Allocating fishing opportunities with environmental, social, and economic criteria in mind

Examples from the EU Member States

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Fishing opportunities ('who is allowed to fish') can come in several forms and are often a privilege granted to individuals or groups of individuals when access to fishing is restricted[1]. Allocation of fishing opportunities is central to fisheries management, and if well-designed, it ensures sustainable fishing practices, prevents overfishing, and balances ecological and economic considerations.

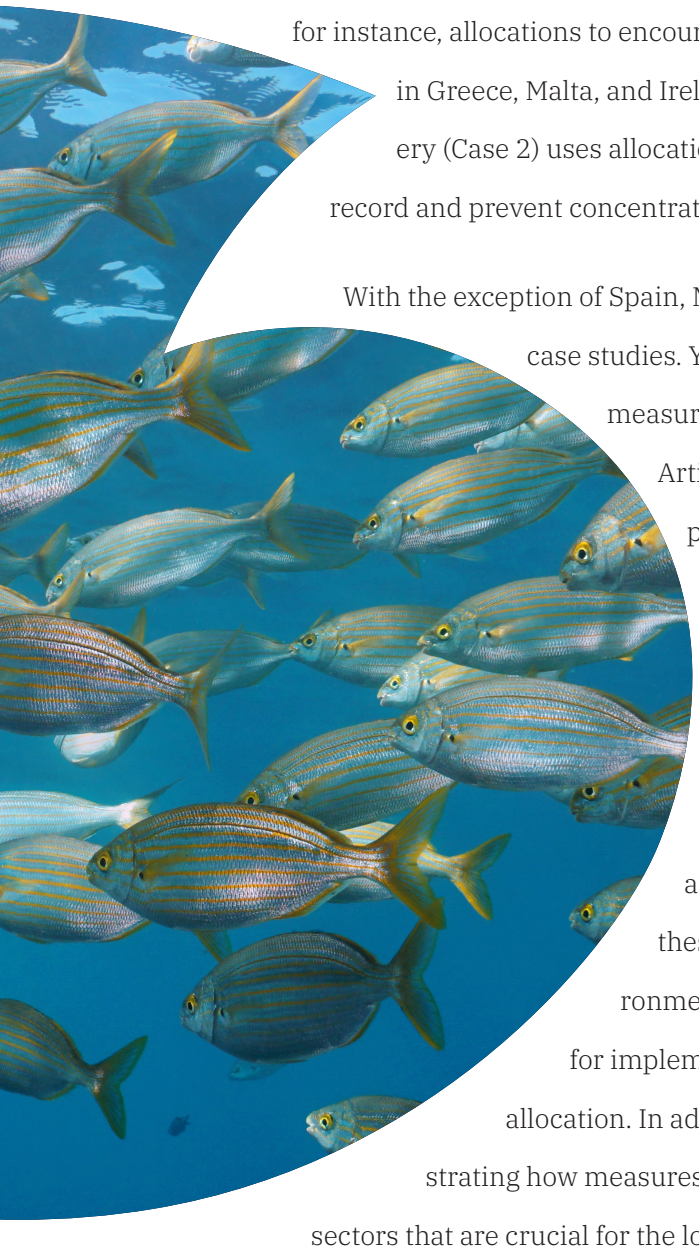
The EU provides guidance on how Member States allocate fishing opportunities to their fleets. However, Member States decide for themselves how fishing opportunities are allocated to their fishing fleets (according to Article 16). The EU guidance for allocation is established in the common fisheries policy (Regulation (EU) No 1380/2013) Article 17: governments shall use 'transparent and objective criteria including those of an environmental, social and economic nature.' To date, there has been limited implementation of Article 17 in most Member States[2]. Commonly, there are gaps in transparency in how fishing opportunities are allocated, and allocation practices rarely deviate from the standard allocation based on historical catch records.

Article 17 offers unique opportunities for Member States to advance from the principle of allocations based on fishing history – often associated with unjust or unsustainable allocation. It also offers small-scale and artisanal fleet organizations opportunities to address their states' allocation policies. Ten years after the last common fisheries policy reform was enacted, we take stock of Member States' good practices in the implementation of Article 17.

Good practices

This report is comprised of successful case studies of the use of Article 17, or allocation policies otherwise in line with Article 17 objectives, and is meant to inspire the EU Commission and Member States on possible (re-) allocation methods and encourage fishing organizations to push for such changes. It showcases ten cases of 'good practices' of Article 17 implementation with regard to fishing opportunity allocations in nine Member States (summary in Table A).

Countries are aiming to preserve the small-scale fleet and thus prioritize low-impact gears for some percentage of the allocation, which often is aligned with a more labour-intensive fishery with cultural and socio-economic relevance for rural areas (Cases 1, 4, 5, 6, 7, 8, 9, 10). Those allocations often combine vessel length requirements with the requirement to use passive gears. Other noteworthy cases aligned with Article 17 are, for instance, allocations to encourage new entry of young fishers, as demonstrated in the cases in Greece, Malta, and Ireland (cases 4, 5, and 8, social criterion). The Spanish hake fishery (Case 2) uses allocation methods that allocate more by equal share rather than track record and prevent concentration of quota.



With the exception of Spain, Malta, and Ireland, Article 17 is rarely explicitly invoked in the case studies. Yet, governments have made exemptions and implemented measures that align quota allocation with the objectives formulated in Article 17, such as safeguarding small-scale fleets and promoting passive gear. While these cases often involve small percentages of the total quota (Article 17 does not determine the weight states attributed to the environmental, social and economic criteria), the impact is meaningful for small-scale fleets and the economic sectors dependent on them, especially in the case of valuable species. It is unlikely that the small percentages of the total quota allocated to the fisheries discussed in these cases will have a significant overall impact from an environmental perspective. However, these cases can serve as examples for implementing environmental, social and economic criteria in quota allocation. In addition, they illustrate the co-benefits, for example, by demonstrating how measures can simultaneously reduce juvenile catches and safeguard sectors that are crucial for the local, often rural, economy (see e.g. Case 1 in Spain).

Table A. Summary of good practice case studies

Case	Member State	Fishery	Criterion	Good practice description
1	Spain	Big eye tuna	Environmental	Increased quota allocation for fleet segments with less catches of undersized fish.
2	Spain	Bottom long-line and gillnets hake fishery	Social	Part of the allocation criteria explicitly aims to maximise employment in the fishery.
3	Portugal	Undulate ray fishery	Social	Experimental fishing licenses are allocated preferentially to small-scale fishers on an annual basis.
4	Greece	Bluefin tuna fishery	Social and Environmental	Allocation of several licences for bluefin tuna each year according to social criteria, including e.g. small island residency, and crews with less than four people.
5	Malta	Bluefin tuna fishery	Social and Environmental	A large extent of the allocation goes to small-scale fleets with passive gears. In addition, young fishers receive a share of the allocation.
6	Denmark	Multi-species fishery	Social and Environmental	There is a temporary and a permanent scheme to preserve small-scale fishing, which get a quota top-up. The top-up is higher for the permanent scheme and passive gears.
7	Germany	Coastal herring fishery	Social	The coastal, small-scale fleet is an exception and allowed to continue fishing for herring with passive gear.
8	Ireland	Coastal multi-species fishery	Social and Environmental	There are several schemes to allow small-scale fishers to participate, even if they have not built up a track record in those fisheries.
9	Sweden	Scampi fishery	Social and Environmental	Several policies encourage shifting quota allocations and fishing access rights from active trawling to passive and small-scale creel fishery.
10	France	Bluefin tuna	Social	A small share of the quota is allocated based on social criteria for small-scale fishing.

Introduction

Fishing opportunities (who is allowed to fish) can take several forms and are often a privilege granted to individuals or groups of individuals, provided that catches of certain fish are restricted[3].

Two broad categories of restricting fishers' captures and their related fishing opportunities are effort restrictions, where fishing opportunity is in the form of, for instance, a fishing license, and quota restrictions, where a total allowable catch is often divided among fishers or fleet segments. Fishing restrictions are determined based on scientific assessments of fish populations and various political considerations. The allocation process to individual fishers may consider various factors, including historical catch records, adherence to conservation measures, and the socio-economic impact on fishing communities. The concept is central to fisheries management and is designed to ensure sustainable fishing practices, prevent overfishing, and balance ecological and economic considerations.

The EU only provides guidance on how Member States allocate fishing opportunities nationally. Member States, however, decide themselves how fishing opportunities are allocated to their fishing fleets (according to Article 16). Article 17, however, states that governments shall use 'transparent and objective criteria including those of an environmental, social and economic nature.' (Appendix A). The article also states that such criteria may include the impact of fishing on the environment, history of compliance, contribution to the local economy, and historic catch levels.

Article 17 has been implemented in a very limited fashion in most member states[4]. Most member states lack transparency regarding the allocation of fishing opportunities and rarely deviate from standard practices such as allocation based on historical track records.

However, Article 17 offers great opportunities for member states to deviate from historical and unjust allocation practices. Article 17 also offers opportunities for small-scale and artisanal fleet organizations to address their states' allocation policies. This report of successful case studies of the use of Article 17, or allocation policies otherwise in line with Article 17 objectives, is meant to inspire member states on possible (re-)allocation methods and could encourage fishing organizations to push for such changes.

Here, we present 10 cases of 'good practices' with regard to fishing opportunity allocations in 9 member states that are in line with the dimensions of Article 17. Each case contains a detailed case description, including environmental, social, and economic criteria used and transparency, objectivity, and success factors that led to the success or implementation of the policy, if found.

