

# UK fisheries statistics methodology

Guidance on how data on landing statistics are collected and processed by fisheries administrations in the UK is available here: <https://www.gov.uk/guidance/fishing-activity-and-landings-data-collection-and-processing#data-revisions-year-to-date-figures>.

The below methodology focuses specifically on the methodology for the sea fisheries statistics publication, while the guidance focuses on the processes for the breadth of landing data received, processed and used in multiple reports.

## **.1 Fleet size and composition**

Statistics on the UK fishing fleet since 1990 have been based on the fleet of fishing vessels as registered with the Register of Shipping and Seamen, part of the Maritime and Coastguard Agency which is an executive agency of the Department for Transport. Information provided by the Register includes the length (overall and registered), breadth, gross tonnage, power, age and material of construction. Information on the fishing fleets of the Isle of Man, Guernsey and Jersey are supplied by the respective registering authorities. Prior to 1990, the statistics were based on fishing vessels known by Administrative Departments to be active.

Statistics on the size of the UK fishing fleet are complicated by the fact that the European Union (EU) has progressively revised the methodology used to determine vessel tonnage for the fishing fleet from various national and international standards, previously collectively called Gross Registered Tonnage (GRT), to a common standard based on the International Tonnage Convention 1969 (ITC69) and known as Gross Tonnage (GT). A phased programme of re-measurement was introduced in the UK in 1996 which was completed by the early part of 2004.

Licensing of vessels first applied in 1977 and covered only fishing vessels over 40 feet (12.14 metres) in certain fisheries. Following the adoption of the European Union's Common Fisheries Policy, the UK designated a number of fish stocks as pressure stocks and introduced a restrictive licensing scheme for vessels fishing those stocks. The licensing regime initially only covered vessels over 10 metres registered length, but its coverage has been progressively extended over the years.

- In February 1990 the licensing regime was extended to vessels of over 10 metres overall length fishing for quota stocks.
- Later in 1990 restrictive licensing was extended to cover all fishing by vessels over 10 metres overall length with the exception of those fishing for salmon and migratory trout which were covered by a separate regime.
- From May 1993 licensing was extended to vessels of 10 metres and under overall length.

Statistics on the UK fishing fleet in this publication are based on the fleet of fishing vessels as registered with the Register of Shipping and Seamen. To this is added details of fishing vessels as registered with the Crown Dependencies (Isle of Man and the Channel Islands) to form the full UK fleet, details of which are reported to the European Commission on a regular basis and recorded as part of the EU Community Fleet Register.

The UK fleet has been broken down for analysis by individual country based on the administration ports where vessels were licensed as at the end of 2017. Vessels which are registered but do not have an administration port at this time are not counted against any country.

## **.2 Fish Producer Organisation membership**

Fish producer organisations are institutions set up in accordance with EU regulations to improve the market for their members' catches. In the UK, FPOs are also granted responsibility by Fisheries Administrations for the management of fish quotas for vessels in their membership.

Vessel owners notify UK Fisheries Administrations when transferring between FPOs for the purposes of quota management. A comprehensive database of membership of FPOs is maintained which augments the vessel data provided by the Register of Shipping and Seamen.

## **.3 Fishers numbers**

Data on fishers' numbers are collected separately by the Marine Management Organisation (MMO) for England, Marine Scotland, the Department of Agriculture, Environment and Rural Affairs for Northern Ireland (DAERA) and the Welsh Assembly Government (WAG). The Departments in Jersey, Guernsey and the Isle of Man do not contribute data on fishers' numbers.

In Scotland and Northern Ireland, staff in coastal offices are issued with a census of all vessels in their responsibility and asked to provide data on the number of part-time and regular fishers on each vessel. Marine Scotland and DAERA process and compile these data to provide estimates of fisher's numbers on vessels at each port of administration.

