



## ▶ Pelagic AC

**MCRS workshop**  
6 June 2017  
13:00 – 16:30 hrs  
Parkhotel  
Molenstraat 53, Den Haag  
The Netherlands

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### Participants

1	Esben Sverdrup-Jensen	Danish Pelagic Producers Organisation
2	Aukje Coers	Cornelis Vrolijk
3	Bart Adriaenssens	Swedish Agency for Marine and Water Management
4	Bent Pallisgaard	The Danish AgriFish Agency
5	Christien Absil	Seas at Risk
6	Claus Reedtz-Sparrevohn	Danish Pelagic Producers Organisation
7	Derk Jan Berends	Nederlandse Vissersbond
8	Goncalo Carvalho	Sciaena/Pew Charitable Trusts
9	Guus Pastoor	Dutch Fish Federation/AIPCE
10	José Beltran	OPLUGO
11	Ken Haste Andersen	DTU Aqua
12	Lisbet Nielsen	The Danish AgriFish Agency
13	Ludvig Ahm Krag	DTU Aqua
14	Marco van Riel	Dutch Ministry of Economic Affairs
15	Martin Pastoors	Pelagic Freezer-trawler Association
16	Matthew Clarke	Fisheries Attaché Ireland
17	Pim Visser	VisNed
18	Reine Johansson	Swedish Fishermen's Federation
19	Rob Banning	Parlevliet & van der Plas
20	Sean O'Donoghue	Killybegs Fishermen's Organisation
21	Søren Anker Pedersen	EU Fishmeal
22	Verena Ohms	Pelagic AC

### 1. Opening of the meeting by the chairman, Esben Sverdrup-Jensen

The chairman opened the meeting at 12:00 hrs and welcomed the participants. He provided some background to the workshop which is the result of discussions that started in 2014 when the Pelagic AC was working on a recommendation on implementing the pelagic landing obligation. The issue made its way back on the agenda when dealing with the revision of the technical measures regulation which is still ongoing. It was decided to have an in-depth discussion on the use of minimum conservation reference sizes (MCRS) and to get to the bottom of the scientific background as well as how MCRS



work as a conservation measure. Another question to be addressed is why MCRS are included in the market regulation. A number of experts have been invited to present their knowledge on these questions. The chairman hoped for an open discussion in an informal mood. The aim of the meeting was to gain a better understanding of MCRS and a clearer view of where to go with this in the future. A tour de table followed.

## **2. Adoption of the agenda**

The agenda was adopted without amendments.

## **3. The relevance of MCRS from a market perspective (presentation by Guus Pastoor, followed by discussion)**

Guus Pastoor thanked the chairman for the invitation to give this presentation. He said that he would give some background on why there were marketing standards to possibly conclude at the end whether there is a contraction and whether these marketing standards are really needed; a question also asked by the Commission.

He provided some basic information on AIPCE and the processing and trading sector. AIPCE's priorities are to ensure enough supply, to improve the regulatory environment and to promote a positive image. He explained that different consumers perceive supply differently, e.g. in Southern Europe people have a different perspective regarding appropriate fish sizes compared to Northern Europe.

The total EU supply has not changed much over the past 11 years. It is declining in some areas and growing in others. However, he would like to see the market grow overall. The same can be said for exports which are also fairly stable. The most important non EU supply countries into the EU are China, Norway, USA, Vietnam, Iceland and Russia. In terms of fish consumption there are large differences between EU countries and it would be inappropriate to treat the whole EU as one market, but rather look at different market segments. While Portugal consumes more than 50 kg per capita per year, the Netherlands only consumes slightly more than 20 kg.

Due to differences in market segments and consumption patterns there has been an EU regulation on how to organize that market, i.e. the Common Market Regulation. Looking at how the market might potentially develop, indicates that the EU self-sufficiency will not be higher than 59% in 2030 in an optimistic scenario and might be as low as 42% in a pessimistic scenario. This is worrying for many people given the rapid global development and the growing seafood demand from exporting countries that will likely reduce their exports to meet domestic demand. Therefore, having a growing fisheries and aquaculture sector within the EU is very important in regards to food security. Inside the EU, however, aquaculture is not really growing whereas outside it is exploding. Overall the situation does not look promising and the EU might end up competing for fish resources much more than is currently the case. Especially developing countries will put pressure on the EU's supply. Prices are expected to increase while imports from Asia are expected to decrease significantly. Therefore, FAO tries to promote aquaculture and reduce discarding and wasting to fill the gap.