Disclaimer regarding fisheries management challenges

Successful fisheries and fisheries management depend on a variety of factors and measures and are subject to fluctuations and changes over time. For the purpose of this report, we are focusing on the allocation of fishing opportunities according to the common fisheries policy (Regulation (EU) No 1380/2013) Article 17, not fisheries management broadly. There is limited implementation of Article 17 across the EU and an entire lack of implementation in some Member States. Consequently, the good practices cases presented here are examples of allocations which make partial use of environmental, social and/or economic criteria, but which may face significant challenges in other dimensions of fisheries management. Examples of challenges include bycatch in multi-species fisheries with vulnerable conservation status and overfishing. Overfishing is prohibited by the common fisheries policy but may occur from management failures as well as due to uncertainties in population assessments. Two cases in the report have clear issues from an environmental perspective. These include case 3 (Portugal), which describes a targeted fishery on an endangered species, and case 7 (Germany), which describes a fishery on a collapsed population. These cases were selected for their performance on the social dimension, highlighting the importance of considering allocation of fishing opportunities within the broader context of evolving practices and on-going efforts to enhance fishery sustainability.

Background

Article 17 of the common fisheries policy (CFP) was enacted in 2013 but has seen limited implementation and acknowledgment in the EU and Member State legal landscape, policies, and fisheries management in the past decade. In a few instances, Article 17 has been explicitly invoked. One notable example is a lawsuit instigated by the Low Impact Fishers of Europe (LIFE) in collaboration with other organizations, challenging the French allocation of bluefin tuna (Thunnus thynnus)[5]. The EU Parliament requested Member States to share information on their methodologies for determining fishing opportunity allocations. In addition, the Scientific, Technical and Economic Committee for Fisheries, advising the EU Commission, presented a report[6] discussing the implementation of the social dimensions of the CFP. A LIFE and OurFish report[7] highlighted low impact fishing opportunities. These reports were illustrated by a few case studies, such as Denmark's quota swapping and the transparency of the Belgian system. Despite these efforts, comprehensive reporting on good practices in applying Article 17 remains scarce.

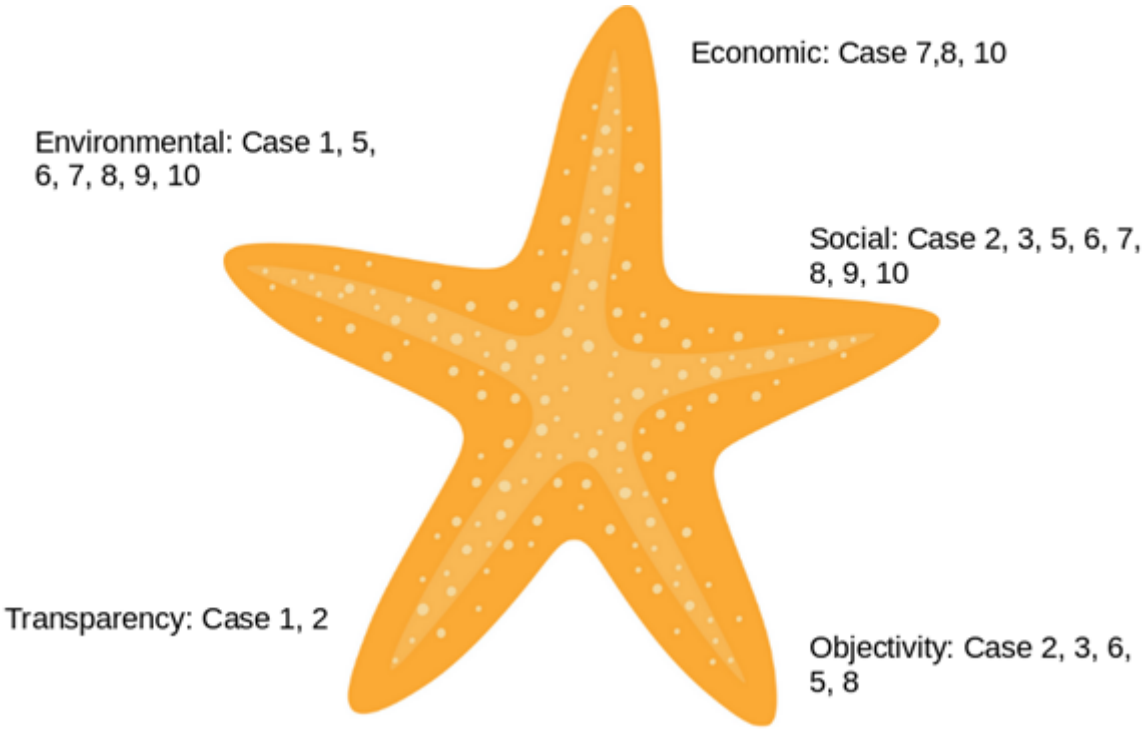
The application of (exclusively) historical track records, has faced criticism, particularly for providing an unfair advantage to companies with extensive fishing histories and, at times, incentivising more aggressive fishing. For example, in the case of bluefin tuna fishing in Spain, historical track records were employed during a period when the population was overfished, and small-scale fishers faced constraints on their fishing activities[8]. Therefore, we focus on cases that use criteria beyond historical track records.

Good practice cases

We identified ten cases in nine member states that feature good practices in implementing measures in agreement with the objectives of Article 17. Most good practices were related to the social criterion or a combination of social and environmental criteria (Figure 1 and Table 1).

For instance, countries are aiming to preserve the small-scale fleet and thus prioritize low-impact gears for some percentage of the allocation, which often is aligned with a more labour-intensive fishery with cultural and socio-economic relevance for rural areas (Cases 1, 4, 5, 6, 7, 8, 9, 10). Those allocations often combine vessel length requirements with the requirement to use passive gears. Other interesting cases that are aligned with Article 17 are, for instance, allocations to encourage new entry of young fishers, as seen in the cases in Greece, Malta, and Ireland (cases 4, 5, and 8, social criterion). Case 2 (Spain, hake) uses allocation methods that allocate more by equal share rather than track record and prevent concentration of quota. Relatively many cases concern tuna allocations after population rebuilding (Cases 1, 4, 5, 10), which may have several causes. First, tuna is often managed by quota, even in countries with mainly effort management (see e.g. Case 5). Second, tuna is high value, and thus, there is often an incentive for small-scale fisheries organisations to push for allocations to their sector as well. Third, population rebuilding and Total Allowable Catch (TAC) increases may provide some room to deviate from previous policies[9][10].

Figure 1. Good practice cases according to environmental, social, transparency and objectivity criteria, no cases clearly distinguished themselves clearly using economic criteria.[11]



Spain has two recent cases (only one is presented in this report, case 1, case 2 is an older case) where Article 17 is explicitly invoked[12]. Other countries that we found referring to Article 17 in government outputs are Malta, Ireland, and Sweden. The French rule on how to allocate quota from the national reserve (see case 10) is well-aligned with Article 17 criteria. However, it is formulated in the same way as the original in the CFP, which means that several common practices of allocation could be considered in line with social or economic criteria (e.g. historical allocation for the sake of stability or economic efficiency)[13]. Moreover, neither article dictates any weight that needs to be attributed to any of the criteria.

Overall, percentages of quota or other fishing opportunities allocated according to Article 17 criteria remain small in most cases. Future studies could focus on the impact of these allocations on the aims that they are trying to achieve. A small additional allocation can be meaningful for the small-scale fishing sector, especially for high-value allocations such as (bluefin) tuna. Additionally, an assessment of the environmental impact potentially caused by the shifts of some of these allocations will be of interest as well.

It also needs to be noted that in some cases, we can only assess the allocation rules, but allocation outcomes are often not available for researchers. If, for instance, allocations are explicitly done to vessels with passive gears for environmental reasons, care needs to be taken that these quotas are not leased to vessels with active gears (e.g. small-scale bluefin tuna quota in Malta were frequently leased out to purse seiners[14]). In the case of allocations based on a social criterion, other considerations may include allocating quota to smaller vessels owned by larger cooperations, as observed in the case with bluefin tuna in France[15].

Each case study is presented in more detail in this report. The case studies first present an overview table with some details about the fishery and its management system. The table also describes briefly how the case meets the Article 17 social, economic and environmental criteria, as well as the criteria of transparency and objectivity. Below the table, a narrative gives more details about the fishery, its allocation practices, and what elements could be considered 'good practice'.

