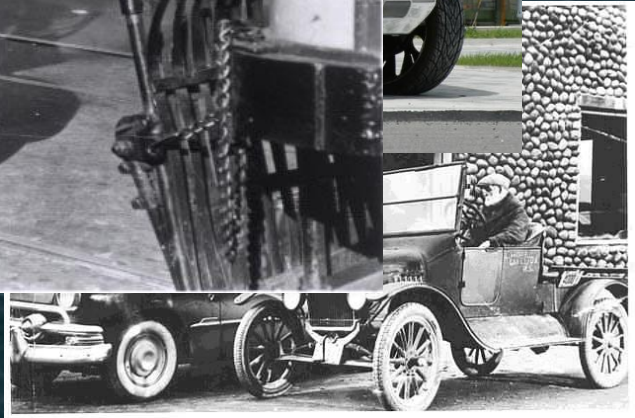
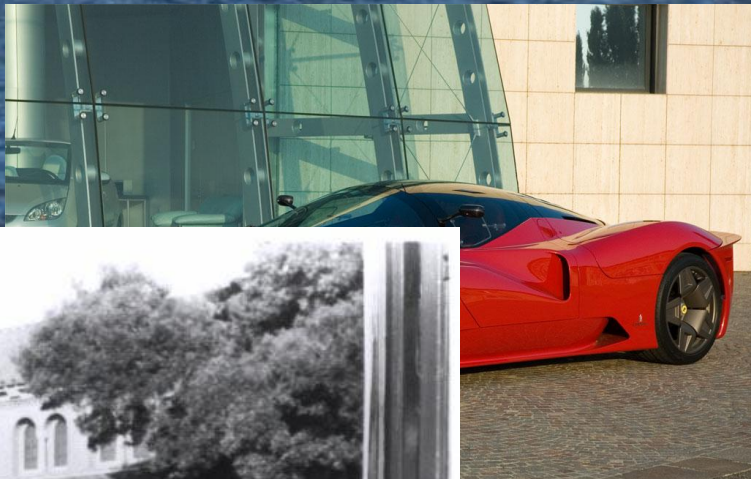
# What is done elsewhere?

- **Traffic legislation**
  - **Drive within speed limits**
  - **Nobody cares how you do that technically – or whether your car can actually run 300 km/h as long as you drive within prescribed speed limits**



# European Commission

DG Maritime Affairs and Fisheries





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# What is done elsewhere?

- **Traffic legislation**
  - Drive within speed limits
  - Nobody cares how you do that technically – or whether your car can actually run 300 km/h as long as you drive within prescribed speed limits
- **Environmental regulation**
  - Industries are given maximum limits on emissions
  - Industries are required to document that emissions are within limits
  - Regulation defines outcomes
  - Regulation does not define means to achieve outcomes
  - Burden of proof to large extent with industry



# Why is fisheries different?

- **Lack of practical means to control outcomes**
- **Lack of understanding of which outcomes can reasonably be expected**
- **Path dependency**
  - **A long history of regulations of gear characteristics and gear use**
  - **Precedence of burden of proof with government rather than industry**
- **We have increasingly better monitoring options**
- **We have considerable knowledge about impacts and mitigation options**
- **Is history binding?**
  - **Policy - New drivers**
  - **Conceptually - We can think out of the box**
  - **Legally - precedence may create legal barriers**



# Results based management

- **Change to specification of acceptable impact rather than acceptable technology**
  - **Maximum catch**
  - **Maximum acceptable by-catch of juveniles, above quota, non-target species**
  - **Maximum acceptable impact on habitat**
  - **Maximum acceptable impact on sensitive species and sensitive habitats**
- **Industry to develop solutions which meet outcome requirements – and are practical, economical**



# Revert burden of proof

- **Data and information is the minimum price to pay to society for being given access to common resources**
- **If society identifies maximum acceptable impact it should be left to industry to document that outcomes are within acceptable impact limits – like what is done in other sectors**



# Break the negative micromanagement spiral and paternalistic management

- **Results based management - Release initiative for technological change to industry to find economic and practical solutions**
- **Reverse burden of proof - Give responsibility to demonstrate outcomes to industry**
- **Basis for extended co-management/self-management where industry takes it's own destiny into it's own hands**

