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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND
THE COUNCIL**

**on the implementation of Regulation (EC) No 762/2008 of the European Parliament and
of the Council of 9 July 2008 on the submission by Member States of statistics on
aquaculture and repealing Council Regulation (EC) No 788/96**

1. INTRODUCTION

Regulation (EC) No 762/2008¹ on the submission by Member States of statistics on aquaculture was adopted by the European Parliament and the Council on 9 July 2008. Article 11 stipulates the following: *'By 31 December 2011 and every three years thereafter, the Commission shall submit an evaluation report to the European Parliament and to the Council on the statistics compiled pursuant to this Regulation and, in particular, on their relevance and quality. This report shall also undertake a cost-effectiveness analysis of the system introduced to collect and draw up the statistics and shall indicate best practices to lessen the workload for Member States and enhance the usefulness and quality of the data.'*

2. COVERAGE AND CONTENT

The Regulation requires submission of data in four areas, namely:

- (a) the annual production (volume and unit value) of aquaculture;
- (b) the annual input (volume and unit value) to capture-based aquaculture;
- (c) the annual production of hatcheries and nurseries;
- (d) the structure of the aquaculture sector.

Data are required annually except in the case of structure information, which is submitted every three years. The first year for which data were required to be transmitted (the reference year) was 2008 and those data had to be received by Eurostat by 31 December 2009. The Regulation made provision for Member States to delay implementation or to obtain a derogation from some or all of its requirements. Seven Member States were granted a transitional period in which to implement the Regulation: the Czech Republic had to supply data for the first time for reference year 2009, Portugal for 2010 and Germany, Greece, Austria, Poland and Slovenia for 2011². Three Member States (Austria, the Czech Republic and Luxembourg) had been allowed derogations for data until reference year 2011 either to supply no information (Luxembourg) or to supply only estimates for some categories instead of comprehensive validated statistical data³. Aquaculture production data from Belgium (2010-2012), Denmark (2011), Germany (2011, 2012), Estonia (2012), Lithuania (2010-2012), Austria (2011, 2012), Slovenia (2011, 2012), Finland (2011, 2012) and Iceland (2012) contain many confidential values. Countries may declare data as confidential if it can reasonably be assumed that the disclosure of such data could allow the identification of individual entity attributes. Thus, where the aquaculture data aggregated at national level may reveal the production volume or value of single enterprises, those data are flagged confidential and may not be published by the European Commission.

2.1 Data collection and sources

In the majority of Member States, data are collected through a complete census of registered aquaculture producers using annual postal or electronic questionnaires. Almost all countries have

¹ Regulation (EC) No 762/2008 of the European Parliament and of the Council of 9 July 2008 on the submission by Member States of statistics on aquaculture and repealing Council Regulation (EC) No 788/96: OJ L 218, 13.8.2008, p. 1–13.

² Commission Decision No 2010/76/EU of 9 February 2010 according a transitional period for implementing Regulation (EC) No 762/2008.

³ Commission Implementing Decision No 2011/626/EU of 22 September 2011 granting a derogation for implementing Regulation (EC) No 762/2008.

incorporated the requirements of European aquaculture data collection into national law. Registration of aquaculture production businesses is a requirement of EU animal health legislation⁴. Non-response rates are reported to be generally low in many Member States, and it is relatively simple for authorities to follow things up with data providers. Some Member States say that they make use of administrative information from industry sources. In a number of countries, veterinary offices and fisheries departments collaborate in cross-checking register details and returns.

2.2 Data collection systems in the Member States

The following country sections are derived from the most recent annual methodological reports for aquaculture statistics (reference years 2013-2011) sent from the Member States to the European Commission in accordance with Regulation (EC) No 762/2008. They do not reflect any opinion of the European Commission.

Belgium

Statistics Belgium provides aquaculture data to Eurostat. There is no national law governing aquaculture statistics. The sampling population covers all companies registered by the Federal Agency for the Safety of the Food Chain (FASFC). A large part of Belgium's production is used for restocking or sport fishing and is not for sale, thus not forming part of Eurostat statistics. Due to the low production volume, Belgium may submit summary data estimating the total production.

Bulgaria

The Bulgarian National Agency for Fisheries and Aquaculture (NAFA) maintains the national register of aquaculture premises and requires businesses to provide annual statistical data on production and sales. Data sources are regularly cross-checked against each other for validity. Data are also verified by NAFA inspectors at the time of inspection visits.

Czech Republic

The Ministry of Agriculture collects data for Regulation (EC) No 762/2008 from aquaculture producers and the Czech Anglers Union. The Ministry of Agriculture and the Czech Statistical Office validate and submit the data to Eurostat. No estimations are made.

Denmark

The Danish AgriFish Agency within the Ministry for Food, Agriculture and Fisheries collects data and submits them to Eurostat. Production data 'at first sale' are collected from all commercial aquaculture production facilities. The coverage of the industry is complete and no sampling techniques are employed. Whereas approximate numbers of sold juveniles, based on the live weight, were reported in the past, since 2012 actual numbers are recorded.

⁴ Council Directive 2006/88/EC of 24 October 2006 on animal health requirements for aquaculture animals and products thereof, and on the prevention and control of certain diseases in aquatic animals (OJ L 328, 24.11.2006) and Commission Decision of 30 April 2008 implementing Council Directive 2006/88/EC as regards an Internet-based information page to make information on aquaculture production businesses and authorised processing establishments available by electronic means (OJ L 138, 28.5.2008, p. 12–20).