In England and Wales, a census of fishing vessels over 10 metres in overall length is performed. For the large number of fishing vessels 10 metres and under in length, a stratified sample of vessels is taken, with strata defined by administration port, vessel length and gross tonnage. A 20 per cent sample is drawn from each stratum. As in Scotland and Northern Ireland, staff in coastal offices provide data on the number of part-time and regular fishers on each vessel in their administration based on enquiries and local knowledge. All staff are provided with clear guidance on how to complete the survey.

From 2010, revised guidance was issued to staff on how to complete the survey. For the purposes of the survey, a fisher is defined as a person working at sea on a commercial fishing vessel, such as skippers or crew members. The definition excludes persons not working at sea, such as administrators and land-based processing staff. Fishers are classified as regular or part-time according to whether commercial fishing is their main occupation.

Data collected for England and Wales are processed by the MMO. Checks are made on the quality and reliability of data returned and every effort is made to minimise non-response. Where no data were available on fishers' numbers for a vessel the value was assumed to be the average number of fishers on vessels in the same stratum, such that no bias was caused by non-response. Estimates from the survey for England and Wales are combined with those supplied by Marine Scotland and DAERA to provide overall UK estimates.

## **.4 Activity and landings**

Statistics on fishing effort and landings are calculated using data collected and processed by officials of the various Fisheries Administrations in the UK, namely the MMO, Marine Scotland, DAERA, WAG and Departments in Jersey, Guernsey and the Isle of Man.

The main legislation used to collect these data is:

- (i) the EU fisheries legislation on keeping and submitting logbooks and providing landing declarations and sales notes, primarily Council Regulation (EC) No. 1224/2009 (the 'Control Regulation').
- (ii) general powers under the Sea Fisheries (Conservation) Act 1967 under which Ministers granting a licence can require the master, owner or charterer of the vessel named in the licence to provide such statistical information as required. These powers were widened in the Sea Fish

(Conservation) Act 1992 to cover other types of information and the form in which it is to be supplied.

The method of data collection depends on the length of the vessel.

#### *Data collection for vessels over 10 metres in overall length*

Data collected on fishing effort by over 10 metre vessels come primarily from the fishing logbook. Two additional sources are used to collect data on landings by over 10 metre vessels: landing declarations and sales notes.

The fishing logbook captures data on fishing activity by individual vessels by trip, and for each day of activity within a trip. This includes details of the catch, by species, in terms of the presentation and quantity of fish retained on board. Information is also collected on the fishing gear used and the ICES division, rectangle and zone for the activity. Supply of logbook data is mandated by legislation for all vessels over 10 metres overall length in respect of catches of all species. Logbook data for UK vessels must be submitted within 48 hours of landing to UK authorities; this includes landings into foreign ports.

Landing declarations provide information on the weight and presentation of fish landed by species. As with logbooks, landing declarations must be submitted to authorities within 48 hours of completion of the landing.

Sales notes are required in respect of first sales of fish and fishery products. For paper declarations, sales notes for first sales of fish must be submitted to UK Fisheries Administrations within 48 hours of sale by the registered buyer of the fish, except at designated auction centres where the registered seller has responsibility. This reduces to 24 hours if they are required to report sales notes electronically (see information below in the section "Requirements to report fishing activity data electronically").

Requirements set out in EU legislation to require the submission of logbook and landing declaration data electronically have in recent years been phased so that now virtually all UK vessels 12 metres and over in overall length are required to report their activity data by electronic means only. This phasing out of paper reporting was introduced on a vessel by vessel basis as on-board systems were installed, checked and tested through a period of double-running before vessels switched over to electronic-only reporting. Additionally, from 1 January 2009, buyers and sellers with an annual turnover of first sale fish of more than 400,000 euro have been required to submit sales notes electronically; this threshold was reduced to 200,000 euro from 1 January 2011. A UK Electronic Reporting Systems (ERS) Hub has been set-up to collect, process, and store these electronic data.

