

Devolved management of fish quotas in the United Kingdom: producers' organizations and individual quota systems

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Introduction

As a Member State of the European Community (EC), the United Kingdom's marine capture fisheries must be managed within the framework of the Community's common fisheries policy (see Box 1). Since 1983 this has included a system of annual total allowable catches (TACs) for most commercially important stocks within the zone of extended fisheries jurisdiction created by the 200-mile limits of all the EC Member States with coastlines bordering the North East Atlantic and adjacent seas. The TACs are divided into national catch quotas according to an established allocation mechanism which gives each Member State a fixed percentage share each year (although a number of international quota swaps are regularly undertaken).

While the national fishing fleets are subject to certain common input controls under the common fisheries policy (in particular technical conservation measures such as minimum mesh sizes) each Member State is free to determine the means for allocating its quotas and for regulating quota uptake. EC rules do, however, require all vessels of 10 metres or over in length to keep a logbook of their activities which must include details of the quantities of TAC species caught and retained on board and the time and location of capture. Inshore vessels of less than 10 metres long are not obliged to carry logbooks but Member States are still required to monitor their landings to ensure that national quota limits are respected.

Figure 1 shows the sea areas surrounding the United Kingdom according to the ICES nomenclature used to denominate fish stocks in the North East Atlantic. The main areas, within which United Kingdom vessels are active, are the North Sea (Area IV), West of Scotland and Rockall (Area VI), the Irish Sea (Area VIIa), the English Channel (Areas VIId and VIIe), the Bristol Channel and South East of Ireland (Areas VIIf and VIIg) and Western Waters (Areas VIIh-k). The main stocks in these waters subject to TACs are listed in Tables 3 and 4.

Figure 1: ICES sea areas around the UK

Development of the UK quota management system

When the resource

Box Error! Bookmark not defined.: The Common Fisheries Policy

The EC's common fisheries policy operates in four key areas: a common structural policy, a common market organization, a

management component of the common fisheries policy was finally put into place in 1983, the UK Government had already instituted quota management arrangements for a number of stocks for which national quotas had

resource conservation and management system and an external policy (concerned with fisheries agreements with third countries).

The common structural policy and the common organization of the market both date back to 1971. In addition to provisions for common structural actions (which include aids for fleet renewal as well as capacity reduction programmes) the structural regime lays down certain fundamental conditions for fishing, notably the principle of "equal-access" of Member State's fishing fleets to each other's waters. The common market organization provides for a system of marketing standards, minimum prices and intervention arrangements (with compensation for products withdrawn from the market at minimum prices). The minimum price system also links in to a set of trade provisions designed to protect Community fishermen from imports at abnormally low prices.

In 1977 all the EC Member States extended their fishery limits out to 200 miles (except in the Mediterranean). Negotiations then began on a system to regulate catches within Community waters but largely because of the difficulty of reaching agreement on national TAC shares. The system was not finally adopted until 1983.

previously been agreed through the North East Atlantic Fisheries Commission (NEAFC). Vessels fishing for the Western mackerel stock and for the principal herring stocks, for example, were subject to weekly or fortnightly landings limits set according to vessel length, while daily or weekly limits had from time to time been applied for cod, haddock and whiting stocks in Areas IV and VI (set according to crew size). In addition, since 1980, separate allocations from the quotas for mackerel and the main herring stocks had been reserved for the relatively small pelagic freezer trawler sector (which, together with the purse-seiners, were the only UK fleet sectors under restrictive licensing before 1984).

In 1983 a much wider range of stocks became subject to quotas. As fishing effort increased over the next few years from an industry which was still expanding in domestic waters, particularly in the Area VII demersal fisheries, weekly (later monthly) landings limits were gradually extended to cover fishing for quota stocks by all vessels over 10 metres in length. Early in 1984, however, the Shetland Fish Producers' Organization, one of 14 producers' organizations (POs) then established in the UK (see below), successfully applied to the Government to be given its own annual allocations from the Area IV and VI haddock quotas to manage on behalf of its members. These allocations were based on the historic share of the UK's haddock catches landed by Shetland PO members. Later that year, a number of other POs (as well as a few large fishing firms) were given allocations for the Area IV and VI cod quotas on a similar basis, while in 1985 annual quotas were allocated to POs for Area IV/VI cod, haddock, whiting and saithe as well as Area IV herring. By the following year, most of the POs whose members were active in the North Sea and West of Scotland areas were receiving annual quota allocations for most of the stocks in these areas. From 1985 annual allocations from the main mackerel and herring quotas were also granted to *individual* freezer trawlers and purse-seiners instead of parts of the quota being reserved for these sectors as a whole.

