

Reform of the EU Common Fisheries Policy

Briefing on ecosystem-based management and MSY

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Introduction

The Common Fisheries Policy, Europe's fisheries policy management tool since 1983, is up for review for the first time in 10 years.

This year, for the first time, the European Parliament under the codecision procedure has a crucial role to play in reforming the policy.

This briefing provides more specific information about one of the key issues of this CFP reform, the ecosystem-based management and Maximum Sustainable Yield (MSY).

1. What is an ecosystem based management approach?

An ecosystem is a system of organisms, the environment and processes that control its dynamics. It is highly complex.

Fishing has an effect not only on targeted commercial stocks, but also on protected non-commercial species including mammals and birds, as well as on the habitat. An ecosystem-based approach to fisheries management will ensure that the benefits from fishing are high, while the secondary effects of fishing operations are defined and limited.

MSY is the harvesting strategy for commercial stocks. When MSY management is combined with protection against secondary effect from fisheries such as by-catches of birds or disturbances of bottom habitats, we have an ecosystem based management.

It has been estimated that 3 billion euro each year and 100.000 jobs are lost today compared to if all EU stocks were managed according to the MSY concept (Jobs lost at Sea, New Economics Foundation, ISBN 978 1 908506 12 2).

2. What is Maximum Sustainable Yield (MSY)?

MSY is a way to optimise the management of fish stocks to produce the maximum possible amounts of fish.

MSY is defined by the Commission as “the maximum catch that may be taken from a fish stock indefinitely”. A strategy of fishing at or above MSY while incorporating principles of an ecosystem-based management results in larger and more stable fish stocks.

MSY normally refers to the size (in tonnes) of a fish stock at which it has the highest production – the so called B_{msy} – and the maximum sustainable catch can be obtained.

MSY can be expressed as the size of the stock (weight) but also as the amount of fishing (fishing mortality) that will lead to a stock size of MSY – the so called F_{msy} . The level of fishing can be fully regulated by management and is therefore something that is legally clear to regulate.

Of course, it is more difficult to legally regulate the size of the stock since this is affected by natural variations such as climate variations. However, it is the size of the stock that forms the basis for the high production and it's therefore a crucial parameter to follow in order to optimise management.

When the fish stock size is above MSY, the density of fish in the water will be higher. This has positive repercussions on profitability for the fishing industry: a higher density of fish means that it is possible to catch more fish per hour.

The proposal for the Basic Regulation therefore advocates keeping stock sizes above MSY for two reasons: to both improve profitability, and to provide a buffer for natural variations so that stocks and landings can be kept high also during less favourable years. This is important as stock levels vary naturally.

3. Economic benefits of MSY fisheries

Currently and in the past, bad fisheries management has resulted in stressed ecosystems, small fish, small stock size, high catch fluctuations and high fishing effort and costs. Achieving MSY will help reverse these trends.

➤ Processing chain stability

The processing chain is integral to the fishing industry. Its success depends on sourcing a steady supply of fish in order to sustain regular production and employment. Management of stocks above MSY will improve steady supply with small yearly TAC variations.

➤ A shifting focus within the supply chain towards sustainably caught fish

Processors and retailers increasingly demand fish from well managed stocks. Examples of this are McDonald's Europe elected to certify 7,000 restaurants to the MSC Chain of Custody traceability standard and offer almost 100 million sustainable Filet-O-Fish portions across Europe or Walmart who only offer MSC labelled fish products. It is clear that in order for these retailers to consider

buying their fish from within the EU, the management of EU fish stocks needs to meet these demands.

A very real and reachable management target, MSY benefits therefore not only the functioning of the ecosystem but also the fishing industry.

4. How can MSY be achieved?

For stocks below B_{msy} it is necessary to set a TAC (total allowable catch) that will allow the stock to reach the desired level. The amount of fish taken from a stock is expressed as fishing mortality, or F , by biologists. While the most efficient way to reach B_{msy} is to close the fishery, F_{msy} expresses the fishing mortality that will result in B_{msy} .