#### *Data collection for vessels 10 metres and under in overall length*

For 10 metre and under vessels, there is no statutory requirement under either EU or national legislation for fishers to declare their catches. Historically, information for this sector has been collected with the co-operation of the industry: it comprised log sheets and landing declarations voluntarily supplied by fishers as well as sales notes and assessments of landings collected from market sources and by correspondents located in the ports. This collection of data has now been replaced after the introduction in September 2005 of a scheme of registration for buyers and sellers of first sale fish (see above). Sales notes are now used in addition to the voluntary information from fishers.

During 2005 and 2006, UK Fisheries Administrations introduced a system of restrictive licensing for activity targeted at shellfish. As part of this system, new reporting requirements were introduced involving a requirement for fishers fishing with under 10 metre vessels to complete diaries of their daily activity which needed to be submitted on a monthly basis. Summary information from these diaries is in use in Northern Ireland and it is used alongside other data in other parts of the UK, but the main source of activity data in the rest of the UK is the sales notes data. This helps to ensure

consistency with the activity data for other types of fishing activity that are also derived from the sales notes data. The diaries of activity are however an important source of information for the scientific assessment of the state of the local shellfish fisheries around the coast and as such the data in them are entered, collated and analysed by scientists at the fisheries laboratories around the UK.

### *Coverage*

Data collection for vessels over 10 metres overall length aims to achieve full coverage of activity by this sector of the fleet. For the sector 10 metres or under in overall length, landings are only reported where the fish are sold or data have been provided voluntarily, leading to reduced coverage<sup>1</sup>.

The reliability of the data collected is dependent on the information provided by fishers. Inspectors at port offices carry out a mix of manual and automatic checks on the information provided by vessel operators. These include a check between logbook information and that given in the sales notes or observed as landed as well as checks against other sources of information (e.g. satellite position reports, information from aerial and at-sea surveillance and inspection activity carried out by UK enforcement officers).

Despite legal obligations for fishers to declare their catches, a proportion of fishing activity remains unreported. This chiefly affects landings data and the effects on statistics on fishing effort are considered to be small. A 2009 study<sup>2</sup> jointly funded by the Department for Environment, Food and Rural Affairs and the Department for International Development estimated that between 2000 and 2003, illegal fishing in the northeast Atlantic amounted to between 5 and 13 per cent of reported catches of species studied.

The extent of illegal and unreported fishing by UK vessels is uncertain and varies across stocks. However, it is considered that the overall level of unreported fishing has been reduced in recent years following the introduction of a scheme of registration for buyers and sellers of first sale fish, and the implementation of Commission Regulation (EC) No. 1005/2008 establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing.

It should be noted that landings do not typically equate to total catches, as fish may be returned to the sea through a practice known as discarding. The degree of discarding varies by stock, and by the sector of the fleet involved. The figures presented in this publication should not be interpreted as total removals from the sea. However, with the implementation of the Landing Obligation whereby discarding of fish is prohibited, the number of discards will clearly fall. The obligation began in 2015 for pelagic species and is currently being phased in for other species in anticipation of a full discard ban in 2019 (Commission Delegated Regulations (EU) 2018/45, 2018/46, 2018/189 and 2018/190).

### *Data processing*

Information from log sheets, landing declarations, sales notes and other sources is keyed into computers connected to the main databases by government staff at port offices, or is transferred electronically from the UK ERS Hub. Details of the areas fished are taken from the logbooks and entered as codes for the ICES divisions and statistical rectangles. Where a statistical rectangle is split into different areas (e.g. part is in EU waters and part in Norwegian waters) an additional code is used to indicate the zone fished. Where a vessel fishes in more than one area in a single trip, the total amounts for the trip of each species, as given in the sales notes and landing declarations are

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<sup>1</sup> 2011 data showed an increase in reported landings into the Isle of Man. From 1 January 2011 the Isle of Man authorities became fully integrated with the data collection and recording systems operated by mainland fisheries administrations, enabling the inclusion of activity that was previously not available.

<sup>2</sup> Agnew DJ, Pearce J, Pramod G, Peatman T, Watson R, et al. (2009) Estimating the Worldwide Extent of Illegal Fishing. PLoS ONE 4(2): e4570.

allocated to the areas in proportion to the estimated quantities of the species taken from each area, as recorded in the logbook.