The system of PO quota allocations was extended to include quotas in the Irish Sea in 1990 and in the remainder of Area VII in 1991. By this time all the UK POs were involved in managing quotas on behalf of their members. The annual quota allocations to POs were now routinely based on the combined landings "track

records" of each PO's over 10 metres membership during the previous three years (in the case of demersal stocks), as a percentage of the total landings by UK vessels over the same reference period. The reference period was two years in the case of pelagic stocks until 1995 but is now three years for all stocks except Western mackerel. Fishing for quota stocks by vessels not belonging to a PO, as well as by PO member vessels whose PO had not requested an allocation for a particular stock, continued to be regulated directly by the Government by means of (usually) monthly landings limits.

Until 1995 the POs could more or less freely decide each year which quotas they wished to manage. Given the track record-based allocation system, this produced some predictable results. Firstly, it was possible for POs to "build up" relatively strong track records for particular stocks while fishing against Government imposed landings limits prior to requesting an annual allocation. Conversely, it was also possible for a PO to decline an allocation in one year if its performance in the immediately preceding three years would otherwise have meant stricter quota controls for its members than they would have faced fishing against national monthly limits. Secondly, members of some POs had allegedly been reporting catches as coming from areas in which they did not have quota allocations when they should have been counted against their PO quotas. In order to simplify the management system, and to press the POs into accepting more management responsibility, in 1995 the Government obliged POs to accept allocations for all demersal species quotas (however small some of the allocations might be), although the management of pelagic quotas remained optional.

While the Government retains overall responsibility for quota uptake at the national level, the POs are free to manage their quotas as they wish: the means of internal quota allocation employed by different POs are examined later in this paper. POs can undertake quota swaps with other POs at any time as well as with companies receiving individual vessel allocations for pelagic quotas. Until 1993 all such swaps had to balance in terms of "cod-equivalents". In 1993 this restriction was removed, although some exchange of fish still had to take place, while for 1996 quota "gifting" was allowed for the first time.

During the period from 1984 to 1993 the size and capacity of the UK fleet was progressively restricted through the development and refinement of a limited-entry licensing system (see Hatcher and Cunningham 1994). In 1984 the number of licences authorizing fishing by over 10 metre vessels for the most heavily targeted stocks was restricted for the first time. By 1990 all licences for over 10 metre vessels had been restricted and in 1993 restrictive licensing was finally extended to the inshore (10 metres and under) sector. Simple length restrictions on the transferability of licences were replaced in 1990 by a system of "capacity unit" penalties which was designed to let the licence transfer market play a part in reducing UK fleet capacity in line with EC targets. The system also allowed licences to be aggregated so that an operator could trade up to a larger vessel.

Before 1995 individual landings track records were normally attached to vessels rather than licences. Exceptions were made where a licence was transferred onto a vessel new to a fishery (ie. with no track record) or where a licence aggregation was undertaken, in which case the track records of the old licensed vessels were aggregated onto the new vessel. From 1995, however, track records were formally attached to licences.

As various fleet sectors were restricted by ceasing to give out new licences, an increasingly active market in licences developed. This was stimulated by the

introduction of the licence aggregation facility in 1990 and by the attachment of track records to licences in 1995. For the most part, the Government has taken no interest in the details of licence transactions and reliable data on this market are unavailable. Evidence from the UK fishing press, however, suggests increasingly high prices.

In 1994 the Government introduced a provision to enable POs to retain the landings track record of a member vessel whose owner would agree to surrender his licence (in practice by the PO paying financial compensation to the owner for decommissioning his vessel). A PO can arrange to "ring-fence" the additional landings track record, so that if any of the remaining member vessels subsequently leave the PO, that proportion of their track record which is attributable to extra quota obtained in this way can be retained within the PO.

As a result of these various developments the UK quota management system now contains a number of market features, despite the fact that the annual allocation mechanism continues to be based on past catch history. New entrants can obtain *notional* quota entitlements by purchasing a licence with its attached landings track record. Individual vessels can also increase their track record through licence aggregations, while POs can enhance their collective quota allocations through quota trading and through track record purchases as described above. POs can, of course, also protect their quota allocations to some extent by only admitting new members with good track records, although this conflicts with a strict interpretation of EC rules on non-discrimination by POs (see Box 2). Individual vessel allocations are granted directly by the Government only to purse-seiners and freezer trawlers in respect of the main mackerel and herring stocks (where the vessels are not in membership of a PO taking an allocation for these stocks). While PO allocations are normally only revised at the beginning of each year, such vessels can transfer their notional allocations at any time between POs or between a PO allocation and an individual allocation. Since 1990 these vessels have also been able to arrange for up to 70% of their individual allocations to be fished by other similar vessels within the same ownership or within the same PO.