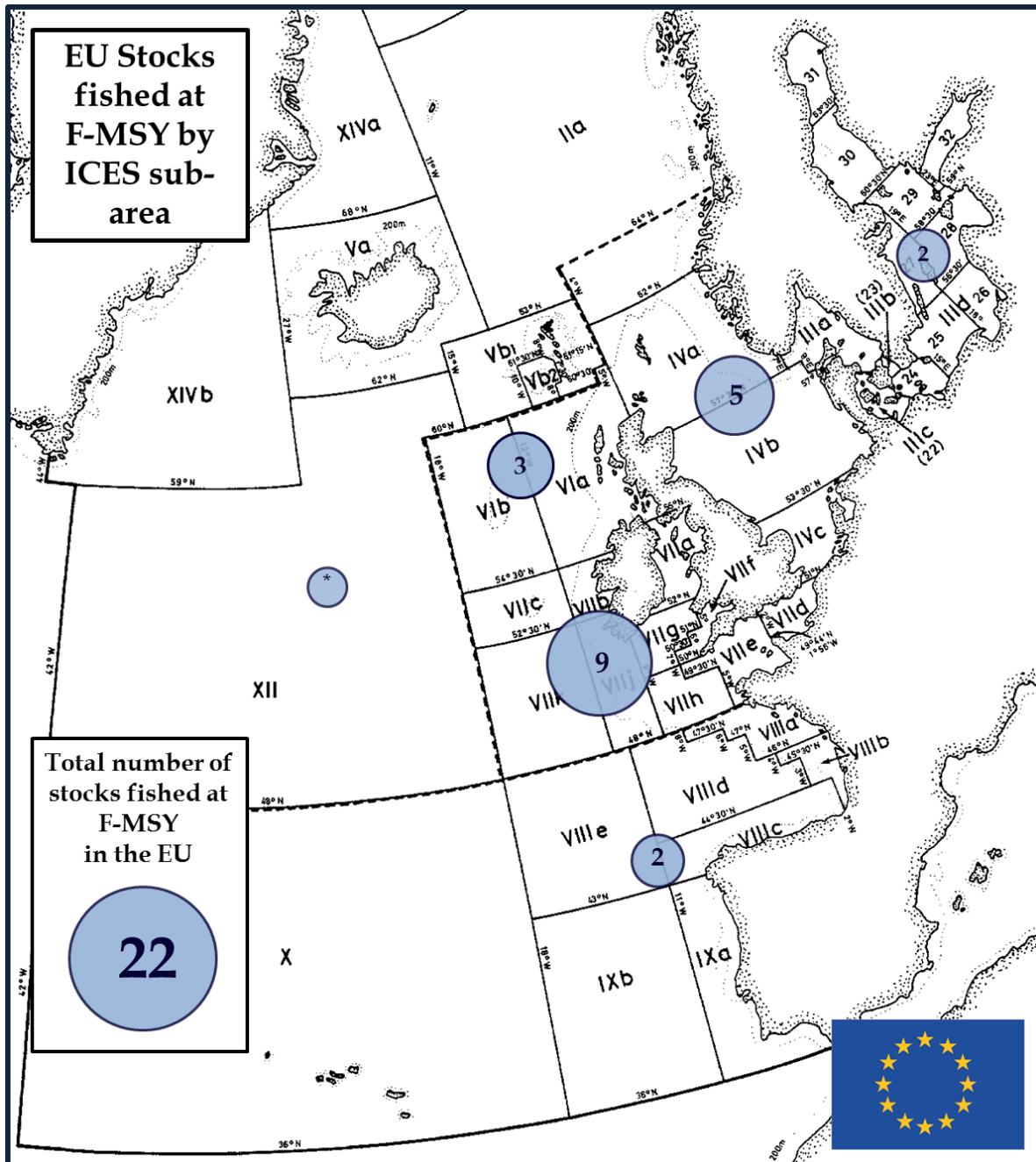
While some stocks are already fished at MSY, other stocks are at such a level that it will be impossible to reach B_{msy} in 2015 without fishermen incurring severe economic effects due to the drastic reduction in TACs that will be required. The PECH report proposes therefore that rather F_{msy} must be reached at the latest in 2015, in order to establish a fishing pressure that will eventually lead to MSY.

5. How is the MSY management approach currently used in the EU?

The use of MSY in fisheries management in the EU is nothing new, and in response to clients' need, since 2010 ICES has delivered advice based on the MSY approach.











Today, there are 22 EU fish stocks at MSY level. These fisheries benefit from sustainable and profitable fishing with higher landings. For example the Baltic cod fishery has increased its revenue by approximately 60% in 5 years.


EU stocks fished at Fmsy level by ICES sub-area



* Blue Whiting is a straddling stock and is thus not attributed to specific ICES sub-areas. The stock is evaluated to be fished at or below Maximum Sustainable Yield mortality rates across the European Union by the European Commission. [COM\(2012\) 278 final](#).

List of species fished at f-MSY in the European Union by stocks, 2012

Species	Stock(s)
 Anglerfish	Off Portugal (ICES sub-area IXa) and Atlantic coast of Spain (ICES sub-area VIIIb)
 Blue whiting	All areas
 Common sole	Skagerrak, Kattegat (IIIa) and Baltic Sea (IIIId) Western Channel (VIIe) Celtic Sea (VIIa)
 Haddock	North Sea (IV a,b,c) Rockall (VIb) West of Scotland (VIa)
 Herring	North Sea (IV,a,b,c) Celtic Sea (VIIg,h,j,k) Bothnian Sea
 Horse Mackerel	Western area, from Cantabrian Sea (VIIIc) to northern North Sea (IVa)
 Megrims	Off Portugal (Ixa,b) and Atlantic coast of Spain (VIIIc)
 Norway Lobster	Skagerrak and Kattegat (IIIa) North Sea (Fladen Ground) (?) West of Scotland (VIa) Celtic Sea (VIIg,h,j,k) and Irish Sea (VIIa)
 Plaice	North Sea (IVa,b,c)
 Cod	Eastern Baltic Sea (IIIId)

 Spurdog	Northeast Atlantic
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6. Stakeholder concerns

- “MSY is a theoretic concept that cannot be implemented in practice and would result in a sea overflowing with fish”

There are today 19 stocks managed according to the MSY concept with a stock size above MSY (see map). It can be implemented and steps to achieve FMSY are easily taken.

- “MSY cannot be implemented for more than one species at a time”

The International Council for the Exploration of the Seas (ICES), the scientific cooperative organisation for countries around the North Atlantic, concludes that “the MSY concept can be applied to an entire ecosystem, an entire fish community, or a single fish stock” (General context of ICES advice 2012). It is therefore a misunderstanding that it is constrained to single stock.

- “MSY takes a very long time to reach”

Recent examples from the Northeast Arctic cod stock and the Eastern Baltic Cod stock show that recovery time from “overfished” to “fished above MSY” level has been 5-7 years ([see summary](#)). However, a prerequisite is that IUU fishing, including discarding, is low and that scientific advice and management plans on how to reach MSY is followed.

- “The fishing industry will have to close down in order for stocks to reach MSY ”

Recent examples from the Northeast Arctic cod stock and the Eastern Baltic cod stock show that the industry did not have to close or even reduce TACs. Harvest rules can be constructed that minimize effects on the industry at the same time as it allows the fish stocks to rebuild ([see summary](#)).