EUROPEAN PARLIAMENT

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT B

STRUCTURAL AND COHESION POLICIES

Characteristics of multispecific fisheries in the European Union

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The context:

- European fisheries are defined as mixed and multispecific fisheries (**MMF**).
- **Complexities:** many resources, shared by several fleets and Member States.
- Significant **obstacles** to coherent management.
- **Sound scientific support:** on biological and ecological issues, also on technological and socio-economic aspects to back up management decisions.
- **Critical political challenge**: a complex issue involving natural and human aspects.
- The new Common fisheries Policy (**CFP**): special attention to:
  - **Landing obligation (LO)**
  - **Maximum Sustainable Yield** (MSY).

Study objectives:

- Provide **comprehensive qualitative analysis** of the implementation of the landing obligation and MSY
- **Fill in the knowledge gap** and support decision making.
- **Discuss the practical implementation** of the landing obligation and MSY based on representative **case studies**.

The challenge: Landing obligation in MMF

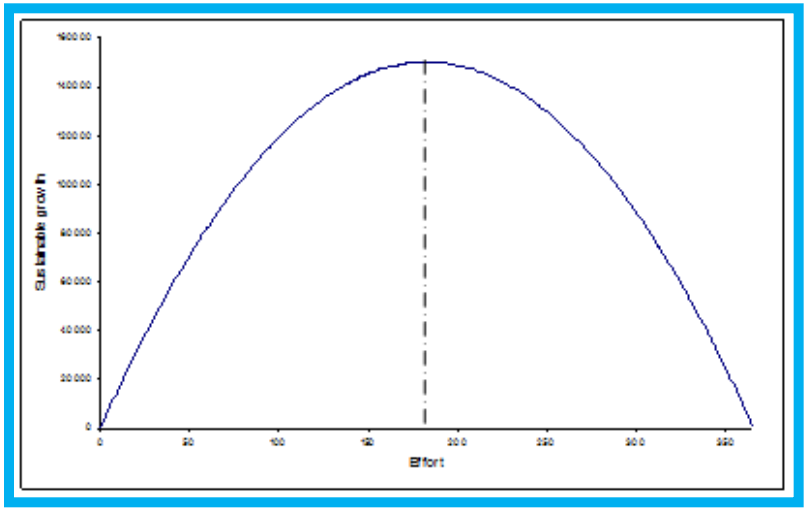
- **Reasons:** regulatory (lack of quota, effort restrictions and high-grading, minimum landing size (MLS) and mesh size regulations); economic & technical.
- **Landing Obligation (LO):**
  - Reduces the waste of by-catch, utilizing all the catch
  - encourages: research on by-catch reduction;
  - behavioral changes (areas and seasons of high by-catch)

- In the Ecosystem Based Fisheries Management (**EBFM**), the whole ecosystem is to be considered.
- For **minimizing impacts**, **more selective fishing** practices have been encouraged .
- However, **concentrated impacts** on a part of the ecosystem could upset the functioning of the ecosystem.

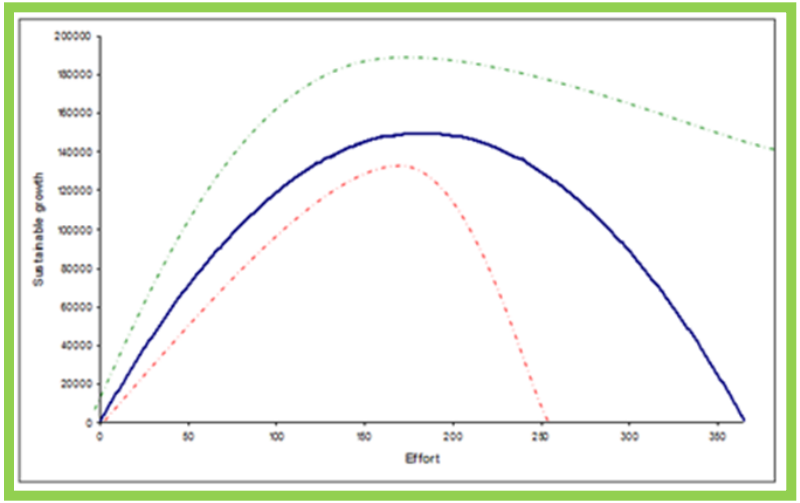
- In MMF, **limit ability** to separately target species.
- Captures **not match** the quota, leading to discarding and misreporting.
- **Reduced quotas** will impact on fishers' profitability.
- **Price differences** between species and size classes add complexity.
- Risk of creating **markets** for illegal fish, encouraging rather than discouraging.