The Common Market Regulation is part of the CFP basket and has existed for a long time. Marketing standards and specifications have been mentioned in the regulation for canned sardines, canned tuna and other products. The rules on canned products are mostly focusing on naming the species and quality, so that consumers can be confident about what they buy. The regulation enabled a level-playing field among processors. It also was a basic element of an intervention mechanism and for regulating international trade, because fish that did not meet the standards had to be thrown away.



According to the Common Market Regulation, minimum marketing sizes should take into account the best available scientific advice and, where relevant, correspond to MCRS. However, this was a rather vague formulation and there was a risk that minimum marketing sizes deviated from MCRS. For example, the minimum marketing size of a fish could be 24 cm while the MCRS could be 20 cm. In that case a 20 cm fish could be landed, but not sold. Such contradictions made no sense.

All products that do not comply with common marketing standards must not be used for direct human consumption.

Guus Pastoor concluded that there were few reasons to maintain marketing standards for regulated species. For canned sardines and tunas there were good reasons to keep the standards. However, marketing sizes should be aligned with MCRS to keep it simple and avoid costs and waste. In some cases this could lead to more unwanted sizes of fish on the market, but marketing standards are anyway less effective with growing international trade. At the moment the Commission is also investigating whether marketing sizes should be kept or not. If there is no contradiction with MCRS, they should be kept. Otherwise it would not make sense to keep marketing standards. In general he had some doubts whether marketing standards were still relevant in today's world.

Martin Pastoors wanted to know whether Guus Pastoor had an overview of marketing sizes.

Guus Pastoor confirmed that he had such an overview and he considered it a good idea to compare them with MCRS.

Pim Visser said that there was a tendency to move to industry-agreed sizes instead of EU regulated sizes. He wanted to know what Guus Pastoor thought about moving to industry groups setting such norms.

Guus Pastoor saw an advantage in terms of flexibility, because people could adjust to the market. However, he also pointed out that this could create problems in regards to having a level playing field. The main problem at the moment was that the marketing sizes cannot be changed easily and adjusting them takes a very long time. Another problem was that e.g. in The Netherlands fish are measured by size while other countries weigh them. These kind of differences should be addressed too.

Claus Reedtz-Sparrevohn wanted to know whether there are marketing sizes for all species.

Guus Pastoor replied that not all species are covered, but quite a lot are.

Sean O'Donoghue said that the marketing standards had been agreed on in 1976 and since then have been rolled over into subsequent regulations. So, there has been no change to the numbers since 1976.

Guus Pastoor explained that originally the marketing sizes had a function of control which is no longer needed due to numerous other regulations dealing with catching. Getting rid of marketing sizes could mean in some fisheries that smaller sized fish will enter the market. However, whether that would create problems remains to be seen. He mentioned turbot as example where people were worried that sales of small turbot would lead to lower prices, but that was not the case.

Pim Visser said that there is always some tension between technical rationale and the political process with technical aspects usually losing out to politics.

Bent Pallisgaard understood that the marketing standards also applied to imports, but wanted to know whether they also apply to catches by Norway that are landed into Norway given that Norway is part of the EEA. However, Norway does not use MCRS, but minimum catch sizes. This could lead to situations where fish sizes could be landed that were not allowed to be caught.

Guus Pastoor replied that the marketing standards apply to fish that is landed or imported into the EU. Another problem were semi-processed products. Marketing standards have always focused on the



whole fish, but if fish is being processed, then what should people look for in regards to marketing standards.

The chairman pointed out that there is still a discussion ongoing on whether marketing sizes were put in place to protect fish stocks or to protect fishermen from bad prices. He wanted to know whether there was a clear answer to this debate.

Guus Pastoor responded that protecting fish stocks was not his area of expertise. He believed that in the past this had been the idea behind marketing sizes. However, setting certain minimum sizes was also advantageous for the market, because it did protect fishermen from too low prices. On the other hand, people had to look at how much products were wasted that may be landed, but not sold. He also emphasized that prices are much more determined by supply and demand rather than size differences. Therefore, he did not consider marketing sizes a real protection mechanism anymore.

Martin Pastoors said that STECF concluded that minimum landing size had no effect in terms of conservation under the old system. This might change under the landing obligation, because now people have to count undersized catches against their quota.

