SUMARiS Skate and Ray Management Conference 16-17 May 2019

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WP4 Joint cross-border strategy for the management of skates and ray fisheries

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Background

Due to their life history traits skates and rays are considered to be vulnerable to over-exploitation.

77cm
Average length of a mature Thornback ray

7-8 years
Average age at maturity of a Thornback ray

48-74 eggs
Average number of egg cases laid by a single female Thornback ray in a year

≈72%

Of the skates and rays landed in the North Sea and eastern channel are Thornback rays

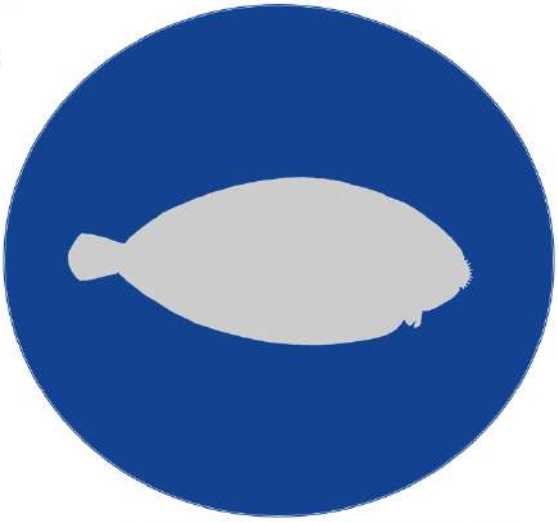
The value of the skate and ray fishery is small when compared to other commercial fisheries in the North Sea.

However this stock can make up to 20% of the annual income of smaller inshore fishing vessels.

The estimated value of the North Sea and Channel Skate and Ray fishery

≈£3,000,000

The estimated value of the Dover Sole fishery in the North Sea (Area 4)