Table 1. Summary of good practice case studies

NR	Member State	Fishery	Criterion	Good practice description
1	**Spain**	**Big eye tuna**	Environ-mental	A share of quota is allocated based on length distribution of catches, with higher quota for fleet segments with less catches of undersized fish. This means that the more targeted pole and line segment of the fleet, as opposed to freezer trawlers, has a slight increase in their fishing opportunities.
2	**Spain**	**Bottom longline and gillnets hake fishery**	Social	The allocation practice largely secures an equitable distribution of quota between the vessels, with allocation being largely based on equal amounts given to vessels.
3	**Portugal**	**Undulate ray fishery**	Social	Experimental fishing licenses are assigned to small-scale fishers on an annual basis, as this was an important fishery for them. Currently, more licenses are attributed to harbours with a higher track record of skates' landings.
4	**Greece**	**Bluefin tuna fishery**	Social and environ-mental	Greece allocates several licences for bluefin tuna each year according to the social criterion. Allocation criteria include small island residency, presence of minor children or children with disabilities in the family of the fisher, and crews with less than four people.
5	**Malta**	**Bluefin tuna fishery**	Social and environ-mental	A significant proportion of Malta's allocation of bluefin tuna goes to its small-scale fleet. In addition, young fishers receive a percentage of the quota. Additionally, a share of the quota was recently reserved for vessels that had not participated in the fishery before, thus enabling these vessels to benefit from this fishing opportunity as well.
6	**Denmark**	**Multi-species fishery**	Social and environ-mental	Denmark has two schemes to preserve small-scale fishing. One open and temporary (3 years), the other permanent. Joining the open system means vessel owners can't sell quota to the large-scale fleet (LSF) during enrolment. For the permanently joining vessels, they will not be able to sell their quota to the LSF. The quota top-up is significantly larger for vessels joining the permanent system. Within these schemes there are larger allocations for vessels with low impact gears.
7	**Germany**	**Coastal herring fishery**	Social	Germany provided several exemptions for the coastal fleet to continue fishing for herring. A closure was instigated in the western Baltic Sea for fishing vessels longer than 8 meter or 8-12 meter with active gear, providing exceptions to the smallest fleet and the fleet fishing with passive gear.
8	**Ireland**	**Coastal multi-species fishery**	Social, economic and environmental	Ireland implemented various schemes to sustain a flourishing coastal economy in its harbours. Quotas are distributed based on both social and environmental criteria. For instance, they promote the involvement of young fishers by reserving specific quotas for those without established track records, and by favouring fisheries that use low-impact gear.
9	**Sweden**	**Scampi fishery**	Social and environ-mental	Sweden implemented several policies for the nephrops fishery to shift allocations and access from active trawling to passive and small-scale creel fishery. Multiple fisheries management decisions aim at reducing bycatch of other species, such as cod. e.g. fishers who opted to use the Swedish grid were exempted from effort restrictions due to documented low cod bycatches.
10	France	Bluefin tuna	Social	In France some share of the quota is allocated based on the social criterion to small-scale fishing.

Spain

Case 1: Spanish Bigeye tuna (Thunnus obesus) fishery

Member state	Spain
Fisheries management system	Large freezer vessels and large vessels fishing from Dakar under the Spanish flag, are managed through individual quota. Co-management of individual quota is optional for these vessels. Other fleet segments have shares of the TAC that are allocated to groups of vessels as total quota pools.
Allocation process	Largely based on catch history, some on environmental (5% to more selective gear) and social criterion (1% to small scale (<15m and use of certain passive gears (e.g. lines) or small purse seines)).
Social criteria	1% allocation to artisanal coastal fleet. Moreover, the reliance on bigeye tuna versus other fisheries is weighed in. For the freezer trawler fleet and the other large vessels fishing from Dakar, 10% of individual allocation is related to employment provided by the vessels.
Economic criteria	No specific economic criterion seems to be used, apart from fishing history, relative dependence on the fishery, and employment. The latter two constitute more social criteria.
Environmental criteria	Length distribution of fish, with proportionally less quota for fleet segments that catch more juvenile fish.
Objectivity	Length-based criterion is objective as it is quantifiable (However, the authors of this report found cut-off value for when a fish is found too small, or for the precise rule for allocation). The artisanal criterion is also objective. The catch history criterion, likewise, is also objective and fully quantifiable.
Transparency	The criteria are well described and follow recommendations from CFP and ICCAT. The allocation outcomes are also available on the government gazette.
Key implementation success factors	Synergy between ICCAT recommendation to reduce catches of small bigeye tuna and the CFP guidance on implementing criteria-based allocation, including environmental criteria.

Description of fishery

The bigeye tuna (Thunnus obesus) is a species of tropical tuna widely distributed in the Atlantic Ocean. Bigeye tuna is valuable and often preferred over yellowfin due to its higher fat content[16]. It is targeted and caught as bycatch by various fleets, and it is mostly associated with other tropical tunas such as yellowfin tuna (Thunnus albacares) and skipjack tuna (Katsuwonus pelamis). The Atlantic Bigeye tuna population is in an overfished state (biomass) but is currently, legally speaking, not subject to overfishing (i.e. fishing mortality is low enough so that it allows for rebuilding).[17]

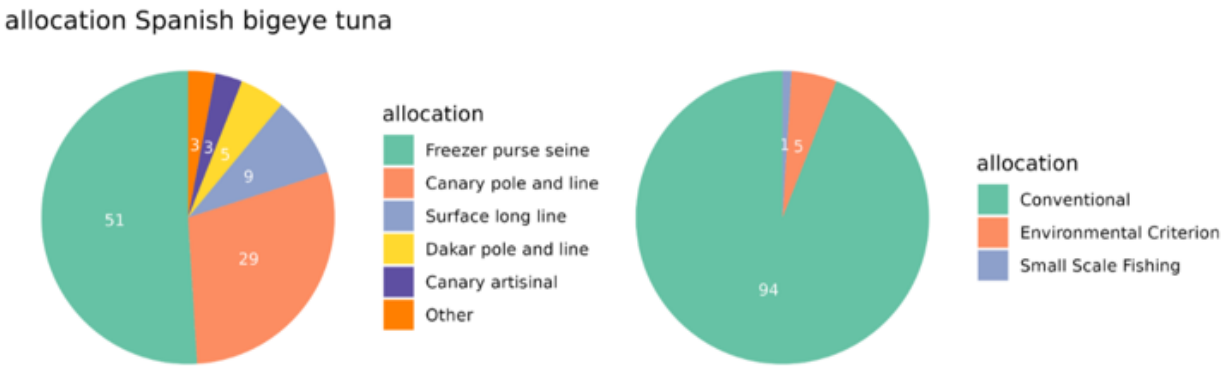
The Spanish fishery for bigeye tuna is a transboundary fishery, with vessels fishing from mainland Spain, Canary Islands, and Dakar in Senegal. Spain is one of several countries fishing the bigeye tuna in the Atlantic Ocean. The International Commission for the Conservation of Atlantic Tunas (ICCAT) is responsible for its population assessments and management plans, which include the size of the total allowable catch and the share allocated to each nation.

ICCAT Recommendation 19-02 establishes a multi-annual conservation and management program for tropical tunas. This Recommendation establishes bigeye quotas for the different contracting parties of the ICCAT and the European Union in particular.

Quota allocation

The Tuna freezer seiners currently get most of the quota (50.5%), while the Canarian pole and line vessels targeting tuna also get a significant portion (29%) (Figure 1). The Tuna freezer seiners catch more younger/smaller-size fish than the pole and line vessels, which are more selective[1819]. High exploitation rates for immature fish can reduce the population size and result in negative economic implications due to their lower value[20]. Fisheries that catch a large proportion of small-sized fish may also have incentives for discarding, which constitute a wasteful practice that may add to the fishing pressure[21].

Figure 2. Allocation of Spanish bigeye tuna quota according to fleet segment (left and conventional versus Article 17 criteria (right). Percentages are rounded.



Good practice

Spanish fishing law establishes criteria for the distribution of fishing opportunities between vessels or groups of vessels usual in the fishery. These criteria rely largely on historical catches of the fishery. In the bigeye tuna fishery, 94% of quota in 2020 was allocated based on conventional metrics used by the Spanish government. Of the 94%, 85% were indeed allocated based on catches between 2014-2018, and the remaining 15% were allocated based on the percentage of bigeye tuna catches compared to other catches of the fleet segments[22]. Only the larger vessels are managed by individual quota, for which a social criterion is considered. 10% of those individual allocations are based on employment data per vessel, including labour conditions (the exact rule for calculation is not provided, however).

Next to those conventional criteria that are applied in multiple fisheries in Spain, this fishery also has an added environmental criterion for allocation, explicitly in line with Article 17. According to Order APA/372/2020 of the Spanish Ministry of Agriculture and Fisheries[23], to reduce the catch of juvenile bigeye tuna, as set out in ICCAT Recommendation 19-02[24], an environmental criterion is applied by which 5% of Spain's total bigeye tuna quota is distributed among the fleets that have less impact on the catch of small-sized bigeye (Figure 1). This criterion is based on the average catch size of each fish and means proportionally increasing the fishing opportunities of fleets other than freezer tuna seiners. Average weight of tuna caught by longline can be around 9 times as heavy as those of purse seiners, which catch a large share of juveniles.[2526]

Moreover, Article 6 of ICCAT Recommendation 19-02[27] calls for special consideration to be given to the needs and specificities of small-scale artisanal fishers. Based on these guidelines, 1% of Spain's quota for Bigeye tuna is also reserved to increase the fishing possibilities of small-scale vessels in the Canary Islands (bringing them to a total of 3% of the allocation in 2020), which is a largely artisanal fleet with small vessels that operate in the coastal area (small scale fleet defined as <15 m. length and passive gears).[2829]

Key success factors in implementation

A driving factor in the application of the environmental criterion appears to be the recommendation from ICCAT to reduce catches of smaller-sized fish and to consider the small-scale fleet when allocating quota[30]. The order also makes explicit reference to Article 17 of CFP in its decision to apply the environmental criterion in 5% of quota allocation; the policy thus appears to be a synergy between the ICCAT recommendation to reduce catches of undersized tuna and the CFP article that encourages use of an environmental criterion in quota allocation.

Case 2: Hake (Merluccius merluccius) by bottom longline and gillnets

Member state	**Spain**
Fisheries management system	Individual quota, with the possibility to pool quota in collectives.
Allocation process	50% 'linear' (i.e. equal allocation to each vessel), 25% allocation based on catch history, 25% based on the number of crew.
Social criteria	The allocation strives to have equal allocations and maximise employment in the fishery. Several restrictions on transfers and a maximum difference of 4 tonnes of quota between any vessel limit prevent the concentration of fishing opportunities.
Economic criteria	No specific economic criterion seems to be used, apart from fishing history and employment. The latter constitutes a more social criterion.
Environmental criteria	Not mentioned.
Objectivity	All criteria are measurable and applied objectively.
Transparency	Criteria, along with all allocation outcomes, are published in the government gazette.