Goncalo Carvalho noticed the advantage of having some sort of level playing field across EU countries which could not be achieved if sizes varied from country to country. As example he mentioned Southern horse mackerel where 1% of the catch may be sold below MCRS. STECF has concluded that this can lead to control problems and an increase in efforts in small sizes. If not properly controlled, fishing mortality could be underestimated which would jeopardize future yield. He thought that there has to be some baseline when looking at MCRS as minimum marketing standards, because without that it would be very difficult to control what is going on between different countries.

Guus Pastoor agreed and therefore MCRS and marketing sizes should be aligned. While in theory they are, in practice this is not always the case.

Claus Reedtz-Sparrevohn wanted to know whether there were any examples where effort increased on smaller fish and led to the development of a market for smaller sizes.

Guus Pastoor said that this happened for turbot. However, he was not sure if this was due to a change in the pattern of the fishery or something else.

Aukje Coers explained that turbot is a bycatch fishery and therefore she doubted that there was a change in the fishing pattern. She was not sure about horse mackerel and whether it was demand driving a fishery on smaller sizes.

Goncalo Carvalho said that in Portugal there was demand for juvenile horse mackerel and the NGOs feared mostly about control. The argument for allowing this fishery was that the stock is in a good shape and handle it, but the question was how to control such exemptions for undersized fish, especially when taking into account how Portuguese markets work and how difficult it is to trace fish in that market.

Sean O'Donoghue agreed that matching MCRS and marketing sizes was important, however, this was only an issue for the demersal sector, because for mackerel, herring and horse mackerel the marketing standards and MCRS are identical. While there is no MCRS for blue whiting, there is a marketing size for that stock. So far, he saw no divergence in the pelagics, but could not exclude such a divergence when the new technical measures regulation is agreed. He thought that it might be necessary to revisit marketing standards in the Market AC.

Guus Pastoor agreed that both lists had to be compared to make sure that they are aligned.

Pim Visser said that reducing MCRS would have no impact on the assessment, because in the assessment models undersized fish are assumed to be dead, although there might a change in reality.



Martin Pastoors pointed out that that was only true if discards were known, which is not always the case for past years.

Aukje Coers said that changing MCRS would lead to a change in fishing behavior, because smaller sizes will be targeted more.

Pim Visser said that in the Dutch demersal fishery the industry was trying to lower MCRS, so more fish can be sold for human consumption. This would not affect the stock, but of course people would have to find a market for the smaller sizes.

The chairman thanked Guus Pastoor for his presentation and moved on to the next speaker.

#### **4. History of MCRS/minimum landing size in ICES (presentation by Martin Pastoors, followed by discussion)**

Martin Pastoors explained that he prepared some slides on the history of MCRS which were previously called minimum landing sizes and which were very much related to gear, selectivity, mesh sizes and discards. MCRS on the other hand is always related to conservation, maturity and the landing obligation. The two questions he wanted to address were:

- How has the minimum size be defined in Europe and
- What has changed with MCRS?

To answer these questions he used a reversed snowballing method. He provided a brief overview of the different technical measures regulations and when they were agreed. The first one he found was from 1980 and the text in regards to minimum landing size was quite concise. It contained no definition for minimum landing sizes and only used the words “fish sizes” and “undersized”. However, these were linked to mesh size and other measures that could be used to conserve fish stocks. Since that initial appearance of minimum conservation reference sizes they have never changed.

To find out the scientific rationale behind these sizes he looked into old ICES reports. One of the reports from 1977 shows a close link between mesh sizes and minimum landing sizes by stating that if one changes the other should change as well. There are many more old ICES reports which are being digitized at the moment, dating back to 1965. It seems clear that minimum landing sizes are very stable. Once they have been set they hardly change. The scientific basis, however, remains very hazy.

MCRS for mackerel is 30 cm in the North Sea and 20 cm outside the North Sea. At the same time 40-50% of western mackerel is taken in the North Sea supposedly as part of the Western stock. Nevertheless, the North Sea MCRS applies to these catches. What was the rationale behind this regulation? Martin Pastoors had found some clues in documents from the late 1960ies where a concern is mentioned in regards to industrial fisheries. Afterwards there was a discussion back and forth on whether minimum landing sizes should be set to 30 cm elsewhere, but since this would have increased discards, people decided not to do so. In the early 1990ies a minimum landing size of 20 cm was introduced in the western area, but he had not been able to find any paper about this.