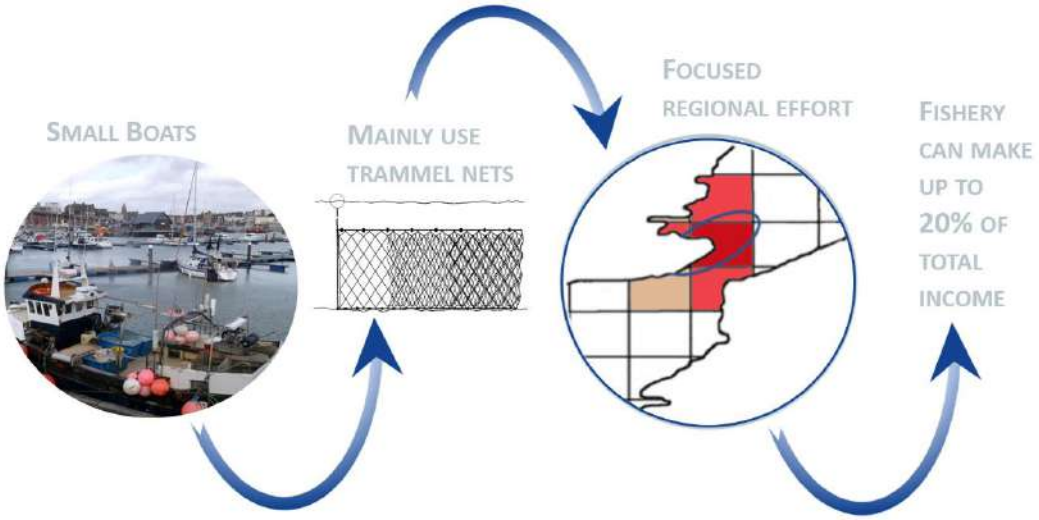


≈£187,000,000

The fishery

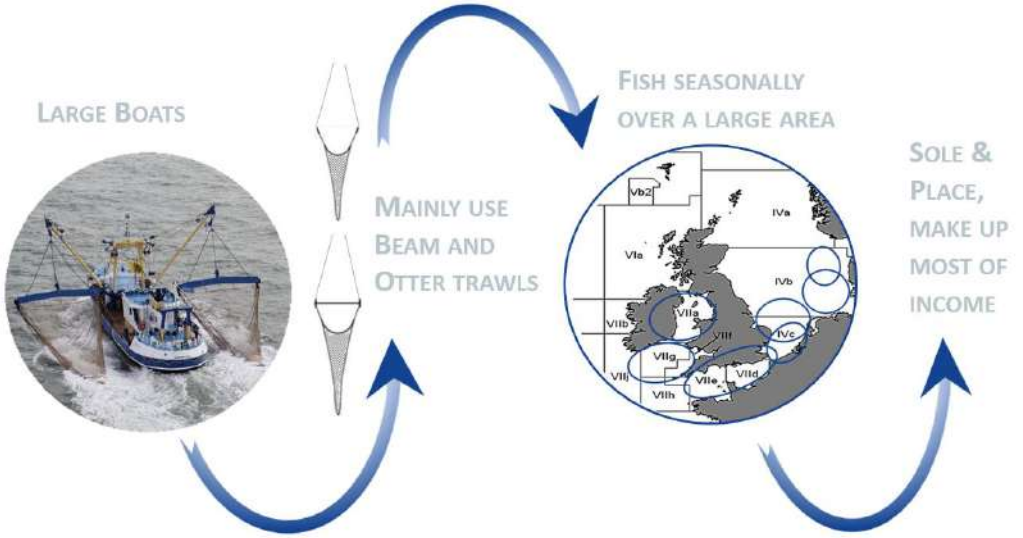
Ramsgate fleet

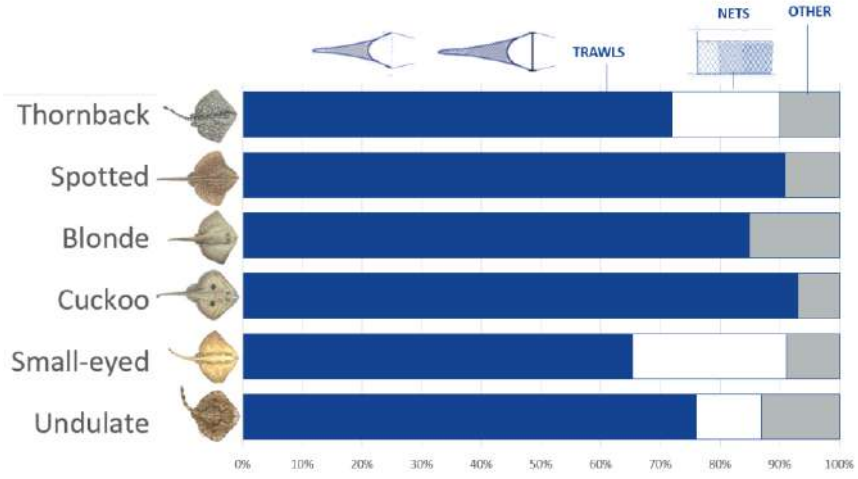
An example of a targeted skate and ray fishery



Belgium fleet

An example of a by-catch skate and ray fishery





65-90%

Of the skates and rays landed are from trawling gear

What's the problem?

Problem 1

"The current general skate and ray TACs may not offer adequate protection for stocks that require reductions in Fishing mortality...

...and conversely, may limit catch opportunities for stocks in good condition."

Scientific, Technical and Economic Committee for Fisheries (STECF) – Long-term management of skates and rays (STECF-17-21).

Problem 2

"Currently significant amount/proportion of Skate and Ray catch are thrown back to the sea dead, this reduces both future breeding stock and future industry earnings."

Scientific, Technical and Economic Committee for Fisheries (STECF) – Long-term management of skates and rays (STECF-17-21).

The full Landing Obligation (discards ban) came into force on 1 January 2019 and now legally requires vessels to land all their catch in an attempt to reduce discarding.

However, Joint Recommendations for a high survivability exemption for skates and rays were submitted in May 2018 and an exemption awarded on a temporary basis until 31 December 2021 (exemption for cuckoo ray until 31 December 2019), conditional on delivery of a roadmap submitted to Commission by the 31 October 2018

Working together to find a solution

*To try and find out a constructive way forward and to resolve these **2** problems we held a meeting on the 16-17th May 2019, with scientists, fishermen, and fisheries managers from England, Wales, France, Belgium, Ireland, Italy and the Netherlands.*

14 *Fishermen and members of the fishing industry*

19 *Scientists*

6 *Fisheries Managers*

8 *Other organisations (Seafish, NGOs, Nausicaá)*

Aims of the meeting

1. *To build relationships and a common understanding of the issues.*
2. *To review the stock and scientific evidence for skates and rays focusing on the Southern North Sea/ English Channel stocks*
3. *To discuss and review **10** possible management options with the aim of identifying options that can be developed by the SUMARiS project*

MANAGEMENT OPTION Flexible Area closures

OPTION DESCRIPTION

- Real-time area closures, which change the size and the area of a closure based on fisheries information, help fishing vessels avoid schools of juvenile fish or highly protected species.
- Catch information is gathered by fishermen or scientists and if high numbers of a specific species or size of species are being caught in an area and a trigger level is reached, the area is then closed for a period of time.
- Either a voluntary approach where operators actively share information or as an EU measure.

