



## Fixed Quota Allocations and Sustainable Fishing

### Summary

The Fisheries Bill is currently passing through Parliament. An amendment, if adopted, would end the system of *Fixed Quota Allocations* (FQAs) by removing historic catches as one of the criteria to be used when allocating quota. FQAs, originally based on catch records, have been the backbone of the UK's approach to quota distribution for two decades.

The amendment (annex 1) is part of an ongoing campaign by environmental NGOs and others, to shift quota from larger vessels which primarily work offshore, to small-scale fleets which mainly operate near-shore.

The FQA system has been subject to a range of criticisms, some more valid than others. All of these criticisms deserve serious consideration and should be carefully weighed against the evidence and with the alternatives available. A list of the most frequently made criticisms would include:

- FQAs lead to haves and have-nots in the fishing industry and create barriers to access including to new entrants
- FQAs and quota trading have allowed the emergence of *slipper-skippers* and speculative holdings, which raise quota lease costs for those who actually catch the fish
- Quota shortage in some under-10m fisheries are caused by the FQA system
- FQAs lead to concentration of ownership
- FQAs allow foreign ownership of a national resource
- FQAs lead to unsustainable fishing

The respective merit of these criticisms are weighed in the body of the paper and where relevant, solutions are discussed.

This paper's central point, however, is that those behind amendment have given insufficient credit to the contribution that FQAs has played in shifting the main commercial fisheries in the UK fisheries away from the chaotic, unsustainable fishing patterns which were endemic in the UK in the 1990s. This contribution has been substantial and sustained and has taken us very far towards our sustainability goals. If accepted, the amendment would lead to a reckless experiment, and the abandonment of one of the core pillars of sustainability in the UK fleet.

The Government's approach, as expressed in the Fisheries White Paper and the Fisheries Bill, has the merit of recognising the strengths of the FQA system, whilst opening possibilities of testing alternative approaches in a measured, proportionate, and careful way. In an arena where there is a high risk of

generating undesirable unintended consequences, we think that this must be the responsible way forward.

Small-scale fisheries in the UK do face challenges and it is important that these are addressed in a rational, informed way. The *Inshore Management Conference*, scheduled for October 2019, is an important, inclusive and evidence-based initiative, aimed at exploring options for the management of our of the UK's multi-faceted inshore fisheries.

### **Flexible Fishing Rights**

Over 20 years, FQAs have proved to be well adapted to the diversity of the UK fleet by providing a highly flexible form of fishing rights, compatible with a wide range of quota management arrangements. These include:

- Decentralized, collective quota management, through producer organisations
- Community quotas
- Corporate holdings
- Family fishing businesses
- Holdings by individual fishermen
- Annual allocations which allow for planning catches through the year
- Monthly catch limitations which provide ready flexibility to change target species
- Hybrid arrangements which capture the benefits of both annual allocations and monthly limits for different species
- Quota swaps and transfers, or sale and purchase of quota, through which unutilised quota can be moved to where it can be used, enabling the UK fleet as a whole to fully utilise the quotas that are available to it

Whilst affording this flexibility, the FQA system has also provided certainty and stability that has allowed for long term investment to take place.

The alternative being proposed, a centralised system, with allocation and day-to-day quota management decisions made by government, was an approach left behind decades ago as fundamentally unworkable in the UK context.

One of the strengths of the Fisheries Bill, is its recognition of the need for a flexible, responsive, system that does not replicate the flaws of the CFP and recognizes the sheer diversity of the UK fleet. FQAs have proven over time to be an adaptable and flexible form of fishing rights.

### **Social Justice: Confusing Apples and Pears**

The case for abolishing FQAs is based on an argument that the current arrangements are grossly unfair to the small-scale fleets, which are starved of quota. This is an important question which can and should be examined empirically, and the underlying reasons understood, but has been weaponised as part of the rhetoric in a debate between opposing camps.