The 30 cm in the North Sea was first introduced by Norway to protect the strong 1969 year class from the industrial fishery. In the 1980ies ICES recommended 30 cm minimum landing size for mackerel in all areas to protect juveniles and used productivity as argument. In 1992 the minimum landing size was set to 20 cm in the Western waters, but the underpinning document is missing. These sizes have remained in place ever since without any form of review.

In the new CFP MCRS has been defined as the *“size of a living aquatic marine species taking into account maturity, as established by Union law, below which restrictions or incentives apply that aim to*



*avoid capture through fishing activity; such size replaces, where relevant, the minimum landing size".* However, it was not clear what "taking into account maturity" means.

STECF has reviewed the basis of setting MCRS and said that objectives for setting MCRS should be clearly stated. STECF also concluded that there was very little biological justification for MCRS. There are all kinds of things that could be taken into account, e.g. markets, ethics, biology, but in the end it was decided to use the number attached to 50% maturity. STECF furthermore argued, that *"if MCRS in the future are to be set with more of a biological rather than an economic objective then they could be set on the basis of length at maturity or optimal length"*.

However, even defining 50% maturity was not so easy, because this number could be defined by area and there could be different sizes of maturity by different areas. Another question was how this will be affected by trends over time. What will happen if there are changes in size at maturity and how would that be estimated? How should one deal with uncertainty?

In conclusion, the basis for minimum landing sizes was unclear and there were no published scientific reports justifying the numbers. However, there was a strong link with mesh sizes. Once minimum landing sizes have been defined, they seem to hardly ever change.

MCRS on the other hand are defined loosely in the regulation, but no clarification is provided on what it means to take into account maturity. It seemed that the new scientific dogma was to set MCRS equal to 50% maturity, but the problem of when, where and how to measure that remained.

Claus Reedtz-Sparrevohn wanted to know whether Martin Pastoors found any evidence for a change in perception of using minimum landing sizes in relation to the quota system. He wondered whether the TAC for mackerel had been defined around the same time.

The chairman thought that there had been some sort of gentlemen agreement within NEAFC. He pointed out that the price of mackerel had been nothing compared to what it is today and there was a huge industrial fishery.

Reine Johansson said that this was not the only example of a regulation that was impossible to justify. He said that the argument raised by Goncalo Carvalho was exactly the same as in the 80ies, but the drivers were very different now due to the landing obligation and the issue had to be approached from another view.

Pim Visser said that mesh sizes were introduced in The Netherlands in the 1970ies, before there even was a CFP. He promised to forward the details to Martin Pastoors, so he could include them in his historic overview.

Aukje Coers wanted to know what came first: mesh sizes or minimum landing sizes. She also wanted to know whether there was any information underpinning that relationship.

Martin Pastoors replied that the thinking quite obviously started from a gear perspective. People were looking at selectivity curves and what sizes were contained with a certain type of gear.

Aukje Coers wanted to know whether that was in relation to market thinking, but Martin Pastoors responded that conservation was also part of the rationale. He was still looking for literature about that relationship.

Sean O'Donoghue wanted to know whether Martin Pastoors also has had a closer look at herring and horse mackerel. He thought it would be very important to look at these stocks in detail, particularly when it comes to herring where MCRS might be relevant in some areas, but not in others. He said that a one size fits all approach is not the right way forward. The mackerel example is a perfect example of people fishing across a man-made boundary and having to deal with different MCRS due to an industrial fishery that no longer exists. This issue had to be resolved and the regional groups were



waiting for input from the Pelagic AC in that regard. He hoped that common sense would prevail in the end. He asked Martin Pastoors how much work it would be to look at the details for herring and horse mackerel.

Martin Pastoors promised to look into it.

Goncalo Carvalho understood that MCRS were set to size at maturity, because Beverton and Holt showed the advantage of having fish spawn at least once. He understood that size at maturity changed and he wondered if the sizes could not be updated.

Martin Pastoors explained that this was one rationale, but that there were others too. In terms of production it might be better to harvest fish earlier because of the growth rate. If people wanted to optimize production, then fish should be harvested at younger ages to exclude competition effects. Regarding changes to MCRS he said that there was already a problem with constantly changing reference points. If people now decided to change MCRS too, the system would become completely variable. The challenge was hence to decide when to update MCRS. He also argued for taking into account regional differences.

Aukje Coers said that MCRS could be updated every 10 years in line with the CFP. This would definitely be better than keeping them unchanged for 5 or 6 decades.

Guus Pastoor said that changing MCRS every year would be a problem, but he agreed that taking some sort of reference period would be fine from a market perspective.