In many cases only the weight of fish landed is provided, as it is impractical to record the weight of fish at the time of capture due to working conditions. The landed weight may differ significantly from the weight of the fish as it was taken from the sea, in large part due to the processing of the catch on board the vessel (e.g. gutting, filleting, etc). To render these data comparable, the landed weights are converted to a live weight equivalent using standard conversion factors according to the species landed and its presentation (e.g. gutted, skinned, etc).

The complete fishing records are transmitted to the central computer systems where further checks are carried out on the data before they are reflected in the main landings databases. Activity and landings data for the UK are compiled in a central database containing key information from systems run by the MMO and Marine Scotland. The former holds information on all landings into England, Wales and Northern Ireland and the Isle of Man by UK vessels and of landings abroad by vessels administered by the MMO, WAG, DAERA and Isle of Man Department of Environment, Food and Agriculture. The latter provides figures for landings into Scotland by all UK vessels and landings abroad by Scottish administered vessels.

Regular checks are made on the quality of the data and unusual records referred to staff in coastal offices to confirm or correct as necessary. In addition, prior to publication of these data, amendments are made to records with extreme prices for the weight of fish sold and values imputed based on average prices for the same species.

The sale value of transhipped landings is also imputed using an average price. These are instances where fish may be landed in the UK, but it is transported (usually by road and ferry) out of the UK before it is sold. This usually happens to allow vessel owners to take advantage of higher market prices for some species of fish when sold at continental markets rather than in the UK. Note that this differs from transshipment at sea. This involves transferring fish between vessels before landing, which is banned within community waters.

Effort statistics for the UK are calculated using trip data from the fishing logbook to determine the time spent at sea with each gear in each ICES sub-division and rectangle. This is combined with information from the Register of Shipping and Seamen on the capacity and engine power of vessels in order to calculate fishing effort exerted in GT days or kW days. These data are aggregated for different sea areas and gear types to produce the statistics shown.

In some instances the spatial resolution of the data is not sufficient to permit exact attribution of time spent at sea to recovery areas defined by EU legislation. In the Cod Recovery Zone, it is assumed that all effort deployed in ICES sub-division IIIa occurs outside of Kattegat. In the Western Waters, it is assumed that effort occurring within ICES rectangles transected by the boundaries of the Biologically Sensitive Area (BSA) occurs within the BSA itself. In this way measures of effort in the North Sea and BSA may be overestimates.

Effort deployed in the Western Waters is classified according to the target species of the trip. This is determined using a decision tree approved by the Scientific, Technical and Economic Committee for Fisheries (STECF) of the European Commission. The target species is assigned on the basis of the gears used and the species composition of the vessel's landings.

#### *Changes in processing for UK Sea Fisheries Statistics 2012 onwards*

All mussel landings with a zero landings value, since 2008, have been removed from the dataset used to create all the tables in Chapter 3. These landings were identified to be landings of mussel seed which, rather than being sold for human consumption at this point are re-laid for aquaculture. They are then harvested and sold at a later stage. As these landings are not sold at the point of initial dredging they have been removed and the data recalculated.

In the calculation of average prices throughout Chapter 3, landings with a zero value have not been included in the calculation as inclusion would result in a lower average price. There are various reasons why landings may have a zero value. There are some fish which cannot be sold and therefore have a zero value e.g. undersize fish landed as part of catch quota work, or scientific dispensation landings which cannot be sold but must be recorded in sales notes to allow cross checks with landings declarations. There are also instances where fish are not offered for sale or are intended for sale later, and so are subject to takeover declarations. For the 2019 edition of Sea Fisheries Statistics, zero value landings into the UK have also had values added to better reflect the true value of fishing to the economy.