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Cod box closures in the North Sea
- GEO FISH - digital platform were policymakers, fishermen, etc can find information such as windfarms, MPAs, nursery farms, but also economical info such as important fish areas.
- Jersey – Undulate ray

GROUP FEEDBACK

ADVANTAGES

✓ Some sharing already occurring at a fishing fleet/ port level.
✓ Technology is now available to help share real-time information.
✓ Sharing data could help develop trust and new working relationships
✓ Collection of accurate data good for multiple reasons – added value.

CHALLENGES

✗ Inshore small-scale fleet significantly impacted as limited fishing grounds.
✗ Significant reluctance from industry to share commercially sensitive information and lack of trust.
✗ Move on rules would be difficult to enforce but self regulation might have low compliance.
✗ Who would own the data and how would it be used?

TYPE OF MANAGEMENT MEASURE Needs to develop an incentive tool. No regulation.

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Would need a lot of persuading.

GOOD — POOR

ENFORCEMENT Vessel tracking could help but would need catch rate information from fishers.

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT 2-3+ years

SHORT — LONG

EVALUATION OF OPTION

OVERALL FEEDBACK

- A good option in theory, but needs a lot of work to actually implement.
- The Irish have developed a real-time spatial incentive model which could be used but would need to run sea trials and develop further.

MANAGEMENT OPTION Fixed Area closures

OPTION DESCRIPTION

- Static or fixed closed areas have been used a lot in fisheries management and usually are created around key spawning or nursery areas identified from survey data or from local fishers knowledge.
- Closed areas can be for a fixed period of time (over a breading season) or all year round and have proved to be successful especially when fishermen support the measure.

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Mackerel/Herring restrictions Ireland
- Channel potting agreement

GROUP FEEDBACK

ADVANTAGES

✓ Important areas reactively well known and consistent.
✓ Cheap
✓ Can make species specific
✓ Can be flexible – different areas at different times of year.
✓ Already happening in some cases
✓ If lacking quota will try to avoid it

CHALLENGES

✗ Inshore small-scale fleet impacted. Cant go anywhere any more.
✗ Could hinder other targeted fisheries
✗ A lot of windfarms and MPAs – another closed area.
✗ How large would the areas need to be?

TYPE OF MANAGEMENT MEASURE Needs to apply equally to all countries in sea area

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Depends level of legislation/ incentive

GOOD — POOR

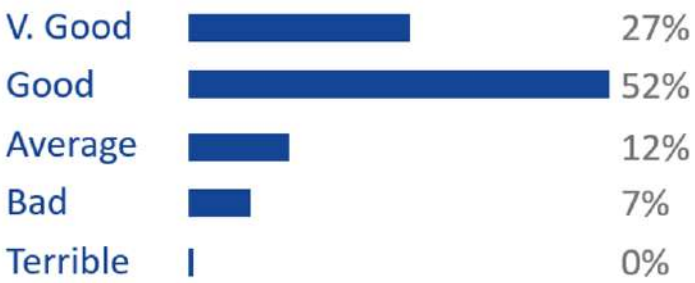
ENFORCEMENT Vessel tracking could help

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT 2-3 years

SHORT — LONG

EVALUATION OF OPTION



OVERALL FEEDBACK

- A good option, especially for offshore boats.
- Worth exploring option further.

MANAGEMENT OPTION Deterrents

OPTION DESCRIPTION

- Elasmobranchs (sharks, skates and rays) biology and behaviour can be distinct form other commercially caught species. Mechanical (lights, magnates) or chemical deterrents could make use of these differences to either deter skates and rays from entering the trawl or to create a behavioural response that would help them escape through a specific panel in the trawl.