Description of the fishery

Longlines are widely used to target various demersal fish species in Spain, with the southern European hake being the most economically important of those[31]. Along the north coast of Spain, there is an important hake fishery using longlines and gillnets. Most of the southern hake population is harvested by trawlers in northern Spain[32], while longlines obtain slightly higher prices[33] and have lower carbon footprints[34]. Spanish longliners are, on average, 16 meters long, and Spanish gillnetters are, on average, 18 meters long[35].

Southern European hake (Merluccius merluccius) is predominantly fished by Spain accounting for roughly 70% of the catches in recent years. Catches of the population have been decreasing in recent years, as has fishing mortality, while spawning population biomass has been increasing[36]. Total catches for the population amount to around 10,000 tonnes annually in the last few years[37]. Following several years of low TAC due to ICES's precautionary approach, the TAC was increased to the benefit of the 1200 trawlers, longliners, gillnetters, and small vessels fishing for this population (mainly in northern Spain)[38].

Quota allocation

Quotas are allocated to vessels individually. Only 25% of quota was allocated based on historical catches over 2002-2011, since allocation was done in November 2015[39]. Additional quota allocation methods are designed for an equitable distribution between vessels and to maximise employment, as described in the good practice paragraphs below (Figure 3).

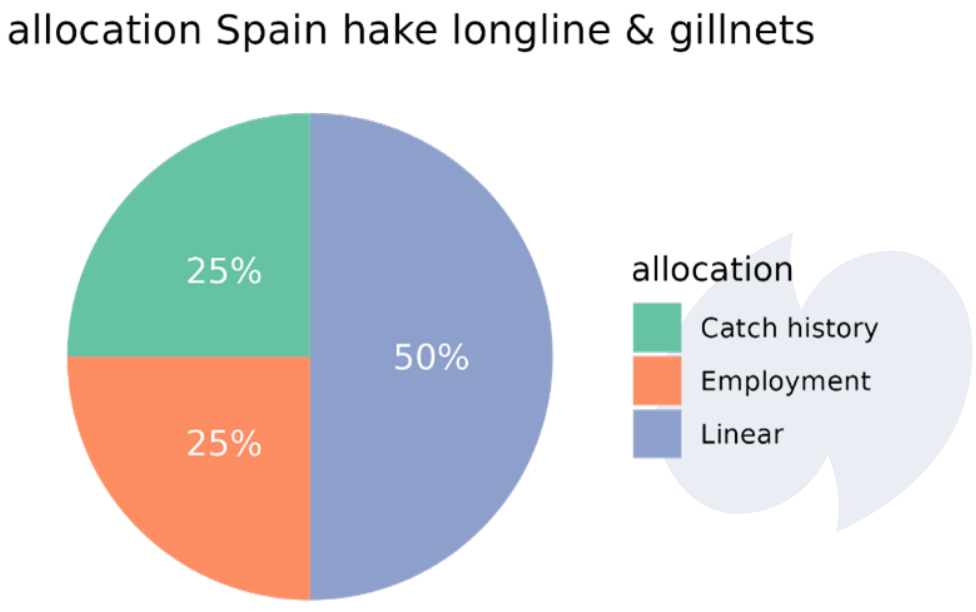
Good practice

For hake fished by bottom longline and gillnets, quota allocation is carried out in alignment with the social criteria of the CFP Article 17. The allocation is primarily based on equal distribution among vessels (50%) (Figure 3). Additionally, 25% of the quota is allocated proportionally to the number of crew members of the vessel. Transfers of quota are not technically allowed, except in the case when a vessel sinks, for instance. Yet, even in such cases, strict conditions apply.

If vessels have not utilized their assigned quota, for instance, because they have not registered themselves for the fishing season, quota will be distributed evenly amongst the other vessels in the longline and gillnet fishery for hake. Similarly, if vessels are scrapped, quota will be redistributed in the following year among the remaining active vessels in this fleet segment, unless owners register the construction of a new vessel.

The allocated quotas are published yearly on the state gazette[40], which, in addition to the clearly defined allocation rules, contributes to the transparency of the allocation.

Figure 3. Allocation of Spanish hake quota according to allocation criteria in the Spanish longline and gillnet fishery.



Portugal

Case 3: Undulate ray (Raja undulata) in Portugal

Disclaimer: Portugal negotiated a 50-tonnes research quota in addition to its allocated TAC in 2024. This constitutes a significant additional quota, particularly if it was solely designated for research purposes (however, it still represents only a small fraction of the entire EU quota)[41], especially considering that the undulate ray is an endangered and slow-growing species, with an uncertain population status and high bycatch rates[42].

Researchers and conservation organizations in Portugal have argued that, moving forward, the catch of the protected species must be discouraged. Additionally, the focus of the management should be focused on research and identification of measures that effectively reduce the bycatch of undulate ray and other sensitive species. Conservation groups also expect that the implementation of the revised control regulation will result in better data and better enforcement of existing rules.

Member state	Portugal
Fisheries management system	Precautionary quota in the form of a total allowable catch and effort restrictions (maximum catches per trip). Fishery is closed when TAC is reached. Other technical restrictions include minimum and maximum landing sizes.
Allocation process	A small allocation is granted based on the condition that fishers cooperate with the research and use small-scale vessels. Vessels that do not fall into this category can land undulate ray as bycatch only if it comprises not more than 5% of the catch. Small-scale vessels, both historically and presently, account for 95% of undulate ray. Experimental fishing licenses are assigned to fishers on an annual basis. Vessels with special license permits can catch up to 30 kg of undulate ray per trip, whilst those without a license can land one undulate ray per trip. More licenses are attributed to harbours with a higher track record of skates' landings.
Social criteria	Preferential treatment for small-scale fishers (polyvalent small-scale local and local, <9 m) due to the socio-economic importance of the undulate ray for them.
Economic criteria	None found.
Environmental criteria	None found.
Objectivity	The criteria regarding who can apply for a license are very clear. Criteria for licenses are published on the government website. Allocation outcomes are only shared upon request.
Transparency	Criteria for licenses are published on the government website. Allocation outcomes are only shared upon request.
Key implementation success factors	Contestation of EU policy by fisher' associations, collaboration between fisheries institute and fishers.

Description of fishery

In early 2009, the EU, recognizing the insufficient understanding of ray exploitation and vulnerability to fishing, introduced a Total Allowable Catch (TAC) and imposed restrictions on capturing specific species of ray[43]. This included the economically and socially significant but endangered *Raja undulata* (undulate ray) for the Portuguese local fleet. Additional management measures, such as a closed season and a minimum landing size, were implemented by the Portuguese Government[44]. Moreover, capturing Raja species and Leucoraja species was restricted from May to June, allowing only incidental catch up to 5% of the total catch. Small-scale fishers expressed discontent, contending that the regulations were imposed without considering their local knowledge[45]. As these fishers believed, this was an abundant species in Portuguese waters[46]. However, questions have also been raised about the local knowledge of the Portuguese fishers, as fishers tended to frequently misidentify species when asked[47].

The top-down management approach at the national level underscored the challenge of integrating fisher's knowledge and participation in the policymaking process[48]. In response to the concerns of small-scale fishers, a collaboration was initiated between the Portuguese Institute for Fisheries Research and small-scale fishers, where a small fishery for undulate ray is conducted.

Licence allocation

Experimental fishing licences are assigned to fishers on an annual basis. Vessels with special license permits can catch up to 30 kg of undulate ray per trip, whilst those without a license can land one undulate ray per trip. Currently, more licenses are attributed to harbours with a higher track record of skates' landings, thus historical allocation plays a role. A total of around 60 licenses have been allocated in recent years. It seems that much fewer than the 60 licenses end up fishing all the TAC (i.e. the recent closure of the fishery for the year 2023 refers to 9 vessels that depleted the TAC for that year[49]).

Good practice

Fishery allocation for the targeted undulate ray fishery is limited to small-scale fishing vessels using polyvalent gear (i.e., multiple, for instance, traps and hook and line) with vessel size smaller than 9 meters in length. There are preconditions for the license; for example, fishers must collaborate with ecological research and report species-specific landings[50]. As argued by the Portuguese government, the allocation of licenses to small-scale fishers' accounts for economic and cultural dependence on small-scale fishing, in line with Article 17 of the CFP[51].

Key success factors in implementation

In this example, arguments put forth by Portuguese fisher's associations led to a research project initiated by the Portuguese Institute for Fisheries Research in collaboration with two fishing associations. The fishery was expanded after its initiation in 2015, and permits increased from an initial 50 to 60 in more recent years. While previously only fishers from two harbours could apply, now fishers nationwide can apply. The project led to increased reporting of species-specific landings for undulate ray, which were previously reported simply as skates. The key success factors were thus the fact that small-scale fishers were organized in associations that contested the top-down decision, as well as the willingness of the fishing institute to collaborate with an often-overlooked stakeholder group (i.e., small-scale fishers). Moreover, the willingness of the Portuguese government to negotiate on behalf of the fishers, and the EU's receptiveness to the project, were also prerequisites for its success.