Bent Pallisgaard said that the problem in relation to having different MCRS for mackerel also existed for other stocks, e.g. cod and haddock in the North Sea.

Martin Pastoors replied that this was because those stocks were separate previously, but have now been merged into one stock.

Reine Johansson pointed out that this was also the case for mackerel. Originally there was a stock in the Skagerrak and in the North Sea until all of a sudden ICES decided that these were the same stock.

## **5. Population dynamics in relation to MCRS/MLS management (presentation by Ken Haste Andersen, followed by discussion)**

Ken Haste Andersen said that his talk would deal with some of the science underlying MCRS and he hoped to present some pieces of the puzzle. The theory on which MCRS are based comes from Beverton and Holt who calculated yield from fish stocks under a certain fishing pressure and size in 1949. The result was a cardboard model as a function of yield of fishing mortality and the age at which fishing starts. The resulting curve has a peak at a certain size selectivity and fishing mortality where one would get the highest yield. This in turn means that MCRS should be chosen in such a way that the peak is realized. For this either size or age can be used, but size is more logical when talking about MCRS. Individuals grow as they mature and then have a certain reproductive capacity.

Ken Haste Andersen referred to the website: <http://stockassessment.org/spectrum> where people can play with different parameters and change landing sizes to see how that would impact a stock. He said that this is also what ICES looks at when determining the size that will maximize yield. Even though this might not be made explicit in the ICES advice, every stock assessment scientist has this in mind. Fishing below size at maturation would be a reduction in yield. He also thought that most stock assessment scientists have an idea of size at maturity, because they measure maturity ogives.

Ken Haste Andersen explained that protecting juveniles and letting fish spawn once is not a goal in itself. Rather, it is a convenient rule of thumb to maximize yield. This rule of thumb comes from adding the growth curve and the mortality curve together which allows people to calculate the biomass of a



cohort. Biomass increases until it hits a peak and this is where yield is maximized. Ideally, MCRS corresponds to that peak. If people fished juveniles, then that would mean that part of the yield from that cohort would be lost.

However, this classical theory is being challenged by a number of new theories which question the rationale. While protecting juveniles seems intuitively obvious, it is actually not. Ken Haste Andersen referred to a terrestrial example of cutting down young trees to allow older trees to grow better and thereby providing a higher biomass. This idea is better known under the term “balanced harvesting” which has gained increasing support over the past few years. However, others argue that balanced harvesting does not provide much explanation for why juveniles should be fished harder.

Optimal yield theory shows that the largest yield can be realized when catching large individuals, but that is based on the assumption that competition takes place later in life. If competition takes place earlier, i.e. in the juveniles, then the best yield would be realized by catching smaller fish. There are plenty of examples of freshwater fish where this relationship has been demonstrated very clearly. The same relationship is less obvious in marine fish, however, growth does decline if stocks become too big. This indicates that probably some middle ground applies to marine fish, but it was difficult to say whether one scenario was more likely than the other.

In conclusion, if people wanted to find the optimal size of fishing and take into account density dependency, then it might make sense to catch smaller sizes.

The chairman thanked Ken Haste Andersen for his presentation and invited comments from the audience.

Bart Adriaenssens understood that one of the assumptions in the model is that if larger fish are targeted, the mortality on smaller fish is lower. However, he pointed out that escapement inflicts high mortality and he wanted to know whether this can be built into the model.

Ken Haste Andersen replied that this is not built into the models through the selectivity curves at the moment, but the effects of this could be simulated through size dependent predation mortality curves.

Bart Adriaenssens thought that this could lead to situations where stock size is affected significantly by imposing an MCRS.

Ken Haste Andersen agreed that this could be the case. On the other hand, not imposing an MCRS this could lead to fishing even smaller individuals.

Pim Visser wanted to know whether this discussion was not related to finding  $B_{msy}$ .

Ken Haste Andersen explained that this had nothing to do with  $B_{msy}$ ; only  $F_{msy}$  and selectivity. He agreed that it would be much harder to deal with  $B_{msy}$ .

Pim Visser wanted to know why the concept of  $B_{msy}$  keeps popping up and why certain parties want to set  $B_{msy}$ .

Ken Haste Andersen had difficulties understanding this as well, but he guessed that  $B_{msy}$  is easier to understand for certain people, because it is more tangible.

Pim Visser then suggested to join forces between industry and science to push for  $F_{msy}$ .