## **EU reporting requirements on fishing activity data**

As part of the EU legislation that established controls on fishing activity, limits are set in two key areas:

- (i) Fish quotas – limits on the level of fish that can be caught and landed related to the species of fish and sea area of activity.
- (ii) Fishing effort – limits in terms of the total fishing effort that can be exerted, usually in terms of the days spent at sea by vessels combined with a measure of their catching capacity such as engine power.

The legislation that sets out control limits in these two areas also includes requirements on Member States to report data on the uptake by their fishing fleets against these levels. However, the information reported to the Commission has to be collated in line with two conflicting requirements, that is to report accurate data that are available as at the time of submission, as well as meet the tight reporting deadlines for providing information to the Commission after the end of a period. For example, information for end year quota and effort uptake has to be reported by the 15<sup>th</sup> calendar day after the end of the period in question.

Following the reporting of data to the Commission, there are additional processes that need to occur to allow the “close-down” of a year for quota and effort management purposes, such as additional checks with the Commission and other Member States on data, the agreement of end year quota and effort swaps, and the agreement on banking and borrowing of fish quotas between years. This close-down is a necessary element within the management of fishing activity as it allows for the level of any overfishes for the previous year to be determined and penalties needed for the current year to be set. This needs to be done as early in the year as possible to ensure that both national administrations and the fishing industry know the levels of quota and effort they have to operate with, so that any detrimental effect on management of activity within the current year is avoided.

As part of ensuring the close-down process takes place as early as possible, the Commission sets out operational requirements related to reporting amendments to data. After initial submissions by 15 January, final data for the previous year’s quota and fishing effort uptake have to be submitted to the Commission by 15 February. There are, however, lags in the reporting of data on activity by fishers that include:

- The legislative requirement on fishers is to submit the reports on their operations within 48 hours of a landing taking place. This does not guarantee that fishing administrations receive this information within 48 hours, and we frequently experience significant delays in receiving documentation.
- Processing of documentation takes time as there is a significant amount of information reported on the logbook on the activity of vessels. The EU logbook system used for the vessels over 10 metres in length covers many different reporting obligations, thus the volume and complexity of data involved can lead to delays in data entry.

- The information received is thoroughly checked and validated before reporting to the Commission. This can delay the use of data.

In previous years a consequence of the early reporting deadline and the required close-down of a year has been that there were data entered and validated after the reports were submitted to the Commission. For the final reports on UK landings of quota species and fishing effort for 2013 onwards, a revised approach was taken which combines pre-validated data (from electronic logbooks and VMS systems) with fully validated data that have gone through the array of cross checks required under the EU Regulations. Additional validation processes were put in place to quality assure the pre-validated data prior to submission. It was not possible to include any estimates for landings where no information to inform authorities that a landing or fishing activity had taken place had been received.

The desire to reduce the impact of these lags in information is one of the key drivers for larger fishing vessels to move to electronic reporting of data on activity both in terms of the activity carried out by fishers at sea and also in terms of the land-based activity in terms of the sales notes associated with the first sale of the fish after landing, and so the requirements to report data electronically have been expanded over recent years. By the first half of 2015, all UK vessels 12 metres and over in length were submitting activity data electronically - vessels 12 metres and over in length accounted for 92 per cent of the total quantity of fish landed by UK vessels in 2018. In terms of the sales notes, these are usually reported by the merchants buying the fish, and for these first sales of fish within the UK in 2016, around 90 per cent of the tonnage of fish reported as sold from UK vessels were reported via electronic sales notes rather than paper documents. The electronic reporting of activity has helped to significantly reduce the lags in the monitoring and reporting of activity.

Data are prepared for the annual statistics publication at a point significantly after the close-down date for EU reporting systems. The publication is prepared to meet a wide range of uses. Apart from Tables 2.10 and 3.12, the data included incorporate the full picture of data held on UK fisheries administrations systems including information on any landing that is received after the EU close-down date and also all data that have passed through the complete checking and validation processes. This means that the publication gives as complete a picture as possible of total UK vessel activity in quantity and value terms. We therefore report on all landings and effort data, including that related to non-quota species (such as shellfish) which are of economic importance to the UK industry. See Appendix 5 for details of our policy with regards to data revisions.