Greece

Case 4: Bluefin tuna (Thunnus thynnus) quota allocation by points system

Member state	**Greece**
Fisheries management system	Annual license system allocated between different fleet segments. Additional restrictions include gear and minimum size.
Allocation process	Greece determines the total number of granted fishing licences each year based on the annual national quota.
Social criteria	Allocation criteria include license owners' place of residence (preference given to small island residents), presence of minor children or children with disabilities in their households, and for vessels with crews with less than four people.
Economic criteria	None found.
Environmental criteria	The licensing process is limited to low-impact hook and line fishing gear.
Objectivity	Allocation criteria consist of a point-based assessment with objectively measurable criteria according to which licenses are allocated.
Transparency	Fully transparent for the allocation process, not for allocation results.
Key implementation success factors	The issuance of annual fishing licenses promotes greater equity in fisheries management and permits authorities to consider social and environmental factors.

Description of fishery

Established in 1969, the International Commission for the Conservation of Atlantic Tunas (ICCAT) oversees the Atlantic Ocean and nearby regions. ICCAT sets an annual total allowable catch, which member countries, particularly EU vessels accounting for half of the quota, manage individually[52]. The ICCAT scientific committee conducts population assessments and provides advice on catch and quota allocation. Despite scientific advice recommending lower catches, ICCAT has set higher quotas in the past. Catches rose from 9.000 to 40.000 tons per year in the 1980s-1990s, followed by a decline to 24.000 tons per year in the 2000s. In 2006, a recovery plan was set[53]. Measures were implemented, such as reducing allowable catch, shortening fishing seasons, protecting juveniles, and strengthening controls. Positive results led to the transition from a recovery to a management plan in 2018, effective from June 2019[54]. In 2022, the annual total allowable catch was increased from 36.000 tonnes (for 2020-2022) to 40.570 tonnes for the years 2023 to 2025.

ICCAT established its first management procedure for both populations of Atlantic bluefin tuna in a historic accord. A management procedure is a decision-making method for fisheries management that uses a pre-agreed framework for activities such as establishing catch limits to achieve certain goals[55]. The latest population assessment of bluefin tuna indicates that the population is not overfished[56].

Licence allocation

The quota allocated from the EU is fished by licensed fishing vessels. Licenses are not transferable. Based on the annual national quota and the annual fisheries management plan submitted to the European Commission, Greece determines the total number of granted fishing licenses each year[57]. In 2022, Greece landed 424 tonnes of bluefin tuna, and 117 fishing licenses were issued[58]. The number of licenses represents a substantial increase from 44 licenses and a total quota of 228 tonnes in 2017[59].

The Directorate of Fisheries and Management of Fisheries Resources follows a structured process for allocating fishing licenses based on specific criteria. Vessels are categorized into A, B, and C, and the allocation is according to set percentages for each category. Notably, Category A receives two licenses each year for vessel owners under 40 years of age and first-time fishing license applicants. Category B, vessels with a license in the previous year that caught the largest amount of tonnage were granted licenses at a rate of 15%. Category C, based on vessel length, receives 30% (12 – 14.99 metres), 35% (15 – 17.99 meters), and 20% (greater than 18 meters). The evaluation of boats in each category considers various criteria in a detailed scoring system for evaluating license applicants, including factors like residency, family circumstances, production means, and landing figures[60].

Good practice

Greece uses an objective and transparent point-based assessment system. The allocation process ensures fairness and efficiency in granting bluefin tuna fishing licenses based on specified guidelines.

Quotas are assigned annually, with allocation differing based on historical landings, permanent residence (especially on small islands), presence of minor children or children with disabilities, vessels under 12 meters, and crews with less than four people. Additionally, two authorizations per year are given to young entrants, fostering the next generation of fishers.

Environmental criteria, focusing on points for low-impact fishing gear, play a role in the allocation process. No fishing licenses are given to vessels with bottom trawl gear and ship-towed seine gear. The approved fishing gear is limited to hooks and lines.

Key success factors in implementation

The issuance of annual fishing licenses promotes greater equity in fisheries management compared to allocating quota based on historical catches. First, it allows for a dynamic allocation of licenses based on specific criteria, such as place of residence, vessel length, and crew composition. Second, it permits authorities to consider social and environmental factors, such as the presence of minor children or dependents and vessels upgrading to low-impact gear.

Malta

Case 5: Bluefin tuna (Thunnus thynnus) allocation to young and sectoral fishers in Malta

Member state	Malta
Fisheries management system	Individual transferable quota and individual quota.
Allocation process	Mainly based on track records, special sectoral allocations, and allocation for new entrants.
Social criteria	Several, including ICCAT criteria for small scale (vessel needs to meet 3 out of 5 criteria, see below), and provisions for young fishers and new entrants.
Economic criteria	Not found.
Environmental criteria	Low impact gear (e.g., longline, hook, and line).
Objectivity	Mainly based on track records, other arguments (e.g. new entrants, low-impact gear) are well-defined, and no explicit reasoning or quantifiable notions are given for the percentages.
Transparency	The system is rather transparent, with rules well described in law. Allocation outcomes are not publicly available.
Key implementation success factors	Stakeholder consultation in a system dominated by small-scale fisheries, expertise on small-scale fisheries and EU law in government.

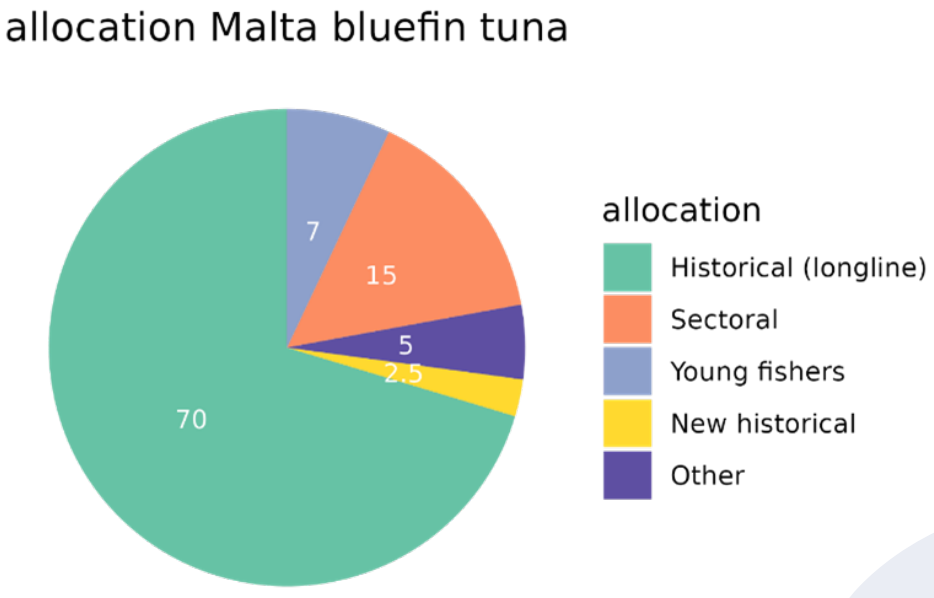
Description of fishery

Bluefin tuna (Thunnus thynnus) is the most valuable tuna fishery in the world. After a near-full collapse of the fishery in 2006[61], the population has been slowly rebuilding, and in recent years, there have been TAC increases after years of very low TAC. The TAC in Malta was set at 433 tonnes in 2023 (an 11% increase compared to the previous year[62]), and if sold at around 10 Euro per kg, that could represent a value of around 4 million Euros[63]. The bluefin tuna fishery in Malta is managed under an individual (transferable) quota, implemented in 2009. However, small-scale (sectoral) vessels are managed under individual quota, and certain other special allocations cannot be transferred either[64].

Quota allocation

Bluefin tuna quotas were distributed according to historical records since the inception of the bluefin tuna recovery plan in 2009. These allocations were negotiated with the representatives of fishers' cooperatives[65]. While the large-scale purse seine fleet had no historical records and thus did not get such an allocation, it was able to lease quotas from fishers from other fleet segments, becoming the largest operator over time. Some of these operators also own artisanal vessels, thus gaining from state allocations to this sector[66]. There are special allocations to the small-scale fleet segment, and recently, this allocation was increased for the new fishing year[6768]. The largest share of the quota, around 70%, is allocated to longliners that are managed under the ILQ system.

Figure 5. Allocation of Malta bluefin tuna quota according to fleet segments.



Good practice

In the Maltese system there are special allocations to young fisher and the small-scale sector, following transparent rules and objective criteria. In recent years, the TAC has been increasing, and since 2017, and every subsequent year sees a slight increase in the TAC allocation to allow more fishers to join this fishing opportunity[69].

Sectoral vessels (meaning historically part of this fishery and small-scale) receive around 15% of bluefin quota, and young fishers receive approximately 7% of bluefin quota[70]. Sectoral vessels in Malta follow the ICCAT definition, according to which a vessel needs to meet three of five characteristics, a) has a length of less than 12 meters; b) the vessel only fishes in the territorial waters of the country; c) each fishing operation does not last more than 24 hours; d) the crew does not consist of more than 4 people, or e) the vessel fishes with selective gear which leaves the least environmental impact. The law follows the ICCAT definition of young fishers, which are: those fishers who turn 41 by the end of the year of quotas allocation and those who turned 42 but had a quota the previous year. Additionally, a share of the quota was reserved in 2023 for vessels that had not before participated in the fishery, thus enabling these vessels to benefit from this fishing opportunity as well (2.5% of the allocation).

There are conditions implemented, such as the fact that the longline vessels (category A) must notify the government if they wish to transfer quota to purse seiners, and quota from sectoral vessels and the young fisher allocations cannot be transferred. The latter two schemes now also include a 'use it or lose it' provision, meaning if they do not utilize their quota in the subsequent year, they will receive a reduced quota allocation[71]. Sectoral quota and the young fisher quota also need to be fished by the operator or young fisher to whom the quota is allocated.