Answering some key questions that have been raised would help all involved to focus on the real as opposed to the rhetorical issues:

1. Are quota shortages in the under-10m sector out of line with quota shortages in the over-10m sector?
2. Are misleading statistics are being used to create an impression of huge social injustice? (Typically the argument is made that the small-scale fleet represents 2% of the quota but represent 79% of the fleet). Are quotas relating to the large shoaling stocks, harvested by large vessels (for safety and efficiency reasons) being conflated with the intrinsically smaller stocks typically harvested by the small scale fleets. Are stocks that are outside the range of small scale fleets being included to make the case? Is this distortion skewing the whole debate? Is it fundamentally misleading to suggest that the small-scale fleets are being denied quota of stocks that they could not ever catch?
3. Where quota shortages exist within the under-10m sector, are these primarily a function of the domestic quota management regime? Are other factors are at work, not least international allocations, recent TAC decisions, and increased fishing capacity within the under-10m sector, often displaced from the over-10m fleet?
4. Is it the case that most under-10m vessels are not dependent on quota species but rely on high value stocks such as such as crab, lobster and whelk?

All this is not to say that the small-scale fleets do not face shortages or challenges. It is to question whether, on face value, the evidence suggests that the FQA system is the reason for those problems. These are dealt with in more detail in annex 4 to this paper.

Presenting deliberately misleading statistics for demagogic purposes is not new and is a trait that is unlikely to disappear. They should have no place however in any serious debate about the future of the fishing industry.

## **Alternative**

Fisheries management is complex and often requires difficult *trade-offs* between different objectives. It is important therefore to examine every option carefully. The alternative to FQAs being advanced within the context of the Fisheries Bill would replace FQAs with a centralised, incentive-based approach. Essentially, existing quota rights, based on FQAs, would be extinguished and reallocated on the basis of the degree to which vessels meet certain defined criteria. Those criteria could relate to a wide range of desirable outcomes, including improved selectivity, minimising bycatch, ecosystem damage, maintaining culture and traditions etc.

Leaving aside the somewhat subjective character of some of the desirable objectives that have been suggested, using quota allocation to incentivise positive fishing behaviours is not an entirely new concept. The *North Sea Catch Quota* system is a relatively recent example through which voluntarily participating vessels received additional quota, in return for minimising discards and monitoring their cod catches using CCTV. It is generally regarded as having been a success. It is not, therefore, the principle but the scale and ambition of this approach which is the significant difference. It implies moving away from a system with a solid track record in delivering sustainable fishing and towards a significant step into the dark, into a complex, highly bureaucratic, all-encompassing set of

arrangements which would require an extensive system of centralised supervision. All this, when it is conceded that:

*"The vast majority of the UK-registered fleet ... are already delivering on environmental, social and local economic terms."*  
**Greenpeace/Greener UK: a fairer and more sustainable approach to distributing UK fishing quota**

Our primary fear is that such a system would replace a functioning, effective, set of arrangements with an untested high risk strategy.

The serious risk is that such an approach would amplify the unintended consequences which fishing regulation are particularly prone. The problem facing such an approach is not with the principle of incentivising positive behaviours, which is one which we can share, but with how such an elaborate system could be operationalised if it was to be done on any kind of objective or evidence-based system. In the meantime, we would be abandoning a system with a proven track record in delivering progressive sustainable fishing.

### **Limiting Access and Security of Tenure**

Limiting access to fisheries, either through licencing and/or quantitative limits on catches, is a fundamental part of sustainable fisheries management. Access limitation is required to avoid the race to fish and over-exploitation of the resource that characterise open access fisheries. Deciding who receives licences and quota shares is inevitably a difficult and controversial area because policy decisions define winners and losers. Nevertheless, these difficult decisions are a necessary prerequisite for sustainable exploitation of our fish stocks. (See annex 2)

The environmental NGO, the *Environmental Defence Fund*, has published useful commentary on the link between security of tenure, custodianship and sustainable fishing. In this extract, catch shares can be read as serving the equivalent function as FQAs in the UK.