Finally, this quota management system still only applies to vessels over 10 metres in length. Fishing for quota stocks by all vessels of 10 metres and under, whether or not they belong to a PO remains under direct Government control. A common pool of quota is retained for this sector and the fisheries are normally regulated only by means of closures as and when the allocations are exhausted (mid-year suspensions are sometimes imposed).

Box Error! Bookmark not defined.: Producers' Organizations

Under the EC's common fisheries policy, POs play a central role in the common organization of the market. They are defined as "associations in private law freely constituted between legal or physical persons, dedicated to the production and marketing of fishery products, including fishing vessel owners and crews, provided that the latter bear part of the financial risk involved in fishing operations and the marketing of catches". Their principal objectives are to encourage "rational" fishing and to improve conditions for the sale of their members' products. Means, specified for achieving these objectives, include the concentration of supply, the adoption of production and marketing rules (including measures designed to improve product quality and to adapt the volume of supply to market requirements) as well as optional recourse to various market intervention schemes to support prices (notably the fish withdrawal schemes).

In order to be officially recognized as a PO within the meaning of EC legislation, an organization must fulfil certain conditions. In particular, it must be economically significant according to certain minimum membership and/or production criteria within the area for which recognition is sought, it must not discriminate between producers "particularly on grounds of nationality or place of establishment", and it must allow members freely to leave the PO. Many of the supply and selling functions specified for POs would normally fall foul of the competition rules set out in the EC Treaty (which prohibit cartels) but by virtue of their special role recognized POs are exempted from these rules. However, they must not normally hold a dominant position on the market.

From 1993 the scope of the role defined for POs in the legislation was extended to include, at the discretion of Member States, the management of national catch quotas. In effect this merely gave formal recognition to their incorporation into the existing quota management systems of certain Member States (notably the UK): there is no requirement for POs to be given responsibility for the management of catch quotas, or indeed to have any other direct involvement in the resource management system.

Producers' organizations in the UK

POs, as distinct from other types of fishermen's organizations, are an institution of the EC. Their principal functions as laid down by Community legislation relate to the implementation of key aspects of the common organization of the market in fisheries products (see Box 2). There are now a total of 19 recognized POs in the UK, five of which were formed within the last few years specifically in order to manage separate quota allocations under the UK management system.

At the beginning of 1996 there were a total of 8,311 fishing vessels on the UK register, although 5,372 of these were 10 metres or under in length (not all of them active). Of the 2,939 vessels over 10 metres in length, 1,725 belong to a PO. In terms of gross registered tonnage and total engine power, the POs now include 80% and 77% respectively of the entire over 10 metre fleet sector. The mean length, tonnage and power of PO member vessels (over 10 metres) are 20.8 metres, 86 GRT and 359 kW respectively, compared to 13.8 metres, 32 GRT and 162 kW for non-member vessels in the same category. Overall, vessels of 10 metres or less are under-represented by the POs, largely because they can offer these inshore vessels no quota management facility. The PO sector includes only some 3.5% of all vessels of 10 metres or less: in total around 11% of PO member vessels are 10 metres and under in length compared to 65% for the UK fleet as a whole. Ten of the POs have no member vessels at all of 10 metres or less while only the CFPO includes an appreciable number of inshore members (42% of the total membership) (see Table 2).

Table 1: PO membership in the UK fleet in 1996

Sector	n	GRT	Kw
Over 10 m	2,939(35%)	182,526(91%)	800,558(76%)
[PO vessels]	[1,725(59%)]	[146,322(80%)]	[614,103(77%)]
[non-member vesels]	[1,214(41%)]	[36,204(20%)]	[186,544(23%)]
10 m & under vessels	5,372(65%)	18,944(9%)	257,115(24%)
Total fleet	8,311(100%)	201,470(100%)	1,057,673(100%)

Table 2 lists all the UK POs by name together with the year in which each was first

recognized, the current number of member vessels and the mean length and registered tonnage of the over 10 metre membership. The distribution of the POs around the UK is shown in Figure 2, according to where their administrative offices are located (in most cases also the main port of landing for the membership).

The POs range in size from 11 to 450 member vessels in total. In general the smallest POs in terms of numbers are those including predominantly larger vessels, but some POs have a very wide size range of vessels in membership. Most of the POs have a relatively discrete local or regional identity (a notable exception being the large SFO) although on the North East Coast of England there is a considerable overlap of areas of representation. Some, however, have recently begun to attract members from well outside their "traditional" catchment areas because of particular aspects of their quota management functions (particularly the FPO, SWFPO and YAFPO). A number of the POs have a rather distinct sectoral identity. For example, the FPO and the NPO together include all the UK's remaining distant water trawlers (although the FPO also includes a number of much smaller vessels). The WWCFPO represents many of the Spanish-owned vessels in the UK fleet and the NSFO represents a number of largely Dutch-owned beam trawlers. The LFPO is remarkable in that all the current member vessels (also beam trawlers) are owned by a single company. Most of the large pelagic vessels in the UK fleet are in the SFO and the SFPO.