Key success factors in implementation

The government sought to engage proactively with all stakeholders (not only the larger-scale stakeholders). According to the Parliamentary Secretary for Fisheries, Aquaculture and Animal Rights, Dr. Alicia Bugeja Said, this process was not rushed[72]. Dr. Said is now an active member of the government, but she previously studied, amongst others, SDG 14 and Article 17 progress in small-scale fisheries. This may have also played a part in the active referral to Article 17 in the allocation of bluefin tuna quota[73].

Denmark

Case 6: 'Top-up' quota for small-scale mixed fishery Denmark

Member state	Denmark
Fisheries management system	Individual Transferable Quota.
Allocation process	Fishing history plays the largest part in allocation, and the incentive of joining the small-scale segment is a top-up quota. The top-up quota is divided equally among vessels and gradually decreases when more vessels join the small-scale segment. Two small-scale segments exist: one is open, and the other is closed. The locked segment quota top-up is larger than the open segment, but once they joined, they will not be able to sell their quota to the large segment, in contrast to the open segment where they commit for three years.
Social criteria	Small scale, in order to preserve fishing and ports that rely on coastal fishing. Next to the small-scale segments, Denmark also has a program to help younger fishers that want to enter the fishery.
Economic criteria	None mentioned, although it was assumed that the most efficient small-scale fishers would enter the permanent small-scale segment.
Environmental criteria	'Low' impact gear.
Objectivity	Small-scale is defined as vessels smaller than 17 metres using 'low impact' gear, which includes gillnets and lines, but excludes trawls and dredges. Alternatively, it can be vessels under 15 metres using any type of gear.
Transparency	Allocation outcomes and rules are published on the government website.
Key implementation success factors	Collaborations between environmental organisations and small-scale, low-impact fishers.

Description of fishery

Danish small-scale fishing operators target a portfolio of species using multiple gears (polyvalent). The small-scale fleet largely targets the same demersal species as the Danish large-scale demersal trawl fleet. Individual Transferable Quotas (ITQ) were introduced for demersal species in Denmark in 2007. These include cod, roundfish, and flatfish species such as sole and plaice[74]. The main gear used in the Danish small-scale fleet is gillnets. While the small-scale fleet comprises the large majority of the vessels in the Danish fleet (80% of the fleet uses gillnets[75]), they only fish a minor proportion of the total catch.

As is common with ITQ systems, small-scale fleets often become smaller, with more quota flowing to larger fleet segments. Between 2000 and 2010, the small-scale fleet in Denmark decreased by 27%. However, this decreasing trend had already started before ITQ implementation[76]. Within the small-scale fleet segment, catches have shifted towards the largest vessels in its category in recent years[77].

Quota allocation

Allocation primarily occurs based on the fishing history of the vessel. Quotas are allocated to the vessel's owner. A 'top-up' quota scheme was introduced to protect the small-scale fleet. Small-scale vessels were defined as vessels less than 17 meters long, with a minimum of 80% of their fishing trips lasting less than two full days[78]. Vessel owners sign up for a time-limited period in exchange for additional (non-transferable) quotas, which are calculated based on their own individual number of quotas. The more quotas the owner possesses, the more 'top-up' one receives. While partaking in this scheme, vessel owners can only sell their own quota shares to other vessels within the coastal fishing scheme. A fixed amount of quota (representing 80 million DKK in 2017[79]) is tied to the scheme, meaning that the more vessels enrol, the smaller the 'top-up' for each vessel[80]. Two schemes exist within the coastal fishing segment, an open segment that allows trade with the larger segment if a vessel wishes to leave the open system after the three-year enrolment period is over is over (approximately 140 vessels in 2017), and a closed segment, which receives a higher 'top-up' (a multiplication factor of five times as much) but is restricted from trading their quota with the larger scale segment (approximately 60 vessels in 2017)[81].

Good practice

The 'top-up' element is considered good practice to preserve socially important fleet segments and employment in port towns that are losing employment opportunities related to the fishing sector. In 2014, low-impact provisions were added to the scheme, which is an environmental requirement (these low-impact vessels receive a higher multiplication factor for the top-up twice as much as the time-limited scheme, and three times as much in the closed scheme[82]), in line with Article 17 guidance, although the article was not specifically used for this purpose.

Since there is no longer an opt-out option for vessels joining the closed small-scale fleet segment and a substantial incentive for joining that segment, this appears to be a strong measure to preserve the coastal fleet segment (it resulted in the enrolment of 60 vessels[83]). Vessels joining the closed small-scale fleet segment can be under 15 meters (using any gear), or under 17 meters with defined low-impact gear types (i.e. excluding trawl vessels and dredges)[84].

Key success factors in implementation

Environmental organisations and fishing associations collaborated and played a significant role in the changes to the coastal segment within the Danish ITQ system. Partly due to a push from the national organisation for small-scale fishers and with help of an environmental NGO, updates to the small-scale fleet segment (including the closed segment) were agreed upon in 2016[85]. Small-scale fishers were able to contribute their own ideas for the policy.

Germany

Case 7: Exception for small-scale coastal herring fishers using passive gear

Disclaimer: According to the best available data, the herring population is estimated to be below B_{lim} (limit reference point for spawning population biomass). There are no catch scenarios that will rebuild the population above Blim by 2026. Therefore, the scientific advice is zero catch for 2024[86]. The German government's decision to allocate quota to the small-scale coastal fleet (up to 12 meters vessel length and passive gear) directly contradicts this advice and the European Commission's proposal to close the targeted herring fishery. However, due to the mixing of herring populations, ca. 80% of Western Baltic herring are caught in the North Sea herring fishery. The impact of coastal fisheries in area 22-24 on fishing mortality is comparatively small. In addition, a socio-economic benefit may accrue for the small-scale fleet and coastal areas from the allocated quota. Germany has no other fisheries allocating quota according to social, economic or environmental criteria, and the herring fishery may represent a precedent for the development of future policies better aligned with the goals of Article 17 CFP.

Member state	Germany
Fisheries management system	In Germany. in accordance with §3 of the Sea Fisheries Act (Seefischereigesetz), fishing requires a fishing permit. Permits are granted within the limits of the total allowable catch allocated to Germany by the EU. They are tied to a vessel and are not for sale, in which differs from practices in other countries where quotas can be rented.
Allocation process	The allocation of fishing opportunities considers the performance of fishing operations, suitability, past participation, economic use of the fleet, market supply, the impact of bans or restrictions on fishing, and the ship safety certificates[87]. Additional fisheries management measures in the western Baltic herring fishery provide exceptions for the coastal small-scale fleet and passive gear.
Social criteria	Closures for fishing vessels longer than 8 metre or 8-12 metre with active gear[88] in the western Baltic Sea, providing exceptions to the smallest fleet and the fleet fishing with passive gear.
Economic criteria	German law, applicable to all fisheries, explicitly mentions the economic use of the fleet and market supply as allocation criteria.
Environmental criteria	No environmental criteria are applied. There may be positive spillovers from other rules. By law, fishing permits may be refused if one of the last three fishing permits issued has been significantly exceeded or misused. In addition, exceptions for herring fishing are granted to vessels with passive gear.
Objectivity	Allocation criteria across all fisheries are not objectively formulated. The formulation of exceptions is, however, objective, referring to a vessel length (8-12 metre) and clearly defined gear.
Transparency	The final allocation of catch quota and the decision criteria are not published.
Key implementation success factors	The biomass of herring remains well below the biomass at maximum sustainable yield. The political argument for allowing continued fishing of the small-scale fleet with passive gear is based on its purported low impact and its possible relevance for scientific data collection.

Description of the fishery

The herring population in the western Baltic Sea remains below the spawning biomass limit reference value, indicating a critical status. Since 2019, ICES has advised to set a zero catch to allow population recovery. However, fisheries ministers set TACs for targeted fishing for 2020 and 2021. The herring population is caught in different management areas, with notably 86% of the total catch from this population in 2022 originating from the eastern North Sea, falling under the North Sea herring total allowable catch. Continued catches in this area will inevitably impede the recovery of the Western Baltic herring population, necessitating additional area and seasonal restrictions[89]. Targeted fisheries have been closed since 2022, however, bycatch TACs of 788 tonnes were set for every year. In 2023, directed fishing in the western Baltic Sea was restricted to small-scale fishers with passive gear and vessels under 12 metres. To address conservation concerns, a general ban on discarding herring in EU waters has been in place since January 2015. Additional management tools employed by the EU encompass regulations on mesh openings and national regulations, including area closures.

Quota allocation

In October, the EU ministers for fisheries decide on catch quantities and management rules for Baltic Sea fish populations for the upcoming year. EU quotas are distributed to Member States. In Germany, catch quotas are tied to a boat and are not for sale, in contrast to other countries where quotas can be rented. The calculation of allocations considers fishing operations' performance, suitability, past participation, economic use of the fleet, market supply, and the impact of bans or restrictions on fishing[90]. Additionally, when

determining catch quotas, the areas of operation specified in ship safety certificates are taken into account as per §3 Seefischereigesetz (2)[91]. In 2023, the rules for western Baltic herring, with a quota of 788 tonnes, remain unchanged from the previous year despite the EU Commission's proposal to close the fishery[92]. However, the Council deviated from the Commission's proposals, rejecting greater restrictions, including the ban on directed herring fishing in the western Baltic Sea for small-scale coastal fishing with passive gear.