- **Incentives to discard** still there:
  - **to discard** fish that have reached their quota before other species ("choke")
  - if crew is **not compensated** for the extra work of landing all catch.
- **Sustainability goal** must be compatible with **the institutional setting**, to respond to changes in behavior.
- **Caveats in implementation**: reduction of fleet benefits in the short term, managing large biomass on board and at port and enforcement.
- **Monitoring, Control, Surveillance (MSC) (enforcement) and commitment** becomes key aspects to the success/failure of LO.

The challenge: MSY in multispecies fisheries

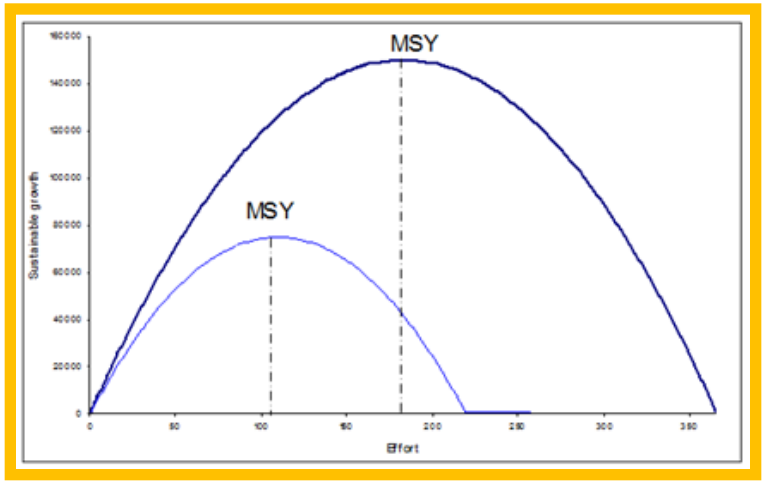


- **MSY:** the largest yield (or catch) taken from a stock over an indefinite period.
- **Exploitation rate** definition is subject to policy choice.
- **Risk** of **overfishing** due to:
  - non-equilibrium conditions
  - lack of effort control.
  - target levels: overshot or poorly estimated.



- **Equilibrium theory:** useful for framing the MSY concept.
- **Unrealistic and unworkable**: very dynamic systems.
- A **not perfect knowledge**: optimistic, average or pessimistic growth, affecting sustainability.
- Alternative models produce **different MSY** and fish stocks reaction to fishing.
- **MSY** is expressed **as a range of values,** from different hypotheses on the true dynamics.

- **Fishing** impacts on many **stocks simultaneously.**
- A **problem to** the MSY **application** principles. At the origin of the LO.
- In MMF, generally, **fish stocks MSY targets** are calculated separately.
- In MMF, not possible to apply different levels of effort to species at same habitat and caught by the same gear.



- In a **two (or more) species fishery**, when catch limit for one sp. is reached but there is still more catch for the other, fishing fleets may decide to continue operating.
- In summary, fixing **single species** quotas for species caught simultaneously may not be adequate

- **Ecological dimension:** MSY require all species be to be exploited below their MSY abundance.
- **Overall level of exploitation**: fixed at the lowest species level with the lowest resilience.
- **Reduce** drastically the **utility of the resource**. Impossibility of implementation of MSY simultaneously.
- In an EBFM, **existing relationships** within all the ecosystem components have to be considered. MSY does not, misleading the advice