## **Requirements to report fishing activity data electronically**

Requirements to report data on fishing activity through electronic reporting systems rather than by using the paper community logbook were first introduced by Council Regulation (EU) 1996/2006. A phased approach to the introduction of requirements to report data electronically was planned to cover all vessels over 15m overall length. These requirements were subsequently revised by Council Regulation (EU) No. 1224/2009 that introduced an extended deadline for the change-over as well as extending the requirements so that all EU fishing vessels over 12m overall length would eventually be required to report data by electronic means. The full requirements of the electronic reporting system are in Commission Implementing Regulation (EU) No. 404/2011. This sets out the various elements of activity during a fishing trip that must be reported – these cover all possible events and activities from the vessel leaving port to its return to land fish. More details on these requirements can be found on the MMO internet site and that of the European Commission via the links given below:

<https://www.gov.uk/government/publications/how-to-report-fishing-activities-using-an-electronic-logbook-software-system>

[http://ec.europa.eu/fisheries/cfp/control/technologies/ers/index\\_en.htm](http://ec.europa.eu/fisheries/cfp/control/technologies/ers/index_en.htm)

As stated earlier, by the first half of 2015, all active UK fishing vessels of 12 metres and over in length were reporting their data electronically. Both data reported electronically and on paper

declarations go through extensive validation checks, with the system used for electronic returns extended to cover the differences in structure and the additional elements required within it. The validation system also covers checks mandated by EU legislation that must take place on all landings data received via electronic or paper declarations. These checks are set out in Article 109 of Council Regulation (EU) No. 1224/2009, and require the data reported on fishing activity in logbooks, landing declarations and sales notes to be cross-checked for consistency and accuracy. Activity data reported in these documents are also compared with other sources of information, such as satellite surveillance information from vessels where available.

The fishing activity data reported to the European Commission under the various sets of EU legislation have all gone through these checks before inclusion in the reports, with any discrepancies identified going through investigation to identify the causes in case further action is required. The investigation of discrepancies involves a significant degree of resources in all four UK fisheries administrations, but the complex nature of these checks does lead to instances where there can be a lag in time between the activity taking place and it being included in the data reports. The change-over to electronic reporting systems has increased the length of the validation process in some cases as vessel operators have had to become used to their new role as data reporters using the new electronic systems.

## ***.5 Imports and exports***

HM Revenue & Customs (HMRC) is responsible for collecting the UK's international trade in goods data. The data are compiled from trade declarations made using commodity codes from the UN Tariff (HS Nomenclature) and its EU derivative the Intrastat Classification Nomenclature (ICN). These data are sent annually to the MMO, who process the data for this publication.

Landings of fish into the UK by foreign vessels are typically included in import statistics; however, statistics on imports and landings by foreign registered vessels may not strictly be comparable. Arrivals of fish should be reported where the economic owner of the vessel is outside the UK. In some cases, the countries of vessel registration and economic ownership may differ. A further complication is that import statistics do not include fish landed into the UK by foreign vessels which have a final destination outside the UK. Lastly, in some cases there exists a value threshold for declaration of imports. For these reasons it is possible that imports of fish may be below the quantity of landings reported for foreign registered vessels.

Exports include dispatches of fish by UK economically owned vessels when landing outside the UK. For similar reasons to those for imports, these are not directly comparable with landings by UK registered vessels abroad.

## ***.6 Household consumption and expenditure***

Data on household purchases are sourced from the Living Costs and Food Survey run by the Office for National Statistics. The Family Food module of the survey collects detailed quantity and expenditure information on household and eating out purchases of food and drink for use by the Department for Environment, Food and Rural Affairs (Defra).

The survey is an annual voluntary sample survey of private households. The survey is continuous, with interviews being spread evenly over the year to ensure that seasonal effects are covered. Each report details the number of people and households that completed a diary during the reporting year.