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Shark deterrents – Chemicals used in Australia to protect beaches
- Sonar Pinger's on fixed net for deterring mammals/ sea birds

GROUP FEEDBACK

ADVANTAGES

✓ Avoid case of a choke species

✓ Simple to manage (when it works)

✓ Same time on fishing effort

CHALLENGES

✗ More research needed to develop an effective deterrent for skates (if there is one).

✗ Technically challenging/ time consuming – is it worth it?

✗ More research on skate behaviour to advise on deterrents.

✗ Will it work on all gears? Trawls?

✗ Could deter other species of fish.

TYPE OF MANAGEMENT MEASURE Needs to be supported by grant funding

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Would need legislation

GOOD — POOR

ENFORCEMENT Depends on the solution found

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT 3-5+years

SHORT — LONG

EVALUATION OF OPTION

OVERALL FEEDBACK

- Option needs a lot of work before it could become feasible.
- Other options seen as more possible.

MANAGEMENT OPTION More selective gear

OPTION DESCRIPTION

- Technical measures like increased codend mesh sizes and square mesh panels are unfortunately considered ineffective in increasing size selectivity for skates and rays because their body shape prevents escape once inside fishing gears.
- However measures like using sorting grids, By-catch Reduction Devices (BRDs), escape panels, headlines on gillnets and separator trawls could reduce the catch of skates and rays across the whole size range.

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Raised fishery line in whitefish trawls
- Headline in fixed gear
- Sonar pinger's on fixed net for deterring mammals/ sea birds

GROUP FEEDBACK

ADVANTAGES

✓ Without catching you increase survival
✓ Reduced handing of unwanted fish
✓ Solution used in other fisheries and it is understood by the industry
✓ There is a clear route to implementation.
✓ Cluster analysis can help identify which gears and seasons to focus research and management.

CHALLENGES

✗ In most gears rays are not the target species any adaptions could make gear less efficient.
✗ Difficult to design without knowing fish behaviour
✗ Wide range of different gear set-up used in different places. Not one size fits all.
✗ Expensive if need to buy new gear or lose efficiency in catching target species.
✗ Limit to effectiveness of mesh increases due to entanglement

TYPE OF MANAGEMENT MEASURE Needs to be supported by grant funding

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Difficult. For Dutch very unappealing option.

GOOD — POOR

ENFORCEMENT Measure would need to be enforced at sea

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT <1year especially if financial support

SHORT — LONG

EVALUATION OF OPTION

OVERALL FEEDBACK

- Current studies indicate that it is difficult to increase size selectivity for skates and rays but there are a number of gear modifications that have been shown to be effective at reducing their bycatch.
- Irish have made a new better trawl.
- Worth exploring option further.

MANAGEMENT OPTION Change fishing practice

OPTION DESCRIPTION

- Generally fishers looks to catch fish as efficiently as possible, however when a fisher is deciding how, when and for how long gear is deployed for, the health and survivability of the fish caught could also be included in how the gear is used.
- Reducing tow speed and duration or soak time of static gear could have a significant impact in increasing the survival of any fish caught and one would hope, the likelihood of that fish surviving if it was discarded back to sea.

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Belgium coastal plaice fisheries (1h 30 mins max towing time since 1/1/19 - for inshore vessels only small engine size)
- Soak time max some local IFCAs (for some inshore fleets)

GROUP FEEDBACK

ADVANTAGES

✓ Can be introduced quickly no new technology needed
✓ Increase survivorship of fish on deck
✓ Better quality fish
✓ Reduced soak time reduce scavenging and potentially bycatch.

CHALLENGES

✗ Reduce efficiency of fishing operation – more time shooting and hauling gear.
✗ Catches of high value/ low abundance species might be reduced.
✗ Low tow speeds may reduce catch of larger swimming fish.
✗ Low tow speeds could result in gear 'digging in' to sea bed.
✗ Low Different tow speeds for Beam/ otter trawls.

TYPE OF MANAGEMENT MEASURE Needs to be industry lead but fishermen would need an incentive as less efficient.

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Cost of implementation is zero but consequence could be lower earnings

GOOD — POOR

ENFORCEMENT Hard to enforce if legislation as management measure situation specific

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT <1year

SHORT — LONG

EVALUATION OF OPTION

OVERALL FEEDBACK

- Incentive tool – no regulation
- Needs to be lead by the industry difficulty in convincing fishermen
- Worth exploring option further.