Table 2: Producers' organizations in the UK and their membership in 1996

Producers' organisation	Year of recognition	No. vessels over 10m*	Mean length	Mean GRT
Aberdeen Fish Producers' Organization (AFPO)	1974	69 (0)	23.2	88
Anglo-North Irish Fish Producers' Organization (ANIFPO)	1976	75 (10)	18.5	53
Anglo-Scottish Fish Producers' Organization (ASFPO)	1975	138 (8)	16.8	37
Cornish Fish Producers' Organization (CFPO)	1975	181 (130)	16.9	41
Fife Fish Producers' Organization (FIFPO)	1980	36 (3)	19.6	103
The Fish Producers' Organization (FPO)	1973	43 (0)	31.1	379
Fleetwood Fish Producers' Organization (FFPO)	1983	27 (6)	17.5	42
Grimsby Fish Producers' Organization (GFPO)	1981	69 (0)	17.7	37
Lowestoft Fish Producers' Organization (LFPO)	1993	11 (0)	35.6	286
North East of Scotland Fish Producers' Organization (NESFO)	1980	115 (0)	23.1	79
North Sea Fishermen's Organization (NSFO)	1993	40 (0)	32.6	226
Northern Producers' Organization (NPO)	1995	14 (0)	26.4	190
Northern Ireland Fish Producers' Organization (NIFPO)	1976	160 (20)	18.5	51
Scottish Fishermen's Organization (SFO)	1974	450 (0)	21.3	76
Shetland Fish Producers' Organization (SFPO)	1982	65 (0)	27.0	241
South Western Fish Producers' Organization (SWFPO)	1974	103 (11)	18.9	59
Wales and West Coast Fish Producers' Organization(WWCFPO)	1993	47 (0)	35.4	227
West of Scotland Fish Producers' Organization (WSFPO)	1995	51 (6)	13.4	20
Yorkshire and Anglia Fish Producers' Organization (YAFPO)	1977	38 (3)	16.5	45