*"By allocating participants a secure area or share of the catch, catch share programs give participants a long-term stake in the fishery and tie their current behaviour to future outcomes.*

*This security provides a stewardship incentive for fishermen that was previously missing or too uncertain to influence their behaviour toward long-term conservation. Catch share programs align the business interests of fishermen with the long-term sustainability of the stock and provide more stability and predictability within a fishing year and over time.*

*Furthermore, catch share fishermen are held accountable—they are required to stay within their allocated share of the catch or ensure continued stewardship of their area by complying with science-based controls on fishing mortality. Under transferable quota-based programs, participants have the option to lease or buy additional shares to remain compliant."*

**Catch Share Design Manual Environmental Defence Fund**

There is an important line which runs through security of tenure, custodianship and profitability, to sustainable fishing and the delivery of desirable outcomes such as high levels of compliance, stable fishing businesses, and crew welfare.

The alternative, which our industry had direct experience of in the 1990s, is a race to the bottom, as fishing enterprises jockey for position driven by insecurity and inadequate profitability, and fall into the downward spiral of non-compliance, poor stock assessments and lower TACs.

### **Box 1**

#### **Industry Investment**

FQAs, because they are regarded by the banks as an asset which can be borrowed against, play a central role in investment in the fishing industry. This finance is critical in modernising the fleets, maintaining and improving crew welfare and safety standards, as well as improving overall efficiency, allowing our fleets to remaining competitive. The sizable investment required to build new vessels means that security of tenure is critical.

### **Devolution**

Fisheries management is a devolved responsibility.

The Scottish Government has made clear in its recent consultation paper that it intends to keep the FQA system as the main means of allocating quota and acknowledges:

1. The investment made by fishing businesses in quota
2. That FQAs provide a degree of stability and certainty for future investment

If the proposed amendment extinguishing FQAs was to be adopted as part of UK overarching legislation, it would cut across the devolved administrations' responsibilities and settled policy in this area. An English only approach would undermine any semblance of UK coherence in the already complex area of licensing and quota management. So, notwithstanding attempts to circumvent the point, the amendment, if accepted, would fundamentally run counter to the devolution settlement.

### **Room for Improvement**

Annex 2 to this paper describes the evolution of the fisheries management system in the UK and highlights the central role that FQAs have played in delivering sustainability, stewardship, and stability. Many fishing businesses have invested in FQAs on the understanding, periodically encouraged by Government, that there would be continuity of tenure.

On the other hand, every arrangement has limitations and drawbacks and it is important that these are discussed and understood. The criticisms of the FQA system are:

- FQAs lead to haves and have-nots in the fishing industry and create barriers to new entrants

- FQAs and quota trading have allowed the emergence of *slipper-skippers* and speculative holdings, which raise quota lease costs for those who actually catch the fish
- Quota shortage in some under-10m fisheries are caused by the FQA system
- FQAs lead to concentration of ownership
- FQAs allow foreign ownership of a national resource
- FQAs lead to unsustainable fishing

## Discussion

1. *FQAs lead to haves and have nots.* It is true that FQAs, and indeed any limited access fishery, excludes some people and privileges others. Most fisheries managers, however, would agree that limiting access is a prerequisite for a sustainable fishery, as open access fisheries invariably succumb to the tragedy of the commons. The issue of winners and losers is therefore not related to FQAs *per se*, but limitation of access. If limitation of access is to be relaxed to encourage new entrants, it will be important to:
  - Avoid increasing fishing capacity in the fleet sector concerned
  - Avoid destabilising the operations and economic viability of existing fleets
2. *Slipper Skippers.* Although the scale of holdings by individuals and companies who perennially do not catch them is at the margin of the main system of FQAs, ministers *already* have the power under existing legislation to reallocate *unutilised* FQAs and to top-slice quotas annually where this is deemed necessary or desirable. It will be important that any future reallocation is undertaken in a fully transparent and coherent way on the basis of clearly understood and agreed criteria, and that such an exercise does not undermine the objective of catching the UK's annual allocations in full.
3. *The problems faced by the small-scale fleets are caused by the FQA system.* There are a number of challenges faced by the small-scale fleets and it is asserted that these directly result from the operation of the FQA system. But is this true? Many parts of the UK fleet feel that their quota allocations constrain their ability to catch fish. In a sense they are supposed to. A system of TACs and quotas is there to limit fishing mortality on each stock to sustainable levels. Most vessels in the fleet could use more quota.