MANAGEMENT OPTION Introduce a size restriction

OPTION DESCRIPTION

- Fish below a minimum size are returned to the sea and fish above the size fish are kept. The minimum size can be related to the average breeding size of the species
- A maximum size can also be used, with fish above the maximum size returned to the sea

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Widely used as a simple management measure by commercial and recreational fishers

GROUP FEEDBACK

ADVANTAGES

✓ Fishers generally understand and support MLS
✓ Small fish have less of a market
✓ Cheap and easy to implement
✓ May help re-direct fishing activities from nursery grounds (MLS or aggregations of 'largest' fish (MLL)
✓ Biologically meaningful and need to be tailored to species to be most effective

CHALLENGES

✗ Discard survival of small fish may be low and if so would contradict the landing obligation. Would need a scientific exemption.
✗ Needs demographic analysis with data to evaluate the benefits.
✗ Can be brought in at local/ regional/ international level but have 'level playing field, i.e. same size used across stock range.
✗ If limits set on maximum sizes as generally, larger rays have the highest commercial value

TYPE OF MANAGEMENT MEASURE Already regional English legislation and PO sizes in France, Belgium and Netherlands.

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Need to consult closely with fishing industry.

GOOD — POOR

ENFORCEMENT Straight forward but would need to include measurement for 'wings'

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT <1year
If more evidence needed could take longer.

SHORT — LONG

EVALUATION OF OPTION

OVERALL FEEDBACK

- Management generally supported
- Can build on current regional and PO sizes
- Worth exploring option further.

MANAGEMENT OPTION Change how quota is set

OPTION DESCRIPTION

- Quota or TAC currently combines a number of different skate and ray species in one quota allowance. Rather than a combined TAC, TAC could be set by ICES stocks, by genus, with sub-TACS for particular stocks or by changing the ICES stock areas currently used.

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Widely used as primary management measure for most large EU commercial species in Northern Europe.

GROUP FEEDBACK

ADVANTAGES

✓ Species specific management provides more appropriate protection and harvesting levels

✓ Changing TAC is a common management measure and is relatively simple and cheap to do.

✓ Generates good data at species level.

CHALLENGES

✗ Generalised TAC is simple and no better system agreed but relative stability can make quota reallocation difficult.

✗ Different species have different amounts of information.

✗ If TAC made species specific 5-15 new TACs to discuss, agree, monitor and enforce.

✗ Could create new choke species/ reduce flexibility

✗ Lack of total catch data (landings + dead discards)

✗ Misidentification/ misreporting significant issues

TYPE OF MANAGEMENT MEASURE Already in place

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Need to consult closely with fishing industry.

GOOD — POOR

ENFORCEMENT Already in place

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT < 1year

SHORT — LONG

EVALUATION OF OPTION

OVERALL FEEDBACK

- Although a difficult option to solve this option was strongly supported
- The main challenge is to do it in a way that works for fishers whilst protecting vulnerable stocks
- Worth exploring option further.

MANAGEMENT OPTION Introduce a fishing effort management

OPTION DESCRIPTION

- In a fishing effort management system, fishing is limited by the amount of effort exerted and not by the amount of fish caught. A prerequisite is however that the relation between fishing effort and fishing mortality of a species is known.
- In an effort regulated system the fishing mortality can be, for instance, limited by the number of fishing vessels (expressed as kilowatt or gross tonnage) multiplied by their fishing days deployed.

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Irish Prawn fishery
- Used widely in a number of high value American fisheries

GROUP FEEDBACK

ADVANTAGES

✓ Allows flexibility
✓ Straightforward/ simple system
✓ More effective fishermen are rewarded

CHALLENGES

✗ Difficult when catches fluctuate
✗ Fishing effort is not proportional to fishing mortality due to small scale dynamics
✗ Individual variability (some fishers catch twice as much as others)
✗ Technological creep
✗ Potential management conflicts where skates and rays are managed by effort while other species in the mixed fishery are manged by TACs.
✗ Measuring (and limiting) increase in fishing efficiency is extremely difficult, which possibly renders this measure ineffective in many fisheries.

TYPE OF MANAGEMENT MEASURE Would need EU level legislation

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Would need persuading

GOOD — POOR

ENFORCEMENT Would need vessel tracking on all fishing boats

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT Would need to negotiate a new international agreement.