Good practice

A suite of fisheries management tools complements the quota allocation in Germany. For instance, the country used an emergency measure for herring in 2023; a closure period of 30 days and seasonal closures were decided in the western Baltic Sea for fishing vessels longer than 8 metre or 8-12 metre with active gear[93], providing exceptions to the smallest fleet and the fleet fishing with passive gear. Eventually, the EU Commission proposed closing targeted herring fishing altogether. The German government argued in favour of maintaining access for the coastal small-scale fleet. German coastal small-scale fisheries can continue to catch 435 tons of herring using passive gear, such as static gillnets and traps.

Key implementation success factors

The decision to maintain exceptions for small-scale coastal fishing in the western Baltic Sea herring fishery was driven by the recognition that ending this profession would jeopardize the competence of the fishery, while North Sea herring fisheries remain open and are mainly responsible for the high fishing mortality. Preserving these exceptions, which allow small coastal fisheries to catch herring using gillnets and traps, is considered socio-economically significant for maintaining existing fishing structures with less impact on population recovery compared to industrial fishing. Also, the end of the herring fishery would have had adverse consequences for data collection, leading to deterioration in the quality of information and an increase in uncertainties in scientific population assessments[94]. The German Federal Agriculture Minister, advocating for the exceptions, emphasised that the ban proposed by the European Commission would have placed coastal fisheries in significant distress[95].

Ireland

Case 8: Options for fishers without track records and small-scale polyvalent fleet

Member state	Ireland
Fisheries management system	Individual quota and rationed quota pools.
Allocation process	Industrial body, QMAC (Quota Management Allocation Committee), advises government on allocation, after which government sets allocations. Track records are very important, and allocations are based on vessel length, with a smaller percentage also allocated for vessels with no track records.
Social criteria	Allowing for new entrants (fishers with no track records), enabling and encouraging small-scale sector on which coastal towns are reliant.
Economic criteria	Sustainable rural economies, maximise quota uptake, and avoid early closure.
Environmental criteria	Ban on trawling vessels > 18 meters within 6 nautical miles (although this provision was recently overturned in court), special allocation schemes for fishers willing to use more environmentally friendly gear. Allocation to fishers with no track records to fishers using polyvalent gear, e.g. gillnets, longlines, ringnets.
Objectivity	Mostly based on historical track records which are objective, with exception of quota pools for fishers with no track records, which is also an objective rule for allocation (however, no reason was found to justify the percentages used).
Transparency	Rules on quota allocation are published on the government website.
Key implementation success factors	The Irish fishing system is known to put the fishers central and is designed to avoid strong concentration, keep viable coastal communities, and preserve the small-scale fleet. The system, and quota allocation, is co-designed with industry participants, including representation for the inshore fleet.

Description of the fishery

The Irish fishing sector is diverse and has, alongside large-scale segments, a relatively large small-scale fleet. This small-scale coastal fleet comprises numerous vessels targeting a range of populations, including Norway lobster (Nephrops norvegicus), mackerel (Scomber scombrus), and herring (Clupea harengus). Many of Ireland's coastal communities are reliant on these fisheries[96]. The largest share of Ireland's fishing opportunities is managed through quota systems, including individual quotas (mainly the pelagic species) and quota pools[97]. Limits on fishing capacity (licences) and effort (days at sea), as well as spatial, technical and seasonal measures are used to manage those fisheries that are not governed by quota.

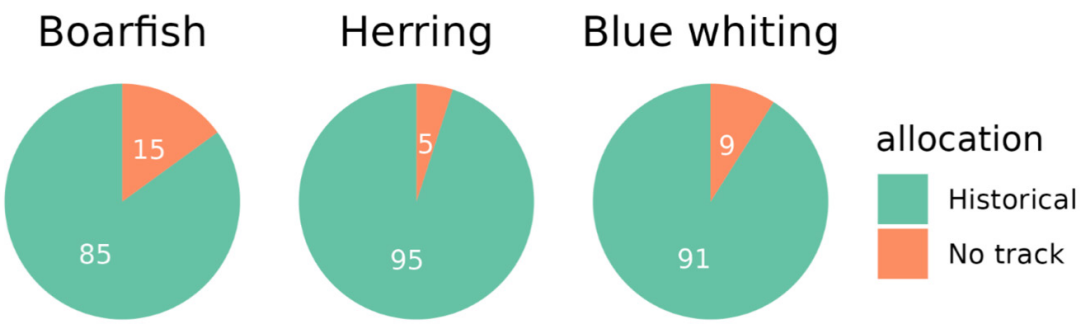
Quota allocation

Quota allocation for pelagic species is primarily based on historical catches of individual vessels, and several measures are designed to prevent the concentration of fishing rights (e.g. quota are not transferable). In demersal fisheries, catch limits generally take account of the length of fishing vessels, with large vessels being allocated double that of smaller fishing vessels. Allocations also consider the market situation for fish, and in certain fisheries, allocations consider the type of fishing gear deployed[98].

Good practice

Ireland has implemented several policies in line with Article 17 to protect its small-scale fleet for socio-economic reasons and encourage low-impact gears. For instance, quota allocations are set aside for (polyvalent) fishers without track records in several fisheries (artisanal gillnet and hook and line fishing, herring ring nets, and surface longlining of albacore tuna[99]). Polyvalent small-scale fisheries (<18 m), for instance, receive 9% of blue whiting, while vessels with no track record receive 5% of herring and 15% of Boarfish quota (Figure 6)[100][101]. Allocating a share of quota to vessels with no track records is an effective way to enable younger fisheries without established quotas to enter the fishery, thereby maintaining a thriving coastal economy in the harbours around the country[102], as well as prevent the notorious 'greying' of the small-scale fleet when access opportunities are closed[103]. Ireland is also one of the very few European cases that have seen increased or stable participation in in small-scale polyvalent fisheries over the last two decades[104].

Figure 6. Allocation of several Irish quota fisheries according to track record or polyvalent vessels with no track records.



In addition, Ireland employs various measures to protect its coastal fleet for example, it has banned the large-scale fleet segment (> 18m) from trawling or using seine nets within 6 nautical miles (Policy Directive 1 of 2019[105]), and it has designed schemes for more environmentally friendly fishing gears, which fishers can sign up for in exchange for fishing opportunities[106]. Recently, however, a court overruled the 6 nautical mile provision, as it was not an environmental protection measure, but more a redistribution from large to small scale fisheries[107].

Key implementation success factors

The Irish fishing system is known to prioritize fishers and is designed to avoid strong concentration, maintain viable coastal communities, and preserve the small-scale fleet (which also includes possibilities for new entrants). The system, and quota allocation, is co-designed with industry participants, including a representative specifically for the inshore fleet[108]. Moreover, a significant share of the Irish fleet is small-scale (89% of vessels were smaller than 12m in length in 2018[109]).

Sweden

Case 9: Quota allocation in the scampi (Nephrops norvegicus) fishery with passive and bycatch mitigation gear

Member state	Sweden
Fisheries management system	The fishery is managed using licenses (with the possibility to transfer) and a quota allocation system between different gear types. In addition to a total allowable catch that is allocated by quota, fisheries management imposes several restrictions[110]. These include size limits, a marine protected area in the Kattegat, and gear restrictions (e.g., size selective trawl with a large mesh window in the cod-end top panel[111]). Of particular relevance is the legislation imposing a ban on Nephrops trawling within 4 nautical miles of the coastline.
Allocation process	There is a fixed allocation key by which quotas are allocated amongst different gear. Generally, 50% of the Swedish Nephrops quota is allocated to trawlers using the grid, while 25% is allocated to vessels fishing with other trawls and creels, respectively[112].
Social criteria	Restrictions were introduced to limit the transfer of fishing quotas among fishers. No license holder is allowed to possess more than 6% of the total individually allocated quantity of the nephrops quota[113].This regulation aims to prevent the concentration of fishing opportunities among a few actors, ensuring a more equitable distribution.
Economic criteria	None found.
Environmental criteria	Multiple fisheries management decisions aim at improving environmental performance of the Swedish nephrops fishery. Fishers who opted to use the Swedish grid, (a trawl fitted with a grid and a device known as square-mesh cod-end for the release of small undersized round fish) were exempted from effort restrictions due to documented low cod catches. Allocation of quota is 25% for passive creel gear[114].

Objectivity	The process of issuing new licenses is not defined by clear rules, but it mentions the total allowable catch changes to the previous year, biological advice from ICES and the Swedish University of Agricultural Sciences[115]. The quota objectively specifies gear as an allocation criterion.
Transparency	The allocation of quota is transparent in that the allocation key between gear is fixed. In addition, the Swedish Sea and Water Authority (Havs och Vatten Myndigheten) publishes the remaining demersal and pelagic fishing opportunities during the year divided by fishing vessel[116]. However, it is not transparent in the allocation within each gear group.
Key implementation success factors	The interactions with the cod fishery and its strict management plan required changes to be implemented in the nephrops fishery[117]. In addition, the EU CFP required consideration of environmental criteria, which justified the high quota for passive fishing gear.

Description of fishery

Norwegian crayfish (Nephrops norvegicus) sustains a significant European fishery, with total landings peaking at nearly 76,000 tonnes in 2007 before declining to around 49,000 tonnes in 2018[118]. The fishery in Skagerrak and Kattegat is of regional importance in Sweden (~25 % of catches). Conventional trawls are the primary method of capture[119]. However, Swedish trawlers were excluded from near-coastal areas that are reachable for the small-scale fleet in the mid-1980s, leading to the growth of a creel fishery that contributes significantly to total landings[120]. The Nephrops trawl fisheries are highly restricted by an EU long-term cod (Gadus morhua) management plan, which aims at restoring depleted cod populations by limiting effort on gears catching cod. Currently, there are no signs of overexploitation of the Nephrops population[121].