Ken Haste Andersen agreed that  $F_{msy}$  is better for management, but nevertheless there was a capacity limit.

Sean O’Donoghue said that selectivity in pelagics is not the same as in demersal fisheries. Increasing mesh size does not increase selectivity in pelagics. He wanted to know how MCRS could be reconciled, if mesh sizes were irrelevant.



Ken Haste Andersen that the gear will always have some kind of selectivity, but he was no expert on this topic.

Martin Pastoors agreed that maturity is the standard measure used in ICES. However, this was not in relation to size, but in relation to age. He therefore thought that people should look at what size is associated with maturity.

Ken Haste Andersen agreed, but also pointed out that there was a reason why ICES works with age. There is a weighted age curve that changes all the time. However, he confirmed that ICES will have to face the shifting growth curves at some point.

Aukje Coers wanted to know how the 50% retained size related to minimum size and whether MCRS should not be lower than the 50% retained size.

Ken Haste Andersen thought that the Working Groups do not calculate things in that much detail. On the other hand the curves are very flat and for e.g. mackerel it does not matter whether the size is set at 26 cm or 27 cm.

Goncalo Carvalho wanted to know how easy it would be to include density-dependent variables in the assessment model.

Ken Haste Andersen replied that this is not an easy task. People are currently trying to figure out if what they are doing is good enough. Maybe the rules of thumb are ok, but maybe they are not and should be changed.

Goncalo Carvalho was worried about the example Ken Haste Andersen gave in relation to the trees, but he understood the relevance of the work and considered it interesting. However, he did not think that there was enough evidence to challenge the current management approach.

Ken Haste Andersen countered that when Beverton and Holt developed their work on minimum landing sizes it was extremely controversial. However, nowadays people simply take it for granted.

The chairman thanked Ken Haste Andersen again for his presentation.

## **6. Selectivity in pelagic trawls (presentation by Ludvig Ahm Krag, followed by discussion)**

Ludvig Ahm Krag thanked the chairman for the opportunity to give this presentation. He explained that there are two types of selectivity: size selectivity which is a mechanical process based on the size and shape of the net and species selectivity which is a behavioral based process. A combination of both of these factors is relevant to determine overall selectivity. In general, the aim of selectivity is to allow unwanted species and sizes to escape capture and survive.

He said that most of the fish brought on board usually die. The research project SURVIVAL conducted an experiment to assess the mortality of escapees by collecting them once they left the codend. This was a very resource demanding experiment. It showed that in general smaller individuals of haddock and whiting have a lower survival rate of between 15% and 75%, but larger individuals of 15 cm and more showed almost 100% survival. Size selectivity therefore is a strong management tool in demersal fisheries, because most escapees in general survive. Size selectivity is also relatively easy to adjust. In cases where survival of escapees is low there is no biological benefit from using mesh size selectivity as a management tool.

Only few studies have addressed survival of pelagic species and hence knowledge is limited. Carrying out survival experiments is resource demanding and practically challenging. However, it has been shown that skin injuries and exhaustion are the most likely causes of escapee mortality in herring. The



usefulness and justification of codend mesh size management in the herring trawl fishery has therefore been questioned by several scientists. Similar findings also exist for other small pelagic species.

Ludvig Ahm Krag also pointed out that there are significant differences between demersal and pelagic fisheries. Demersal catches are much smaller compared to pelagics and individuals have a high contact with the codend meshes or selective device whereas this is not the case for pelagics. There is a high level of survival of demersal escapees whereas that level is low in pelagics. On the other hand, species selectivity is high in pelagic fisheries and low in demersal fisheries.

In conclusion, the low rate of survival of pelagic escapees gives little biological meaning to size selectivity. Instead, pelagic codends are constructed to avoid size selectivity to prevent large amounts of fish getting stuck in the meshes.

The chairman thanked Ludvig Ahm Krag for his presentation and concluded that not many studies have been done regarding survival in pelagics.

Ludvig Ahm Krag pointed out that there have been some tests with selectivity grids in purse-seiners. However, the overall information is very limited.

Bart Adriaenssens said that STECF in its 2014 report had provided an overview of relevant studies. In Sweden this list has recently been updated and there were several studies which revealed that crowding causes mortality.

Martin Pastoors thought that the presentation provided an interesting comparison between pelagics and demersals. He pointed out that while the gear is important for selectivity, the equipment used on the bridge is even more important in terms of finding fish and properly identifying it. He said that the PFA uses echo sounders to identify species and sizes and in his opinion this, rather than mesh sizes, was the way forward to increasing selectivity in pelagics.