### Salient points:

- The expansion of fishing capacity in the under-10m fleet is the primary reason that quota shortages in the under-10m sector emerged, after years where it was essentially an unrestricted fishery. It is estimated that around 70% of the catch of under-10m quotas are made by 14% of the under-10m fleet. The development, from the late 1990s, of a class of high catching under-10m vessels, many of them displaced from the over-10m sector, is by far the most potent factor in generating a mismatch between quota shares and fishing capacity in the under-10m pool
- a shortage of skates and ray quota has been caused by successive 20% annual reduction in the TAC as a result of an over-precautionary approach to data-limited fisheries
- The shortage of quota for Channel cod results from the UK's 9% relative stability share (by comparison with France's share of 84%).

- The bulk offshore fisheries in the North East Atlantic, or North East Arctic cod in offshore generally have little overlap if any, with inshore fisheries for high value local species.

In short, these observations point towards the conclusion that the narrative that FQAs are the root cause of the problems faced in the small-scale, or inshore cannot be substantiated by the facts.

4. *FQAs lead to concentration of ownership.* This is true and is an observable feature of fisheries in which the market has been given, or acquired, a role. Some consolidation of ownership in the past has been a positive feature, allowing fishermen to match their portfolio of quotas with their catches, and right-sizing fleets. It is generally recognised that there is a tipping point beyond which further concentration would be unhealthy. Other countries have placed constraints on concentration of quota holdings, and we would be open to a debate about whether that point has been reached in some of our fisheries.
5. *FQAs facilitate foreign ownership* of what is a national resource. It is true that the UK has been part of the EU single market for 20 years and there has been a considerable investment by non-UK interests in the British fishing industry. Non-UK interests have invested in vessels, licences and quotas and in some cases have bought entire fishing companies. The Government's general attitude to the future of foreign investment in the British economy is likely to be a major determinant of policy in this area. It is not obvious why fishing rights would be treated differently from any other part of the economy. In the meantime, the economic link licensing conditions are available to ensure that all vessels utilising UK quota maintain a genuine and significant economic link with the UK.
6. *FQAs lead to unsustainable fishing.* The contrary is true and Annex 1 to this paper explains the central role played by FQAs in putting the main commercial fisheries in the UK on a sustainable footing.

## **Conclusion**

The NFFO has a responsibility to all of its members, whatever size of vessel, fleet sector, target species, or gear type, to act fairly and objectively in an arena often characterised by misinformation and self-interest. We need a vibrant small-scale sector and we also need large vessels which can harvest the offshore stocks sustainably. We also need fisheries policies that are based in science and evidence rather than on myth and hearsay. Above all, we need a management system which allows the harvesting of fish and shellfish at sustainable levels, delivers high long-term yields and plays its part in contributing to food security.

FQAs have played an important role in delivering sustainable fisheries in the UK, and abandoning them for a poorly defined but highly centralised alternative, would carry serious risks to sustainable fishing. We are open to refinements and improvements where it can be shown that they make sense.

The Fisheries Bill as currently drafted would allow for this type of cautious, incremental approach. The amendment, if accepted would undermine the

custodianship that has been an important pillar in putting our main commercial fisheries on a sustainable and profitable footing.

In effect it would throw the baby out with the bathwater.