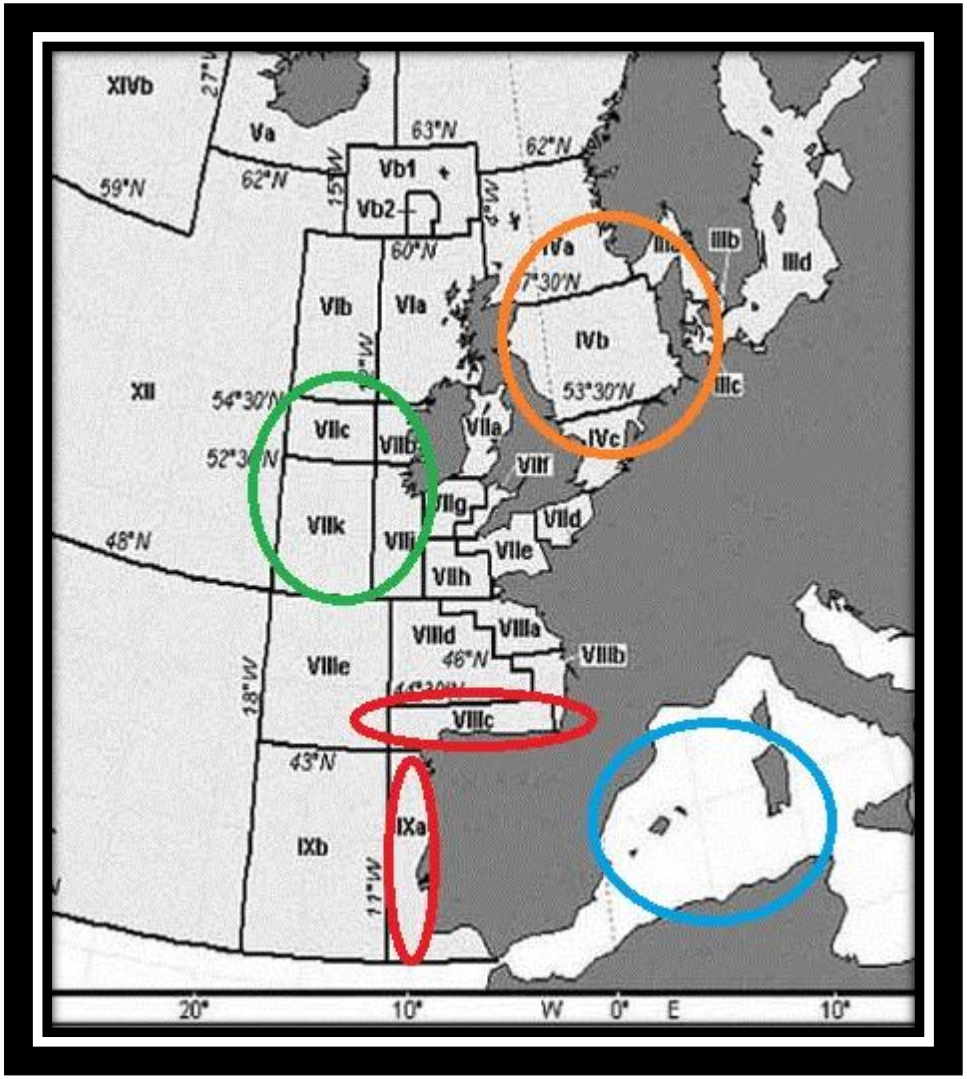
- **Equilibrium:** what would happen to that same ecosystem if exploitation rates are again altered?

- **Somewhere in the middle between single species MSY and EBFM, “Pretty good multiyields” concept (or Total MSY) are found**

Managing under MSY:CPF full coverage

- **MSY** has a **difficult application:** in the new CFP were 3 objectives are to be reconciliated.
- Prof. S. Holt*: **fisheries** should be managed so that they are **profitable**, otherwise fishermen won't go out to fish.*
- Maximizing yields **using simple models** is too simplistic.
- For some fleets, strict **MSY application** will **reducing fishing effort** by a high percent (> 60%).
- **Fishing rates** are getting closer to MSY, they are **on the trajectory.**

- If **MSY** has to be used as the EU accepted policy, then it should be set **as a limit,** not as a target.
- Managing at or above BMSY, seems possible. MSY approach can be tuned/adjusted to the reality of the European fisheries.
- Move from **traditional MSY** towards a **"pretty good multi-yield" concept**.
- "**Pretty good multi-yield" region:** define fishing rates ranges assuring biological sustainability.
- Within a region, fishing rate could be weighted depending on CFP objectives as far as all stocks are fished under levels of "pretty good multi-yields". Then, MMF could be considered as fished at MSY.



CASE STUDIES

- **Cod mixed fisheries in the North Sea.**
- **Mixed fisheries in the Celtic Sea**
- **Demersal multispecies and mixed fisheries in the Iberian Waters.**
- **Trawl demersal multispecies fisheries in the Mediterranean Sea.**

CS Celtic Sea

- Target a mixture of hake, anglerfish, cod, haddock, megrim, plaice, sole and nephrops. By-catch in nephrops fisheries.
- Otter, beam and pair trawls: 11- 25% of discards.