SHORT — LONG

EVALUATION OF OPTION

OVERALL FEEDBACK

- Would need a lot of work
- Just swap problems
- Other options better.

MANAGEMENT OPTION Prohibition on landing

OPTION DESCRIPTION

- The listing of a species on the prohibited species list means that the species must not be targeted, retained or transhipped. Accidental catch shall not be harmed and individuals should be released as soon as possible.

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Spurdog
- Common Skate

GROUP FEEDBACK

ADVANTAGES

✓ Cheap

✓ Requirement under international law

CHALLENGES

✗ Extreme solution for EU

✗ Fishing How effective is it? Does the problem just go under ground and you lose the data?

✗ Need clear evidence

✗ Species ID important

✗ May close the whole fishery

TYPE OF MANAGEMENT MEASURE Would need EU level legislation

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Would need persuading. Depends on species difficult for spurdog but easlier for whale shark

GOOD — POOR

ENFORCEMENT Potentially easy but it depends on how easy it is to ID species

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT < 1 year, but need evidence

SHORT — LONG

EVALUATION OF OPTION

OVERALL FEEDBACK

- Significant concerns
- Other options better.

MANAGEMENT OPTION Prohibition on landing

OPTION DESCRIPTION

- This management measure would limit the quantity of a (or several) selected stock(s) on a trip by trip basis and is used by fishermen in Belgium and French POs.

EXAMPLES OF THIS OPTION BEING USED IN OTHER FISHERIES

- Tope fishery (45kg per day)
- Allocation of Irish TAC (Monthly quota meeting at which industry participates)

GROUP FEEDBACK

ADVANTAGES

✓ Already being used by some POs. Month limit better than a daily limit.

✓ Select species as required in specific regions

✓ Designed to spread quota

✓ Keeps stock in the hands of smaller operators

CHALLENGES

✗ Can produce discards

✗ Encourages a race to fish

✗ Blunt tool – what if weather is bad the following month

✗ Needs to reflect seasonality (flexible limits)

✗ English <10m already on monthly limits

TYPE OF MANAGEMENT MEASURE Works at present as a PO measure. Might need regulation for wider roll out.

VOLUNTARY — LEGISLATION

INDUSTRY BUY-IN Good but could be an inshore/ Offshore divide

GOOD — POOR

ENFORCEMENT Potentially easy but it depends if run by industry or government

SIMPLE — DIFFICULT

LENGTH OF TIME TO IMPLEMENT < 1 year. Some already in place. Can be introduced quickly.