**NFFO April 2019**



## Annex 1

### Amendment

Peter Aldous  
Zac Goldsmith  
Scott Mann  
Caroline Lucas  
Mr Ben Bradshaw  
Richard Benyon

Steve Double

Stephen Lloyd

Martin Vickers

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Clause **20**, page **11**, line **42**, at end insert—

“(aa) in the second sentence—

(i) for “may” substitute “shall”; and

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Notices of Amendments: 21 March 2019

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Fisheries Bill, continued

(ii) for “the history of compliance, the contribution to the local

economy and historic catch levels” substitute “and the social and economic contribution to the local economy, thereby recognising the fishery as public property held on trust for the people.”

#### **Member’s explanatory statement**

*This amendment is to ensure that it is mandatory for relevant national authorities to use the impact of fishing on the environment, social and economic contribution to the local economy as criteria when distributing fishing opportunities*

## Annex 2

### Fixed Quota Allocations and Sustainable Fishing

The quota allocations system based on FQAs has been in place over two decades. During that period, the UK's main commercial fisheries have transitioned from a chaotic system, characterised by low-compliance and high mortality/low-biomass, to a stable system in which lower fishing pressure has led to progressively higher levels of biomass. Security of tenure over fishing opportunities has been one important strand in putting our main fisheries on a positive trajectory.

*"Over the last ten to fifteen years, we have seen a general decline in fishing mortality in the Northeast Atlantic and the Baltic Sea. The stocks have reacted positively to the reduced exploitation and we're observing growing trends in stock sizes for most of the commercially important stocks. For the majority of stocks, it has been observed that fishing mortality has decreased to a level consistent with Maximum Sustainable Yield (MSY) – meaning levels that are not only sustainable but will also deliver high long-term yields."*

**Eskild Kirkegaard,**  
**Chair of the Advisory Committee,**  
**International Council for Exploration of the Seas**

#### Box 2

##### North East Atlantic: Pathway to Sustainable Fishing

- Stage 1. Unregulated fishing for over a century (1800s-1970s)
- Stage 2. Overfishing resulting from overcapacity fishing fleets as technology, population, economy boom (1970s-1990s)
- Stage 3. Stock rebuilding and management improvements 2000 – present)
- Source Prof. C Williams University of Washington

### Origins and Evolution

*Fixed Quota Allocations* were introduced in the UK in 1999 after extensive discussions between government and industry organisations. FQAs allocate to the FQA holder, a fixed percentage of each fish stock for which the UK holds a national share. The actual quota tonnage allocated to each allocation unit each year will vary as *Total Allowable Catches* fluctuate in line with changing scientific advice and management decisions on harvest rates. Prior to 1999, quotas were allocated annually on the basis of a *rolling reference period* (an average of catches made by the vessel in the previous three years).

#### Historic Catches

Historic catches (and the use of a recent reference period) as the basis for the allocation of fishing opportunities were considered appropriate because they afforded:

- A degree of stability on which financial, logistical and crew planning (and training) could be based

- Consistency with the international norm within the Common Fisheries Policy – national (relative stability) shares were based on the activities of member state vessels during a recent reference period
- A basis for the delivery of a broad equity – more active vessels received more quota because through their activity, they had demonstrated a specific, measurable, level of need
- Small-scale fisheries (under-10m vessels) were not included in the mainstream quota arrangements because:
  - There was no EU requirement to complete log-books estimating catch at sea on vessels below 10 metres in length
  - Catches by the under-10 metre fleet were considered either *de minimis*, or were of non-TAC species
  - The administrative means to quantify and manage catches at individual vessel level was absent; initially under-10m vessels were not even licenced
  - The “pool system” which sets monthly catch limits against which all vessels outside producer organisations could fish, was regarded as the most flexible system for the under-10m fleet, not least because it allowed vessels to change their target species in line with local and seasonal availability, thereby avoiding displacement of small vessels from their customary grounds

#### Fixed Quota Allocations

Fixed Quota Allocations replaced the three-year rolling reference period, as the basis for quota distribution, by freezing quota entitlements on the basis of track record between 1996 and 1998. This change was made because:

- The rolling reference period could result in very rough-justice. Where a vessel could not catch its full allocation in any given year (through engine breakdown or personal circumstances) it lost quota, potentially in perpetuity; it was also open to ghost fishing – over-recording catch to maintain or increase future allocations
- The broader quota management and licensing system was evolving into a more flexible arrangement through which producer organisations (collectives of fishing vessel operators) could swap and transfer quota of unutilised species for species for which there was a need. This was proving to be an efficient, decentralised, alternative to centralised administrative decisions on the distribution of quota. Producer organisations were strategically positioned close to the operations of the vessels concerned and were therefore in a much better position than central government, to identify quota surpluses and shortages and facilitate the necessary transfers to maximise economic benefits for all parties. Quota in this way could be moved to where it was needed. Gradually, a degree of market transaction, involving money, grew to supplement the basic swaps and transfers process. These transactions helped to meet the national objective of full utilisation of UK quotas.

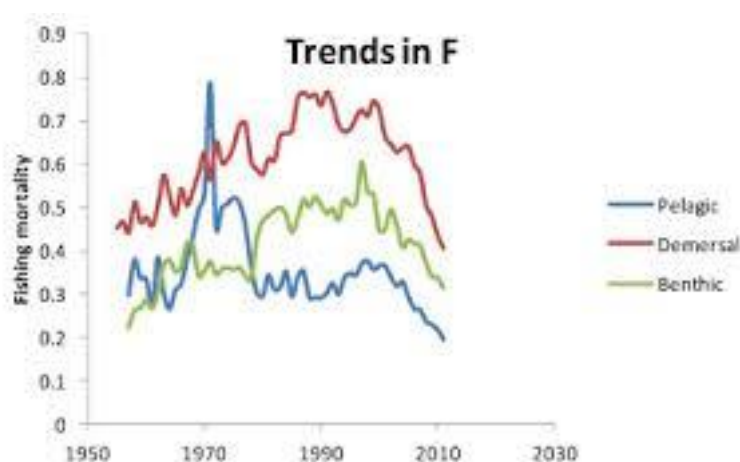
## Market in Quota

The market in FQAs, as well as short-term quota leasing, thus arrived in the UK not as part of a deliberate policy shift (as in Iceland, Netherlands or New Zealand) but as an incremental process resulting from pragmatic changes to the licensing and quota management rules. However, buying and selling of FQAs received increased impetus between 1996 and 2003 as a result of conscious government policy, when vessel owners decommissioning their vessels, were allowed to retain or dispose of their quota as they saw fit, firstly in the form of vessel track records, and later as FQAs. Effectively this meant selling quota rights to the highest bidder, thus lowering the level at which decommissioning became an attractive option - and thus saving the government money.

The intertwined history of fleet reduction initiatives (to meet mandatory EU targets) and the introduction of Fixed Quota Allocations, were important developments putting the main UK fisheries on a sustainable and profitable basis. In short, FQAs, along with fleet decommissioning, were pivotal developments that allowed fishers and fisheries administrators to break with a chaotic and dysfunctional fisheries management system and replace them with coherent arrangements that delivered sustainable fisheries. These arrangements may now need some careful finessing, but they can be credited with a central role in putting fish stocks and our industry on a trajectory to recovery. The benefits of which are being enjoyed today in terms of higher TACS, and stocks that are already at, or are on track towards, maximum sustainable yield were based largely on right-sizing the fleet and the introduction of FQAs.

Across all of the main species groups in the North East Atlantic, and specifically in the fisheries of interest to the UK, a dramatic reduction in fishing mortality can be traced in the ICES science to the year 2000, not unconnected to the fleet reduction programmes in the 1990s.