The chairman added that this had also been the conclusion by the Pelagic AC when developing its discard plan. Improving selectivity in pelagics is not as straightforward as it is in demersals.

Claus Reedtz-Sparrevohn explained that as soon as there is some selection in the codend, this will lead to meshed fish which blocks the net, meaning that the fishing operation has to be terminated. Usually if that happens, mesh size is decreased to avoid such meshed fish.

Christien Absil wanted to know whether it is possible to use mesh sizes that completely prevent such meshed fish.

Claus Reedtz-Sparrevohn replied that meshed fish can be largely avoided using the appropriate mesh size. Usually that is a net with a relatively low mesh size, but not the lowest available.

The chairman recalled that the same discussion took place when the Pelagic AC was developing its discard plan. He moved on to an overarching discussion.

## **7. General discussion and conclusions**

The chairman said that the presentations have been very good and complimentary which allowed to cover a lot of ground. He wanted to know whether people thought that the discussion should be brought forward to the rest of the Pelagic AC and whether people felt that MCRS are a driver for discards. He sometimes got the impression that MCRS increase discards, because only 10% of undersized herring and mackerel are allowed to be used for human consumption. While this does provide some flexibility, it also means that sometimes undersized fish has to be processed into fishmeal even though it is perfectly edible.



Reine Johansson argued for taking the discussion back to the Executive Committee. He said that having MCRS is impossible to explain to other people. It is not a driver for discards, because everything has to be landed, also undersized fish. However, the problem is that fishermen are not allowed to sell the fish for human consumption, even if there is a market for it. He lacked a discussion of this issue in the Scheveningen Group and he wanted it to be on the agenda of the Executive Committee. Even if it is not possible to reach a consensus decision, he wanted to recommend that MCRS and mesh sizes have to be looked at in another way. People had to ask themselves whether MCRS did do anything to protect the stocks. If not, they must be deleted.

Sean O'Donoghue said that the primary question was what to do after this workshop. The reason for having the workshop was because Reine Johansson suggested that having MCRS is not appropriate in light of the landing obligation. Initially the Pelagic AC had recommended to maintain MCRS. In his view today's workshop presented an opportunity to re-evaluate whether keeping MCRS is appropriate or whether they should be deleted or adjusted. He said that a one size fits all approach does not make sense. He also thought that there is merit in Reine Johansson's remarks in relation to some fisheries. For other fleets, however, it might be better to keep MCRS, e.g. for herring in the Irish Sea and Celtic Sea. The Marine Institute Ireland has previously pointed out that there is a possibility of creating a market for juveniles by removing MCRS, which is something the Irish industry does not want. Another issue is the anomaly in MCRS for mackerel and he thought that it was very urgent to sort out this issue. Martin Pastoors has spent a lot of effort on showing that having two different MCRS does not make sense. Dealing with different regional groups did not make tackling the issue any easier. Sean O'Donoghue advocated changing the MCRS in the North Sea to 20 cm given that he was convinced that the NWW group will never agree to changing the MCRS to 30 cm. Especially after today's presentations he thought it was safe to conclude that lowering mesh size to 20 cm did not make any difference in terms of protecting the stock. He also urged to adopt a species by species and area approach when looking at MCRS. He thought there could be merit of removing MCRS in certain fisheries.

Reine Johansson agreed with the comments made by Sean O'Donoghue in regards to adopting a species by species and area approach.

Guus Pastoor said that in his view MCRS are an instrument to manage the stock. The question was whether fishermen would be incentivized to land smaller fish if there was no MCRS. From his experience he could not see any market incentive to catch smaller fish, because smaller fish means lower price.

Sean O'Donoghue said that in principle this conclusion was correct. However, in a situation where people cannot find adult fish there is an incentive to catch juveniles, because otherwise people catch nothing.

Christien Absil understood both arguments and she agreed to adopting a regional and species by species approach. At the same time she highlighted the problem of not having a level playing field if there are different MCRS in different areas and she did not want to go that way. However, she was in favor of having a species by species approach to look whether it makes sense to have MCRS from a conservation point of view.

Ken Haste Andersen wanted to know whether people were not worried about creating a competition that will lead to a race to the bottom.

Reine Johansson said that Christien Absil's remark would have been valid 4 or 5 years ago, but not anymore. The problem today is putting sufficient resources into control and enforcement. He said that there are similar discussions in the Baltic Sea AC with strong opposing views. However, when it comes to herring in the Baltic Sea, then there is no race to the bottom, but the landing obligation makes it necessary to think differently.