SHORT — LONG

EVALUATION OF OPTION

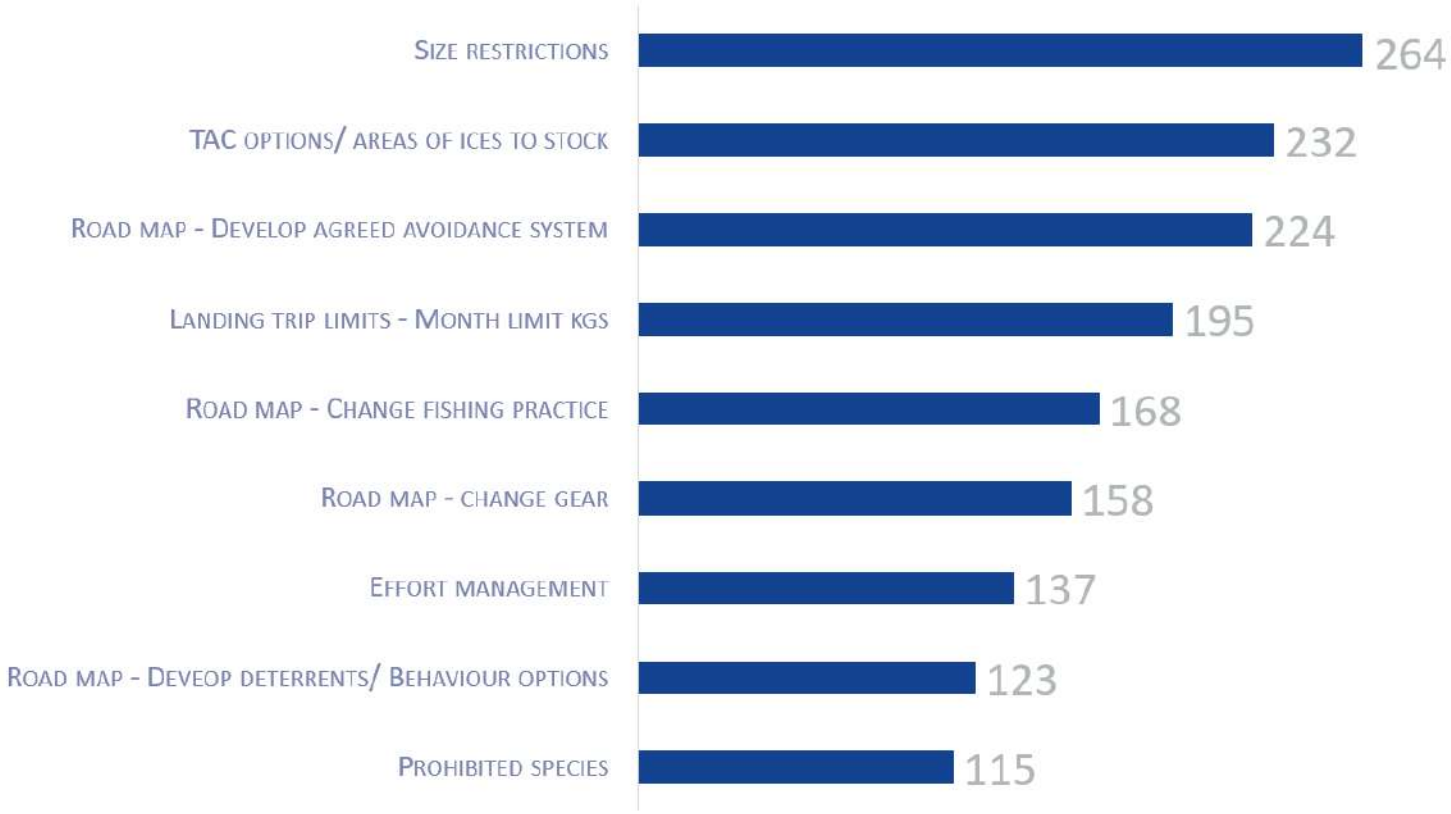
OVERALL FEEDBACK

- Some potential in idea
- Depends on how different fleets are managed
- Idea could be worth developing further

What is the solution?

Ranking all the options

*No **ONE** solution can solve the problems*



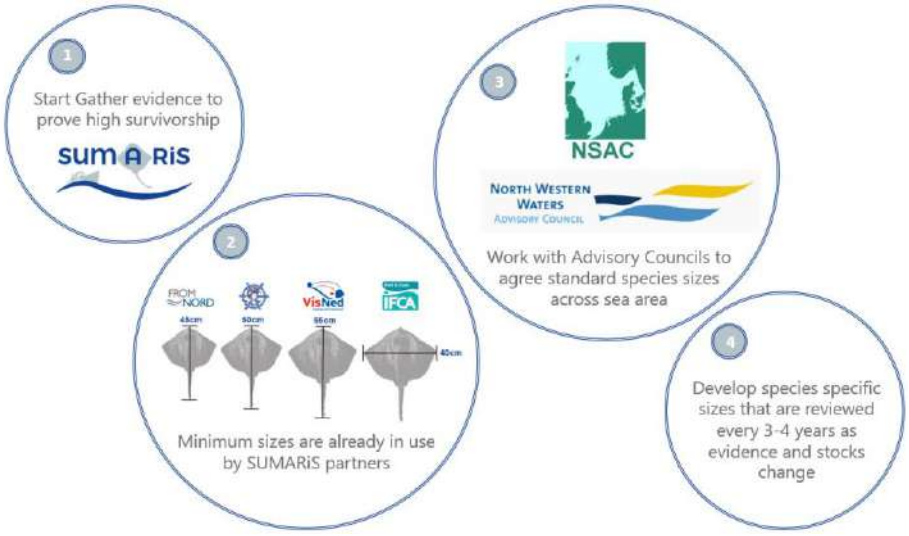
*Need to develop a **multi-track approach** and develop several management options that combine to give adequate protection to the stocks whilst optimising fishing opportunities.*

*Next, we need to work with partners and stakeholders to develop the best options further and start developing a **package** of detailed proposals.*

What are the next steps?

Change how quota is set

Develop a standard minimum size



Develop information to help fishers avoid hotspots