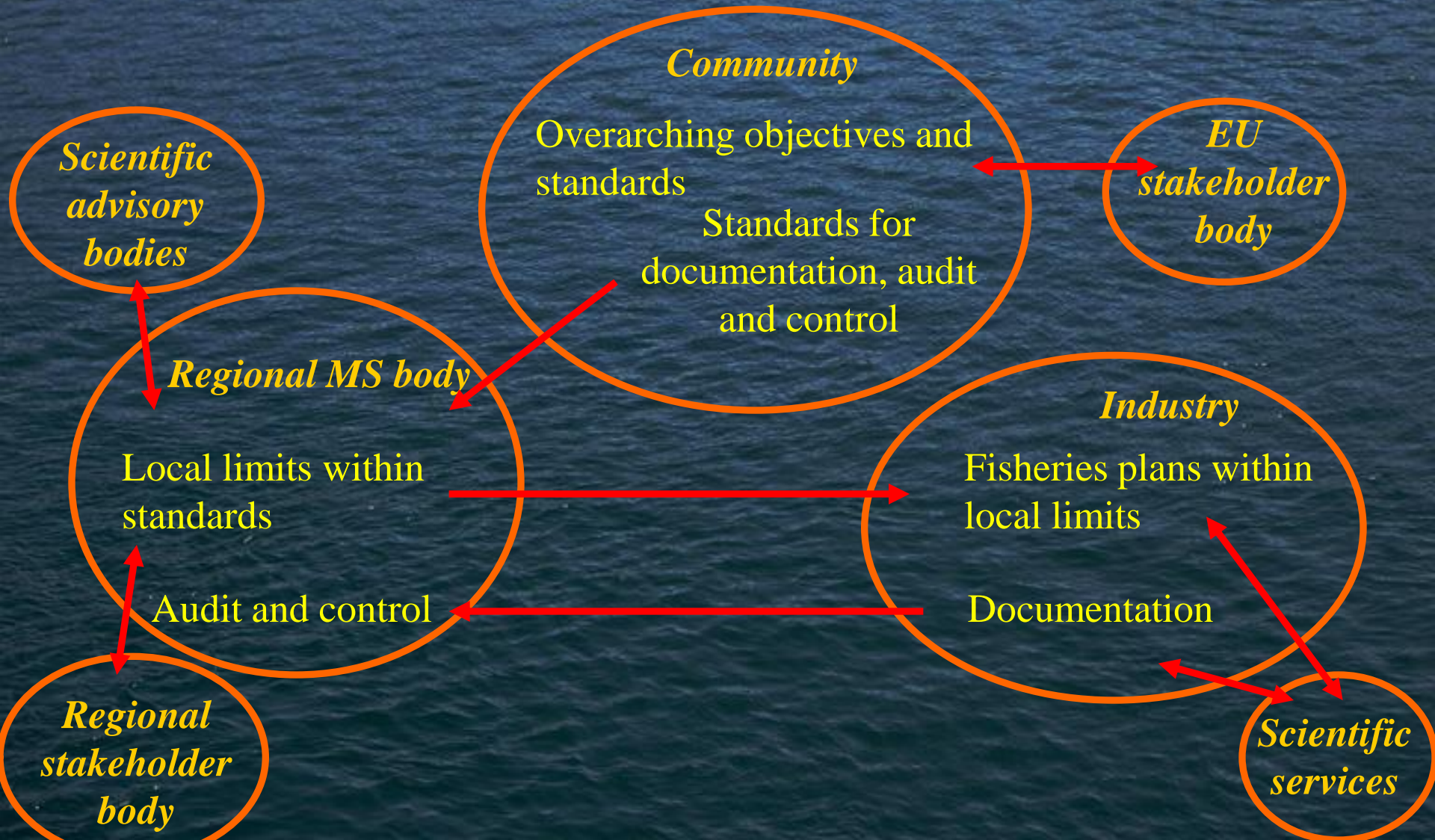


# Can we change? – Can we not change?

- **results based management and reversal of burden of proof goes hand in hand with recent developments and policy directions:**
  - **Ecosystem approach to management requires extensive technological adaptations to mitigate impacts**
  - **Collaborative research has demonstrated large potential to identify options for technological change to meet multiple objectives**
  - **Calls for more inclusive management frameworks**
  - **Calls for extended inclusion of users' knowledge**
  - **Simplification of legislation is a must – politically and logistically**
  - **The Lisbon Treaty will introduce co-decision which means that any changes to central technological measures will take 2 years**
- **What are the alternatives if we want to break the negative micromanagement spiral and its consequences?**



# Results based management w reversed burden of proof



## Some options

- **Large scale fisheries may take responsibility individually or as part of overall industry organisation**
- **Smaller scale industry may enter self-management through POs or similar organisation**
  - **Collective management of quota uptake**
  - **Collective management of quota uptake and other limits to impacts**
- **Documentation of total catch through voluntary monitoring**



+/-

- **Benefits to industry**
  - **Access to rights to fish**
  - **Market access – improved image, certification**
  - **Gaining control of own destiny, dignity and respect**
  
- **Issues**
  - **Relative stability?**
  - **Safeguarding small scale sector? One regime for all?**
  - **Mandatory membership of self-management organisations?**
  - **Can established rights be retracted if vessels choose not to participate?**



**European Commission**  
DG Maritime Affairs and Fisheries