*Number of member vessels 10m or under in length shown in parentheses

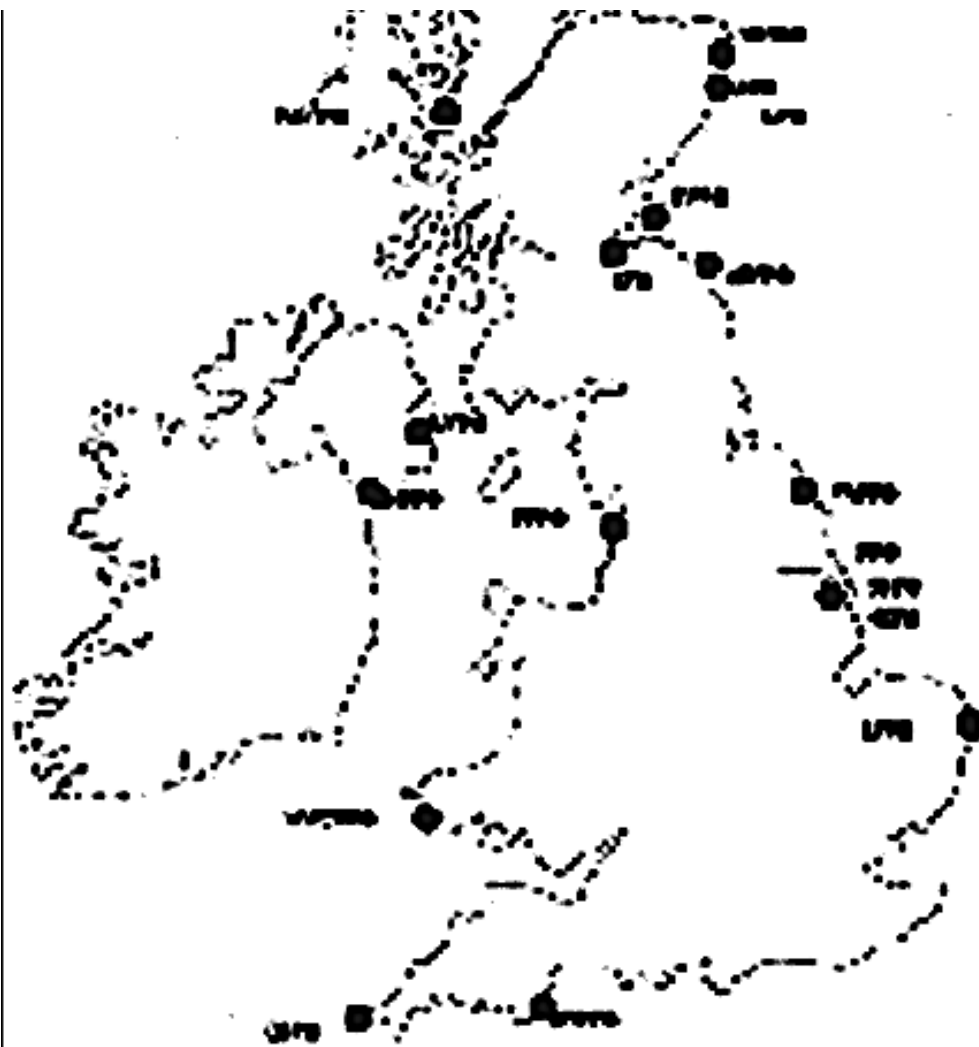


Figure 2: Locations of POs in the UK

Quota management by the UK producers' organizations

Table 3 shows the proportions of the main UK demersal quotas, which were allocated to POs and to the non-member (over 10 metre) sector for 1996. For many stocks, the POs hold over 90% of the quota. For only relatively few stocks do over 10 metre non-PO vessels represent a significant amount of fishing activity. Fisheries in which non-PO vessels are still important include the *Nephrops* (langoustine) fisheries in the North Sea and West of Scotland and the flatfish (sole and plaice) fisheries in the Channel. Significant amounts of the quotas for high-value demersal species in Areas VI and VII (hake, megrim, anglerfish, pollack) are also fished against by non-PO vessels, particularly a group of large Spanish-owned netters and trawlers (those

which are not in the WWCFPO). Overall, PO quota allocations account for some 96% by weight of total demersal quotas in Area IV, 91% in Area VI and 84% in Area VII.

All the UK POs took demersal quota allocations in 1996. Since for each PO the size of its quota for each stock clearly depends on the track records of its member vessels over the previous three years, different POs have different quota "portfolios" according to the usual fishing grounds of the membership and their fishing method/target species. Not surprisingly there is a considerable degree of geographical/sectoral specialization and concentration. For example, the five big Scottish POs (AFPO, ASFO, NESFO, SFO and SFPO) together hold around 92% of the North Sea haddock quota and (together with the GFPO) some 77% of the North Sea cod quota, while just two POs (the LFPO and NSFO) control nearly 55% of the North Sea plaice quota. The AFPO, NESFO and SFO also hold the biggest demersal quotas in Area VI. Over 50% of the sole and plaice quotas in Area VII are allocated to the CFPO and the SWFPO, while 60% of the quota for Western hake is held by the CFPO, SFO and WWCFPO. The CFPO alone controls almost half of the Area VII pollack and megrim quotas and a third of the Area VII anglerfish quota. The two Northern Irish POs (ANIFPO and NIFPO) together have some 90% of the *Nephrops* quota in Area VII while nearly half the *Nephrops* quotas in Areas IV and VI are held by the SFO.

Since all the POs now have allocations for all demersal quotas, each PO inevitably has a number of zero allocations as well as trivial allocations for quotas in areas in which its member vessels do not usually fish. These allocations of just a few tonnes are in many cases only useful in quota trading with other POs.

Table 4 shows the allocations of the three main UK pelagic quotas in 1996 to POs and to individual vessels. Only three POs have quota allocations for these stocks (the SFO, SFPO and NIFPO) but together they account for around three-quarters of the quotas. In each case, approximately half of the entire UK quota is controlled by the SFO and around 15-20% by the SFPO, with relatively small allocations to the NIFPO. Almost all the quota not allocated to these POs is distributed as individual allocations to nine independent vessels. A few of the other POs have allocations of the UK quotas for minor pelagic stocks (including other herring stocks and sprats).

Table 3: Allocations of main UK demersal quotas to POs and non-PO vessels in 1996

Quota stock	UK quota (t)	% to POs	% to non-members
Area IV (North Sea)			
Cod / cabillaud	54,860	92.0	3.5
Haddock / eglefin	67,830	99.3	0.6
Whiting / merlan	29,060	98.4	1.2
Saithe / lieu noir	8,910	98.8	1.0