### Trends in Fishing Mortality



Fleet reduction and stringent limitation of access were central drivers of this change but in the UK FQAs also played a pivotal role. The specific role that FQAs played in reducing fishing mortality on the main commercial fish stocks was part of a *sequence* of developments:

- Decommissioning delivered an overall fleet reduction to bring fishing capacity in line with available fishing opportunities; this allowed the fleets to fish both legally and profitably but was almost completely focussed on the over-10 metre sector
- The sale of quota and FQAs, and the role of producer organisations in facilitating swaps and transfers, allowed the in-fleet quota adjustments necessary for each individual vessel in the fleet to fish legally and profitably; essentially many fishermen invested in their future
- A sense of stewardship emerged from peer pressure from those fishermen who had paid for additional quota to be able to land all their catch legally, and who did not want to see other vessels landing black fish; the result was the emergence of an industry mind-set centred on sustainability, which contrasted starkly with the chaotic and dysfunctional situation in the 1990s; which in turn had resulted from disastrous EU and national fleet capacity policies in the 1980s.
- Security of tenure – whether private or collective – was an important element in achieving sustainable fisheries. FQAs have performed this function in the UK.

### Annex 3

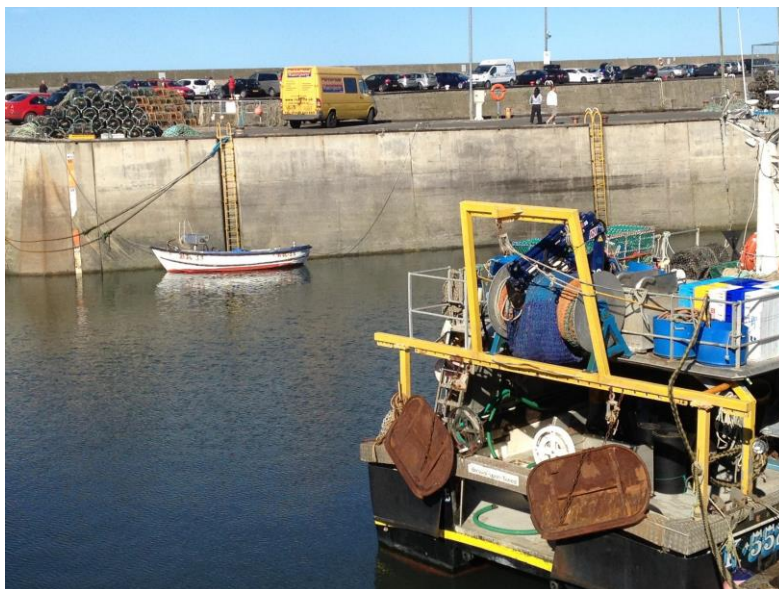
The following table, produced by American fisheries scientists with impeccable credentials, summarises the relative scores of different approaches to fisheries management. Catch Shares, IFQs and ITQs, may be understood as broadly equivalent to Fixed Quota Allocations.