Licence allocation

Quotas in the demersal fishery in Skagerrak and Kattegat allocate a portion of the total allowable catch of the fishery. The quota allocation follows a specified allocation key for different gears. The majority of the quota (50%) is provided to trawl fishers; however, creel fishers are allocated a significant quota (25%). A ban on Nephrops trawling within 4 nautical miles of the coastline was imposed in the mid-1980s[122]. However, many derogations reduce the effectiveness of this ban and limit fishing opportunities for creel fishers who face direct competition and potential gear loss from trawls operating in the same area. As a result, creel fishers struggle to fill their quota, leading to the return of the remaining quota to trawl fishers at the end of the season. New licenses for creel fishing are given out based on quota allocation from the EU. A maximum of 800 cages can be used per creel license (when fishing alone), but to maintain the quota, a minimum of 800 kg must be caught in a year[123].

Good practice

Coastal fishers are allocated quota with a fixed allocation key. The fishery also has an established trawl ban at four nautical miles, established in the mid-1980s (with derogations). In addition, the quota is not catch-dependent, which means that coastal fishers have the right to get the same quota allocated again in the next year if they cannot fully fish their quota in the current year.

Key implementation success factors

The nephrops fishery has significant bycatch interactions with the commercially important cod fishery. This motivated the use of alternative gear without bycatch implications. The call to EU member states to incentivise the use of selective gears and fishing techniques with reduced energy consumption and habitat damage when allocating fishing opportunities may have contributed to an almost 100% use of sorting grid devices, to which, by national legislation, 50% of the total nephrops quota is allocated[124].

France

Case 10: Socio-economic criterion for Bluefin tuna (Thunnus thynnus)

Member state	France
Fisheries management system	Individual Quota system allocated to producer organisations who follow their own systems to allocate individually to vessels.
Allocation process	Allocation in general goes through producer organisations. This specific case refers to the usage of allocation criteria for quota in the national reserve (quota flow to this reserve when vessels are sold with quota attached). According to an article of the French rural code, historical catches in national reserves may be allocated to fishing companies according to social, economic and environmental criteria.
Social criteria	Bluefin tuna allocation was done to rebalance the historical allocation, making it somewhat more fair to the small-scale fleet.
Economic criteria	Criteria may include importance for the local economy and equalizing quota uptake spread out over the year (in general, not specifically found for bluefin tuna).
Environmental criteria	Environmental criteria to allocate the national reserve may include: the impact of the fishery on the environment, the record of compliance, vessels deploying selective fishing gear, or using fishing techniques with reduced environmental impact, including low energy consumption and limited impacts on habitats. However, no examples of applications were found.
Objectivity	As the system is very obscure (i.e. percentages and their reasoning are not published), this criterion is difficult to assess.
Transparency	The allocation system of the national reserve is very obscure. Regarding the national reserve, it would be advisable to publish the amount of quota that is in the reserve, where it is allocated, to whom it is allocated, and based on which criteria.

Description of fishery

After years of low TAC due to a population recovery plan, since 2019 the ICCAT has slowly increased TACs for bluefin tuna (Thunnus thynnus)[125]. In 2022, the annual TAC was increased from 36.000 tonnes (for 2020-2022) to 40.570 tonnes for the years 2023 to 2025. These TAC increases, combined with a push from fishing sectors for this valuable quota, have spurred several countries to allocate some part of the quota according to Article 17 criteria (see also the cases of Greece and Malta).

In France, Bluefin tuna fishing is mainly done in the Mediterranean by purse seiners, while trawler bycatch and longline bycatch and target dominate the catches in the Atlantic. There is also a small fishery that uses pole and line gear and a recreational fishery. The French TAC for bluefin in 2023 was 3,159 tonnes in the Atlantic and 6,694 tonnes in the East Atlantic and Mediterranean[126].

Allocation

The allocation in France to Producer Organisations (POs) is mainly based on catch history. Allocation within PO's is usually based on different criteria, with many allocating by a mixture of historical track records and predominantly equal shares[127].

France divides its quota allocation for bluefin tuna into several parts: For the Mediterranean the largest share (± 89%) goes to 17 purse seiners, and around 10% goes to an 'artisanal' fishery (in France, the definition of artisanal can include vessels up to 25 meters[128]) using hook and line or, to a smaller extent, pole and line gear[129]. In the Atlantic, the quota goes to the Atlantic coast (bycatch quota for pelagic trawlers and for hook and line (± 10% of total quota), and lastly, there is a collective quota to recreational fishing in the Mediterranean and Atlantic (± 1%).

While track records are part of allocation processes as acknowledged in Article 17, the French allocation of bluefin tuna, according to a recent lawsuit, fell short in transparency and objectivity and did not use an environmental criterion (referring to the overall quota allocation rules, notably not of the reserve which does contain the possibility for an environmental criterion) in 2017. Moreover, it falls short of 'proportionality' in the way it addresses the criteria[130]. No legislative change seems to have taken place after this court case.

Good practices

The allocation of a specific share of the bluefin tuna quota to artisanal fisheries that use more selective gears, such as cane, line, or longline in the Atlantic, is an example of taking the socio-economic criterion (as specified in the rural code) into account[131].

In line with Article R. 921-35[132] of the French rural and maritime fishing code, a socio-economic quota of 400 kg has been established since 2013, in order to rebalance the bluefin tuna quota for the benefit of the small-scale fleet[133]. This quota is complementary to that distributed by the fishing history criterion. This socio-economic quota comes from a transfer of quota granted by purse seiners to the quota of small-scale fishing. In later years this allocation has been increased to more or less keep up with increases in the TAC. According to a recent report the socio-economic criterion is weighted at 3%[134], but thus far, this is not confirmed by any official administrative or governmental source.

A second good practice is that France has a mechanism of recovering a portion of vessel quota back to the state when vessels are exchanged. This provides means to populate quota reserves and maintain public control over allocations. For instance*, when a vessel is sold in the French system only 80% of its attached quota remains with the new owner, 14% of the vessel's quota goes to a reserve within the PO that the vessel is sold from, and 6% of the quota goes to the national reserve. According to an article of the French rural code[135], quota in national reserves may be allocated to fishing companies according to environmental, social, or economic criteria. These criteria may include: the impact of the fishery on the environment, the record of compliance, the contribution to the local economy and the catch record, vessels deploying selective fishing gear or using fishing techniques with reduced environmental impact, including low energy consumption and limited impacts on habitats. In general, the national reserve seems to be under-utilised[136][137]. The authors of this report could not find any case of allocation according to the criteria described in the national reserve.

* Different percentages applied to other scenarios in case of a vessel being scrapped, etc.

Conclusion

This study reveals that Article 17 of the CFP is already being implemented in various ways across different countries. This article can be a powerful tool for managing the necessary transition to fisheries that limit their impact on the environment or adhere to good socio-labour practices. The ten examples from nine different EU countries are portrayed as good practices due to the partial use of environmental, social and economic criteria for the annual allocation of fishing rights and quota in a transparent and objective manner. However, none of them currently qualify as "best practice" as they are only applying limited measures.

These examples represent initial steps towards improving fishing opportunities allocation processes. They contribute to reducing the impact of fisheries on the marine environment and commercially targeted fish populations. Moreover, they also foster the development and prosperity of coastal communities, generating significantly more jobs and shared wealth compared to industrial fishing companies. They can also contribute to the social cohesion of a territory through steady income and the preservation of cultural heritage.

For too long, the design and implementation of the CFP by the EU and its Member States have facilitated the industrialisation of the sector, concentrating power and profits in the hands of a few, too often with immediate maximization of profits as the sole objective. This has resulted not only in the overexploitation of fish populations, but also in the decline of countless coastal communities, economic hardship, eroding social cohesion and environmental disaster. When the new CFP was adopted in 2013, its spirit was to break this vicious circle, and Article 17 was one of the tools to curb overfishing and transition towards fair and low-impact fisheries.

Historical catch levels are important to take into account in fisheries management, as companies need planning security to sustain their activities and to repay investments. However, given the level of urgency in terms of biodiversity loss and climate change, as well as the ongoing social challenges and crisis small-scale fishers are facing for so long, it is essential for EU Member States to take their responsibility and ensure a fair and sustainable repartition of fishing rights.

The examples in this study contribute to highlight inspiring practices, with the hope they will help to expand the application of Article 17 in all EU Member States' national allocation processes. They will also inform the European Commission's "vademecum" to guide Member States in implementing this untapped tool, scheduled for release in 2024. A systematic application of Article 17 will be instrumental in managing the necessary just transition of the fisheries sector to make it fit for the 21st century.

Appendix A

Articles 16 & 17 of Common Fisheries Policy

Art 16 (6): 'Each Member State shall decide how the fishing opportunities that are allocated to it, and which are not subject to a system of transferable fishing concessions, may be allocated to vessels flying its flag (e.g. by creating individual fishing opportunities). It shall inform the Commission of the allocation method.'

Art 17: 'When allocating the fishing opportunities available to them, as referred to in Article 16, Member States shall use transparent and objective criteria including those of an environmental, social and economic nature. The criteria to be used may include, inter alia, the impact of fishing on the environment, the history of compliance, the contribution to the local economy, and historic catch levels.

Within the fishing opportunities allocated to them, Member States shall endeavour to provide incentives to fishing vessels deploying selective fishing gear or using fishing techniques with reduced environmental impact, such as reduced energy consumption or habitat damage.'

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