Plaice / plie	22,290	98.8	1.0
<i>Nephrops</i> / langoustine	13,135	84.9	10.3
Area VI (West of Scotland)			
Cod / cabillaud	6,640	97.5	2.4
Haddock / eglefin	18,090	97.5	2.4
Whiting / merlan	5,730	96.2	3.6
Saithe / lieu noir	2,210	98.1	1.7
Plaice / plie	1,450	94.0	5.7
Anglerfish / baudroie	2,705	89.4	10.4
Megrim / cardine	1,520	92.0	7.7
<i>Nephrops</i> / langoustine	12,305	73.0	15.6
Area VII (Channel and Western waters)			
Sole VIIa	220	84.1	6.8
Sole VIId	895	54.5	8.4
Sole VIIe	410	91.5	3.4
Sole VIIfg	280	90.0	1.8
Sole VIIhjk	120	99.2	0.8
Plaice / plie VIIa	915	83.3	12.1
Plaice / plie VIIde	2,190	64.5	14.5
Plaice / plie VIIfg	255	77.3	3.9
Plaice / plie VIIhjk	170	97.6	2.4
Cod / cabillaud VIIa	2,460	94.8	3.0
Cod / cabillaud VIIb-k	1,660	64.7	9.6
Whiting / merlan VIIa	3,475	96.2	2.4
Whiting / merlan VIIb-k	2,860	75.2	12.8
Saithe / lieu noir	2,150	93.1	5.0
Anglerfish / baudroie	4,255	79.7	15.2
Megrim / cardine	2,720	87.1	11.4

Hake / merlu VI/VII	5,140	77.7	21.3
Pollack / lieu jaune	2,570	77.7	11.4
<i>Nephrops</i> / langoustine	7,545	96.6	2.0

Table 4: Allocations of main UK pelagic quotas to POs and individual vessels in 1996

Quota stock	UK quota (t)	% to POs	% to ind. vessels
Western mackerel / maquereau	144,940	74.5	24.6
North Sea herring / hareng	45,640	75.4	24.6
West of Scotland herring / hareng	46,360	79.3	20.7

Since the POs began to take on quota management responsibilities, historically most have allocated their quotas internally by means of flat-rate monthly landings limits, with each member vessel facing the same monthly limits irrespective of its size and, more significantly, its individual landings track record. The regime under which vessels in such POs have operated is therefore similar to that applied to the non-PO sector, although the non-PO limits for the main demersal stocks in Areas IV and VI are usually set differently for vessels in different length bands (a system also used by the AFPO). One advantage to the members of the PO of a quota allocation, however, is a degree of (collective) security of fishing opportunities in comparison with non-PO vessels who must fish against the monthly landings limits imposed by the Government. While segments of the UK fleet were still open to new entrants (and to the movement of effort between segments to a greater extent than is now possible under various licensing restrictions, particularly on beam trawlers) this relative security was particularly important and hastened the adoption of quota allocations by the POs. In addition, of course, there have also been advantages in the ability of relatively small and co-operative groups of vessel owners to collectively manage their quotas more responsively (to local seasonal factors, for example).

The principal advantage to a PO of quota allocations, however (at least for its main target stocks) undoubtedly now lies in the extent to which the average quota shares to the members of the PO are greater than the corresponding averages for vessels in the non-PO sector. One consequence of this is that for the POs that have kept their allocations as collective quotas, the size of the track records of prospective new member vessels have been of some concern. Even taking into account the few hundred vessels in the over 10 metre non-PO sector which target only non-quota species (particularly shellfish) there has clearly been a considerable concentration of quotas into POs. Indeed in the last few years, following pressure from non-PO vessel owners, the Government has established minimum "floor" levels for certain stocks in the allocations to both the over 10 metre non-PO sector and the 10 metres and under sector.

An exception to the "traditional" pattern of collective PO quotas was shown by the FPO, whose membership included most of the large fishing firms, which were also given demersal quota allocations during 1984-5. Since 1986 the FPO has allocated its quotas as annual individual quotas (IQs) to member vessels and companies according to the size of their track records, a natural development of the company quotas previously allocated to FPO members.

Table 5: Methods of quota management employed by POs in the UK

PO	Monthly catch limits	Individual (annual) quotas
AFPO	For all stocks: set according to vessel length	---
ANIFPO	For all stocks: flat-rate	---
ASFPO	For all stocks: flat-rate	---
CFPO	For all stocks: flat-rate	---
FIFPO	For all stocks: flat-rate	---
FPO	---	Individual vessel and company quotas in use since 1986
FFPO	For all stocks: flat-rate	---
GFPO	For all stocks: flat-rate	---
LFPO	---	Company quotas
NESFO	For all stocks: flat-rate	(One member vessel receives an individual pelagic allocation from Government)
NSFO	---	Individual vessel quotas for all stocks
NPO	---	Individual vessel quotas for all stocks
NIFPO	For all stocks: flat-rate	---
SFO	For all demersal stocks: set according to vessel type (fishing method)	Individual vessel quotas for pelagic stocks since 1990
SFPO	For all demersal stocks (except in the case of two vessels); flat-rate	Individual vessel quotas for pelagic stocks since 1986; individual quotas for demersal stocks to two large trawlers since 1987 and 1995
SWFPO	For all stocks except sole: flat-rate	Individual vessel quotas for sole since 1994
WWCFPO	---	Individual vessel quotas for all stocks
WSFPO	For all stocks: flat-rate	---
YAFPO	For Area IV haddock, saithe and sole (except for beam trawlers): flat-rate	Individual vessel quotas for Area IV cod (since 1989), sole (for beam trawlers since 1992), whiting and plaice (since 1995); also for all Area VII quotas (since 1995): members can aggregate individual quotas for companies or other groups