- Species with **MSY individual limits** (cod, hake, herring, whiting, haddock), in 2012 only cod is in bad shape.
- Haddock and plaice (western Channel), good status. Hake and whiting are at appropriate levels.

- **Discards:** substantial as for small sizes, quota exhaustion and low market value.
- Restrictions on effort may induce high-grading.
- Selectivity improvements being developed: the accomplishment of landing obligation might be feasible.
- On the contrary, difficulties as some species are perceived as very abundant but quota system limit them.
- 60 % of the fleets targeting hake and 100 % of the nephrops fleets will be significantly affected.

- **Ecosystem:** need of TAC reconciliation of choke species

The conclusions

- In management, **other dimensions** (economy or social), look also for different ways of reaching sustainability.
- European fisheries **complex nature**, limits the success of certain management strategies (e.g. TAC) incentivizing misreporting or discarding.
- Catch optimization aim of landing obligation is clear, but it bumps against **practical implementation**.
- LO encourages improving selectivity, behavioural changes and developing new marine products.
- Profitability of the MMF could be reduced and the loss of fishing opportunities could appear.
- Increase of costs in MCS unless incentives are provided for fishers commitment.
- Fishing under precautionary limits means setting limits to catch, so if unpredictable events occur, stocks will still be under safe limits. These **limits** can include **other approaches** than the **MSY traditional** concept.

- In a MMF, fish stocks **MSYs targets** are **calculated separately**. But, applying **different effort levels** to species inhabiting a single habitat and vulnerable to the same gear **is impossible**.
- In MMF, if the **overall level of exploitation** is fixed at the lowest level required by the species with the lowest resilience, this will reduce drastically the utility of the resource.
- In an EBFM, relationships within **all ecosystem components** have to be considered. But MSY does not take this into account, misleading the advice provided.
- In MMF**, the MSY concept** is weak in relation to its own definition and implementation.
- In MMF, fishing mortality ranges can be defined, assuring sustainability **(“pretty good multi-yields”).**

The recommendations (Landing obligation)

- **Recom.1**: Selectivity: still a chance to improve.

- **Recom.2:** Cost of above point has to be quantified.
- **Recom.3**: Incentives (not just economic) to be provided to compensate for extra costs and loss of opportunities.
- **Recom.4:** MCS have to be reinforced to guarantee accomplishment.
- **Recom.5**: Determine the economic feasibility of the landing obligation to define the incentives to be created.

- **Recom.6:** TAC and quotas new management scenarios simulation testing.
- **Recom.7:** Flexible multispecies quota-swap mechanisms among fleets of MS to compensate quota overshooting.
- **Recom.8:** Revision of regulations that are overcome by new landing regulation

- **Recom.9:** New products and markets to explore avoiding to shift fishing effort to other ecosystem components.
- **Recom.10:** Fishermen institutions to play a key role also other actors.
- **Recom.11**: Regional workshops to exchange information concerning good practices on the landing obligation

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- **Recom.12: Under these complex facts, an extension or larger flexibility of LO time-frames should be considered.**

The recommendations (MSY)

- **Recom.1:** to include mixed-fisheries and multispecies advice in the process to provide with first catch advice in all Eco-regions.
- **Recom.2:** review inconsistencies in TAC of species caught by the same fleets.
- **Recom.3:** MSY ranges of the main European commercial species should be defined in a multispecific context: “pretty good multi-yield”.
- **Recom.4:** when establishing multispecies MSY ranges, to overview the total catch profile by fleet, and avoid to simplify the complex ecosystem to single catch advice.

The simple definitions:

- **Discards:** To release or return fish to sea, dead or alive, whether or not such fish are brought fully on board a fishing vessel.

- **By-catch:** Fish other than the target species that are caught incidental to the harvest of the primary species.

- **Choke species:** A low quota species, which, if reached, would lead to vessels having to tie up even if they still had quota for other species

- **Sustainability** is the capacity to endure. Characteristic of resources that are managed so that, the natural capital stock is non-declining through time, while production opportunities are maintained for the future.

- **Selectivity:** ability to target and capture fish by size and species during harvesting operations**.**