Each individual aged 16 and over in the household is asked to keep diary records of daily expenditure for two weeks. Information about regular expenditure, such as rent and mortgage payments, is obtained from a household interview along with retrospective information on certain large, infrequent expenditures such as those on vehicles. Simplified diaries are kept by children aged between 7 and 15.



Prior to 2008, the Living Costs and Food Survey was named the Expenditure and Food Survey. In 2001-2002 this replaced the National Food Survey and the Family Expenditure Survey. More detailed methodological information for all four surveys is available from Defra and the Office for National Statistics.

## **.7 Inflation**

The Retail Price Index (RPI) and Consumer Price Index (CPI) measures of inflation are produced by the Office for National Statistics. The Landed Price Index (LPI) is produced by the MMO.

Only the components of the RPI and CPI for fish prices are included in this publication. These were based on a 'basket' of six items: fresh white fish fillets, fresh salmon fillets, frozen prawns, canned tuna, fish fingers, and frozen breaded/battered white fish. These two price indices differ in three main ways:

- population base – the RPI excludes very high- and low-income households and hence the CPI has a wider population coverage than the RPI.
- formulae used to combine prices – the CPI uses a combination of geometric means and arithmetic means, whereas the RPI only uses arithmetic means.
- commodity coverage – the CPI excludes owner occupiers' housing costs and hence the RPI has wider commodity coverage than the CPI. The fish components of these indices have the same commodity coverage.

Further methodological details for the RPI and CPI are available from the Office for National Statistics.

The LPI is a simple price index used to assess the change in prices at first sale of fish landed into the UK by UK vessels. It is calculated using the average annual prices of 46 categories of fish species, using data collected on all landings into the UK by UK vessels. The prices are aggregated using a weighted mean, with weights chosen as the quantities landed (in live weight equivalent) of each species category into the UK in 2000.

## **.8 GDP for fishing**

The Office for National Statistics produces data on gross value added (GVA), gross domestic product (GDP) and output indices. GVA measures the contribution to the economy of each individual producer, industry or sector in the United Kingdom. It is used in the estimation of GDP, a key indicator of the state of the whole economy. In the UK, three theoretical approaches are used to estimate GDP: 'production', 'income' and 'expenditure'. When using the production or income approaches, the contribution to the economy of each industry or sector is measured using GVA.

The production approach to estimating GDP looks at the contribution of each economic unit by estimating the value of an output (goods or services) less the value of inputs used in that output's production process. The income approach to estimating GDP measures the incomes earned by individuals (e.g. wages) and corporations (e.g. profits) in the production of outputs (goods or services).

The link between GVA and GDP can be defined as: GVA (available by industry only) plus taxes on products (available at whole economy level only), less subsidies on products (available at whole economy level only) equals GDP (available at whole economy level only). In summary:

$$\text{GVA} + \text{taxes on products} - \text{subsidies on products} = \text{GDP}$$

Further methodological details on GDP and GVA are available from the Office for National Statistics.

## **.9 Other data sources**

### *EU fishing vessels*

The European Commission collects and publishes data on the characteristics of EU fishing vessels in the EU Fleet Register. Each Member State provides the Commission with a complete snapshot of their national register to the EU Fleet Register on the first working day of March, June, September and December each year, as required by Commission Regulation (EC) No 26/2004. Validation checks are performed to confirm the consistency of data submitted before the data are published in an online database.

### *EU landings*

EU member states exchange information on landings of quota species via the Fisheries Language for Universal Exchange (FLUX). Data on the quantity landed of each stock subject to quotas are submitted to meet monthly reporting deadlines set out in EU legislation, Council Regulation (EC) No. 1224/2009. These reporting deadlines are often shortly after the close of the fishing period; data lags mean that the figures reported are typically slight underestimates of the true quantity landed. Each member state reports the landings into their own country by vessels registered in other member states, leading to occasional differences with figures reported by the UK on landings by UK vessels abroad. The figures are compiled by the European Commission to give an overall picture of the landings by each member state.