Table 5 summarises the quota management methods currently used by each of the recognized POs in the UK. Ten of the 19 POs still retain all their allocations as collective quotas and manage quota uptake by means of flat-rate monthly landings limits (although the AFPO sets different limits according to vessel length). Apart from the WSFPO (formed in 1995 principally in order to give separate representation to Scottish west coast *Nephrops* trawlers which had previously been members of the

large SFO) these POs have all been in existence since, before the beginning of the present quota management system. In contrast, those POs which were set up within the last few years have, again with the exception of the WSFPO, immediately introduced IQs (or company quotas). These POs all include relatively small numbers of large demersal vessels and were formed primarily for the purpose of managing quota allocations, rather than for the marketing functions provided for under the common fisheries policy (see Box 2).

Other POs have also introduced IQs, but for certain stocks only. Two of the big Scottish POs (the SFO and SFPO) allocate their pelagic quotas as IQs to the large purse-seiners/pelagic trawlers in their membership according to the track records held by these vessels. The SFPO also allocates IQs on the basis of track records to its two largest demersal trawlers. The YAFPO has implemented IQs for a number of stocks since 1989, while in 1994 the SWFPO introduced an IQ system for its sole quotas. The decision of these POs to allocate IQs has in some cases resulted in vessels joining from outside the PO's main membership area. For example, one fishing company based in the south of England recently took all its beam trawlers (with their track records in Area VII) into the YAFPO because this PO would effectively return the vessels' track records to them as IQs. Similarly, a group of small independently owned vessels fishing in the Channel joined the FPO because it would allocate to them a group quota based on their combined track records.

Most of the pelagic vessels in the SFO and SFPO would be able to receive IQs directly from the Government even if they were not members of a PO (although they would not then have access to EC intervention payments which are only available through recognised POs). In the case of demersal stocks, however, under the present management system vessels can only "realise" their notional individual quota allocations (based on their landings track record) by belonging to a PO which operates an IQ system - or by setting up a new PO (provided that the conditions outlined in Box 2 are met).

In all cases the principal reasons for the introduction of IQ systems are simple: to enable vessels to utilize quota when they choose, allowing landings to be better tailored to market demand and effort to be diverted at times towards non-quota species. All the POs using IQs allow their members to swap quota internally, but the track record based allocation system presents a problem in this respect. Although a PO may decide that internal swaps will be "without prejudice" to future allocations, any vessel subsequently leaving the PO will only carry with it its actual landings track record. For this reason, only some of the POs, which comprise mainly company-owned vessels, can realistically operate such an arrangement.

The facility for individual vessels to increase their own track records through the licence market is clearly only useful for demersal vessels which belong to a PO operating an IQ system. However, the facility introduced in 1994 for POs to retain the track records of member vessels, which surrender their licences, can be used to advantage both by POs operating collective quotas and by POs operating IQs (given all the distributional possibilities for the associated costs and benefits). Although in 1994 the retired licences had to come from vessels that had been in the PO for at least 3 years, this requirement was subsequently dropped. As a result, a PO can in effect now "buy in" track record from elsewhere by accepting a vessel into membership and then almost immediately surrendering its licence. Of the three POs, which have so far used this facility, one employs IQs (the NSFO) while two operate collective allocations (the SFPO and the GFPO). In the case of the SFPO, nearly 10% of the PO's demersal quotas are now attributable to track record obtained in this way (and "ring-fenced"). Recently the Shetland Islands

Council agreed to provide the SFPO with a £1 million loan to enable it to purchase additional track record, on the condition that the extra entitlement would be retained within the PO to be used to help provide additional fishing employment in the area by aiding new entrants to the local fleet.