Management Approach	Economic	Ecological	Community
<b>Open Access</b>	Profit attracts entry into fishery until depleted stocks, saturated markets or costs of competitive fishing eliminates profit, the bioeconomic equilibrium.	Determined by stock pressure at point of zero profit. For valuable species, entry leads to overfishing. Can be sustainable for species with limited markets.	High employment during depletion phase, but low profits and wages mean poor jobs. Displacement and community disruption when stocks collapse.
<b>Harvest Guidelines</b>	Unenforced guidelines do not change Open Access outcomes.	Unenforced guidelines do not change Open Access outcomes.	Unenforced guidelines do not change Open Access outcomes
<b>Limited Access</b>	Incumbent fishermen invest in harvesting power to compete for more fish until profit is eliminated, leading to bioeconomic equilibrium.	Effort increases by permit holders lead to higher fishing pressure, depleting stocks, except for short-lived, highly fecund species	Low profits and wages mean poor jobs. Displacement and community disruption when stocks collapse.
<b>Input Regulations</b>	Fishermen increase unregulated inputs, capital stuffing, until profit is eliminated.	Capital stuffing increases effort and stock pressure.	Employment can increase if crew not regulated input, but low profit means poor jobs.
<b>Tradable Input Regulations</b>	Input rights shifted to those who can capital stuff most efficiently. They continue to do so until profit is eliminated.	Shifting input rights to more effective capital stuffers exacerbates resource depletion.	Crew displaced from selling vessels; adverse effects in communities whose residents sell; remaining jobs still low-paying.
<b>Total Allowable Catch (TAC)</b>	Fishermen invest to compete more effectively for fish, until profit is eliminated.	Correctly set and enforced TACs support sustainability.	Race-to-fish leads to seasonal, high-paying and dangerous jobs.
<b>Catch Shares</b>	Groups receiving collective allocations can coordinate rather than compete, reduce costs to and improve price.	Correctly set and enforced TACs support sustainability.	Stakeholders make tradeoff between number and quality of jobs, but non-members disenfranchised.
<b>Individual Fishing Quota (IFQs)</b>	Individually fixed catch quantity induces fishermen to maximize profit per fish by cutting costs, improving price.	Correctly set and enforced TACs support sustainability.	Less intensive fishing may reduce employment, but profits mean jobs are safer, better paying.
<b>Individual Transferable Quota (ITQs)</b>	Like IFQ, but additionally quota moves to more efficient vessels, increasing profitability of the fleet.	Correctly set and enforced TACs support sustainability.	Crew displaced from consolidation; remaining jobs safer, better paying; disproportionate adverse effects in communities whose residents sell.
<b>Spatial Management</b>	Behavioral response and economic outcomes from fishing zone determined by approach, above, in place there.	Closing areas calibrated to the life history of the species increases biomass within the area, and may create spillover to be caught.	Community outcomes from where fishing allowed determined by approach, above, in place there.

*Summary of behavioural changes observed under each approach to effort management, with associated economic, ecological and community outcomes. Background shading indicates generally negative (red), mixed (yellow) or positive (green) outcomes; gradients reflect outcomes depend on other features of management. From Anderson et al. 2018*

## Annex 4

### Small Scale Fisheries



*Two registered under-10m vessels illustrating the differences in scale of vessels operating within the under-10m sector.*

The quota allocations system has become intertwined, sometimes confusingly, with a debate on the future of small-scale fisheries.

Small-scale fisheries have a vital role to play within UK fisheries. In terms of supporting communities, generating employment and providing high-value fish and shellfish for the market, they are of central importance.

In addition to being geographically peripheral, small-scale fisheries are extremely diverse in terms of target species, gear type, vessel design and size, crewing arrangements, degree of dependence on quota species, business models, and organisational affiliations.

Quota shortages of specific stocks and specific species, became a feature of some under-10m and non-sector fisheries during the mid-1990s, especially after the registration of buyers and sellers of fish introduced more rigorous catch recording.

What has been missing, until now, is a clear and shared understanding about the relationship between quota distribution, fleet evolution and catch recording in the small-scale fleet. We need to replace myth and disinformation with a solid, evidence-based, methodical analysis presenting information on:

- The evolution of the quota arrangements for under-10m vessels and the non-sector
- The scale and location of shortages in the under-10m sector
- An analysis of the underlying reasons for quota shortages where they exist
- The degree of dependence on quota species

- A parallel understanding of the evolution of the technological developments and displacement pressures that have shaped fleet development in this part of the fleet
- An objective understanding of the contribution made by the small-scale fleet to fishing mortality on the stocks concerned
- The role of displacement of fishing effort into the UK's small-scale fisheries, as unintended consequences of past policy decisions

The absence of an agreed, factual, evidence-based, approach, that avoids the pitfalls of the more simplistic, naïve, narratives currently in circulation has blighted the debate on the future of small-scale fisheries.

The UK's departure from the EU and therefore the Common Fisheries Policy, provides an opportunity to take a fresh approach to the management of the UK's small-scale fisheries, including the possibility of lifting genuine low impact vessels out of the quota system altogether, where this can be done safely.

The establishment of the *Inshore Fisheries Management Conference*, with the involvement of all sectors and regulators is one of the most encouraging developments for decades and it is extremely important that the legislative framework agreed as part of the Fisheries Bill opens rather than closes options in this area.

**NFFO April 2019**