Goncalo Carvalho generally opposed abolishing MCRS, but was willing to agree on a case by case approach. Nevertheless, he still required scientific evidence before he could agree to deleting MCRS. He also thought that there are other things that could be explored in relation to métiers and seasons and abolishing MCRS would take away the incentives of exploring other options.

Sean O'Donoghue agreed that a case by case and regional approach was required. In terms of mesh sizes in pelagics he said that he learned nothing new today, because it has already been widely accepted that mesh sizes in pelagics are not a good instrument to manage size selectivity. However, certain fisheries warranted a case by case approach, e.g. mackerel, for which he could not see the rationale of having different MCRS, given that the market took care of the issue. For herring in the Irish Sea and Celtic Sea there was a good reason to keep MCRS. In regards to horse mackerel he said that people needed to have a closer look at it, because there are all sorts of problems with Western horse mackerel. Regarding Southern horse mackerel he thought that a different approach was needed, but said that the Spanish members had to provide advice about their fisheries.

Ken Haste Andersen did not want to argue for or against MCRS, but he said that people should consider that MCRS are used in calculating  $F_{msy}$ . Foregoing this might be against the CFP and also lead to problems with MSC. Therefore, people should take into account the consequences. Reference points are set based on fishing mortality and selectivity. Therefore, if selectivity changes because people abolish MCRS, they might not achieve MSY.

Martin Pastoors disagreed that this was the way ICES used MCRS and Aukje Coers added that by including density dependency the peak in yield would be even higher.

Ken Haste Andersen agreed that that was possible, but he said that including density dependency required more evidence.

Goncalo Carvalho said that in the current CFP there is a clear link between MCRS and conservation that cannot be ignored even if the CFP allowed changing MCRS. He said that all changes had to be well supported. He was less open to removing something, but again, he was willing to look at it on a case by case basis, but he would not support an umbrella advice about MCRS.

Claus Reedtz-Sparrevohn said that selection also differs between fleets and countries. He wanted to know whether this was even considered by the Member States when drafting joint recommendations.

Bent Pallisgaard said that this has not been discussed in relation to pelagics. He pointed out that Norway does not even have MCRS, only minimum catching size.

Bart Adriaenssens said that while changing selectivity of pelagic gears is not always the best thing to do, MCRS also have an impact on moving on provisions. He said that this was related to the Norwegian system of real time closures and he missed in the current discussion the effect of deleting MCRS on moving on provisions.

Sean O'Donoghue saw the moving on provisions more in relation to markets. The industry agreed a few years ago to inform each other about gramme sizes and he argued that even if MCRS were deleted, the fleet would operate in exactly the same fashion it is doing now. Nevertheless, he pointed out that any deletion of MCRS should be evaluated by ICES or STECF. This would also help the NGOs in making a decision.

Martin Pastoors said that ICES provides more ecosystem and stock advice while STECF provides a more integrated advice. When talking about MCRS people had to look at the big picture, including e.g. markets. Therefore, he considered STECF to be the appropriate forum. However, he pointed out that any request for advice had to be very specific. Otherwise, the answer would be too unfocused and not helpful. Generally he thought that it would be difficult to say what number to agree on, because the current MCRS are not based on any real science in the first place.



Bent Pallisgaard said that there had been different MCRS for nephrops in neighboring areas which have recently been harmonized. In general fishermen seem quite happy with the outcome and it can be argued that prior to harmonizing the MCRS there always was a control issue.

The chairman summarized that a number of difficulties in relation to MCRS have been identified and that overall there seems to be a need to scrutinize the numbers. The next question is how far the Pelagic AC should get involved in the discussion. There was agreement that a case by case approach has to be adopted and that any decision has to be based on scientific evidence. He concluded that he will discuss the issue with the Management Team to decide to move on with the discussion and pick it up at the July meeting. He thanked the speakers again for their presentations and all participants for their engagement.

Christien Absil thanked the chairman for organizing the meeting which she considered very valuable. She thought that everybody learns a lot by having meetings such as this.

Claus Reedtz-Sparrevohn had the impression that there is a missing link between maturity and MCRS and how MCRS are linked to maturity. In the future he would like to hear a presentation on that.

## **8. AOB**

There was no other business.

## **9. End of meeting**

The chairman closed the meeting at 16:30.