Discussion

When the "capacity aggregation" scheme was introduced into the UK's licensing system in 1990, the Government announced that it viewed the move as a first step towards the possible introduction of individual transferable quotas (ITQs). Although this idea was rejected by most of the industry at the time, the system that has subsequently developed (largely in response to incremental demands from the industry) has a number of market elements. It is certainly possible under the existing system for vessels to operate with individual quotas and to acquire additional quota entitlements through the licence market, and therefore sections of the industry are close to operating under an ITQ system. However, the IQs it is possible to realise under this system differ in several important respects from ITQs (see eg. Squires *et al* 1995, Grafton 1996). Firstly, the track record based allocation mechanism means that any unused quota results in less quota in the following year: there are no permanent quota allocations. One of the consequences of this is the internal swap problem faced by POs operating IQs. Secondly, there are no durable and legally defensible rights involved. The UK quota management system is an entirely informal arrangement between Government and industry, and while track records are now nominally "attached" to licences, no catch rights are actually specified in the licences. Moreover, the licences themselves remain in the gift of the Government and can be revoked at any time. An interesting feature of the UK system is that, despite the fact that the licences are transferable and are traded within a market, the Government has never sought to charge for their issue nor to collect any of the rent, which positive licence prices would imply being generated or anticipated (eg. Anderson 1985, Campbell and Lindner 1990). Nevertheless, their acquired value has clearly been recognized by Government: recent proposals for the 1996 vessel decommissioning scheme included a suggestion that the owners of decommissioned vessels should be allowed to retain the track records from the surrendered licences to be aggregated with the entitlement of another licence or sold on to a third party, so that lower bids for Government compensation could be made (in the event this proposal was rejected by the industry).

Because of its essentially informal nature, the UK quota management system can be described as a system of "co-management" according to the definition recently suggested by Townsend and Pooley (1995). In the context of distributed fisheries governance these authors distinguish the different forms of relationship between governments and either individual operators or "local fisheries management institutions" (LFMIs) according to the way in which management responsibility is distributed rather than to its extent. In this context co-management is more narrowly defined as a situation of shared responsibility between government and LFMI (after Pinkerton 1989) where the allocation of responsibility is not legally or constitutionally guaranteed. Interest in co-management systems (eg. Pinkerton 1989, Jentoft 1989, Jentoft and McCay 1995) has tended to focus on the democratic involvement of fishermen in decision-making, while often implicit rather than explicit is a concern for issues of social equity in the distribution of economic benefits, particularly regarding choices between democratic or private control over fishing rights (eg. Hannesson 1988, Townsend 1995).

The experience of delegating quota management responsibility to POs in the UK, however, reveals a rather complex situation. The POs may be broadly divided into two main categories: those that have retained quotas for the collective benefit of local or

regional industry groups (generally the longer established POs) and others which have been formed by smaller numbers of operators wanting to work wholly under an IQ regime. These different perspectives are to a great extent linked to their nature as organizations. While most of the older POs function as co-operatives both in practice and legally, and tend to include many individual vessel ownership's, all the "new" POs (apart from the WSFPO) have company status and include relatively few individual ownership's (just one in the case of the LFPO).

Although these new POs have met EC criteria for recognition, it is arguable that they are not the sort of organizations envisaged under EC market provisions: indeed they would probably not have been created at all had the UK quota management system provided for quota allocations to organizations - corporate or co-operative - other than POs.

The situation is complicated because some POs among the former category are clearly willing (and able) to take advantage of the developing market in quota entitlements in order to secure additional quotas for their members (notably the SFPO) or have recognised advantages to the implementation of internal IQ systems for key target stocks. Other POs in this category are opposed to any developments that are viewed as possibly leading to a system of ITQs, because of familiar concerns about concentration of ownership, buying of quota by foreign interests (something that is effectively happening in any case within the EC) as well as objections in principle to resource privatization.

Recently, for example, a number of POs have been advocating a change from the existing track record based allocation mechanism to a system of fixed (percentage) quota shares. The rationale for this is straightforward. The track record based mechanism encourages fishing in order to maintain quota rather than for the market and makes diversification difficult, as well as giving an incentive for over-reporting of catches or "ghost fishing". A system of fixed quotas would therefore have clear advantages for the "collective" POs as well as facilitating internal quota swaps for those POs operating IQs. Because any allocation system has to deal with the movement of vessels between POs, however, it is almost inevitable that vessels would formally be allocated IQs by the Government, at least nationally. Given the market elements already present in the system, there would be a significant degree of quota transferability. Sections of the industry that are already in favour of ITQs might then seek to press the Government into implementing an ITQ system (particularly for pelagic stocks where IQs are already directly allocated), while others might see benefits in realising their individual allocations. The POs which favour fixed quotas, however, argue that if the system continued to make it only possible to realise IQs (or ITQs) within membership of a PO that chose to use such a system of allocation, a degree of (local) collective quota management responsibility could be maintained while retaining the efficiency benefits of transferability.

If further development of the UK quota management system did result in a "final step" towards an ITQ regime through industry demands, this would be in contrast to the experience in most other countries where, as Hannesson (1996) notes, ITQ regimes have tended to be initiated by public officials rather than by the industry.

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