Germany

Data are provided to the Federal Statistical Bureau (Destatis) through the Statistical Bureaus of the Länder, which carry out a full census of production volume at first sale for all registered aquaculture enterprises. The production value is estimated on the basis of a sample of up to 500 companies. Missing data on production values are estimated using the weighted averages of groups of species (e.g. salmonids, cyprinids).

Estonia

Statistics Estonia collects data and submits them to Eurostat. Data collection entails a survey of all enterprises with commercial fish breeding, restocking of fish and fishing tourism as their main or secondary activity. The survey covers commercial production, breeding, sales and intermediate production and consumption. Data are validated and cross-checked against fish restocking data from the Ministry of Environment. Estonia has identified a particular issue with double counting of production sold between farms.

Ireland

The Irish Sea Fisheries Board (Bord Iascaigh Mhara) is responsible for data collection and submission to Eurostat. Non-response rates are about 20%. Missing data are estimated on the basis of expert opinion and average data of the last five years together with actual regional trends. In the case of persistent non-returnees, data are obtained through indirect means from other agencies. Data accuracy is more difficult to achieve for companies that operate across more than one jurisdiction, with cases of double counting having been identified.

Greece

The Hellenic Statistical Authority (ELSTAT) collects data and submits them to Eurostat. First sale production data are collected through a full census. Annual updates of the business register ensure full coverage of the sector. The non-response rate went down to 1.6% in 2013 from 3% in 2011. Missing values were imputed.

Spain

The sub-Directorate General for Statistics of the Ministry of Agriculture, Food and the Environment (MAGRAMA) collects data and submits them to Eurostat. The survey covers all active aquaculture facilities in a full census and reliability is considered to be good. Additional stratified sampling of mussel producers in Galicia is carried out with a confidence level of 95%. Data are screened for consistency with previous years' submissions. In the past, Spain had identified a particular problem in attributing prices and accurate conversion factors (numbers of individuals to tonnes live weight) to wild caught inputs to the production cycle. This was solved in 2012.

France

The Directorate of Marine Fisheries and Aquaculture (DPMA) of the Ministry of Ecology, Sustainable Development and Energy collects data and submits them to Eurostat. Data collection entails an annual postal survey. Online data collection is envisaged from 2015 onwards. Missing data are augmented by substituting data from similar premises in the same geographical area. Data validation involves outlier searches, internal cross-referencing of data and comparisons with earlier submissions.

Croatia

The Ministry of Agriculture's Directorate of Fisheries uses logbooks for the annual collection of aquaculture data. For marine aquaculture, the non-response rate among shellfish farmers is very high and missing values for this subsector are estimated. Croatia is planning to address data quality issues for both the freshwater and marine aquaculture sectors through workshops for farmers.

Italy

The Ministry of Agriculture (Ministero delle Politiche Agricole Alimentari e Forestali) submits data to Eurostat. Data are collected regionally through UNIMAR, a consortium of fisheries and aquaculture research cooperatives. All aquaculture facilities known to the regional coordinator constitute the target population of the annual census. Interviews are conducted at the facilities. No estimations are made.

Cyprus

The Department of Fisheries and Marine Research (DFMR) of the Ministry of Agriculture, Natural Resources and Environment collects data and submits them to Eurostat. Data are collected mainly through a statistical census supplemented by site inspections and interviews with managers or owners of aquaculture enterprises. Additional information is obtained from approvals for the stocking of ponds or raceways, from details of exports and fish feed imports. Some inconsistencies in data sent to different organisations have been identified, but should be resolved from 2014 onwards.

Latvia

The Central Statistical Bureau (CSB) collects the aquaculture data. The Department of Fisheries of the Ministry of Agriculture is responsible for ensuring data consistency and reporting to the European Commission. Coverage of the industry by questionnaire is complete and no estimation is made.

Lithuania

The Agricultural Information and Rural Business Centre (AIRBC) collects data and submits them to Eurostat. All commercial aquaculture production sites report their data on a biannual basis. Response rate is 100%.

Luxembourg

There is no market production of fish in Luxembourg. The only fish establishment is owned by the State and produces fish only for purposes of release to the wild.

Hungary

The main responsibility for aquaculture data rests with the Ministry of Agriculture. The final statistics are submitted to Eurostat by the Hungarian Central Statistical Office. Data are validated by comparing them against set minima and maxima for each species and age class. The relatively small statistical population makes it possible to follow up any discrepancies by phone. Improvements are planned for the determination of first selling point average selling prices.

Malta

The National Statistics Office (NSO) collects data and submits them to Eurostat. The small Maltese industry comprises only six farms, five of which specialise in tuna fattening. Data returns are intensively scrutinised and cross-referenced with information on live fish sales and international trade.

Netherlands

As from reference year 2013, aquaculture data are collected by Statistics Netherlands (CBS) from the Dutch Organisation of Fish Farmers, NeVeVi, and from the mussel auction. The value of oysters is obtained from the Ministry of Economic Affairs. There is no market price for mussel seed, which is thus an indicative estimate of the Dutch Mussels Producer Organisation. An estimated mussel production value has been submitted for two enterprises due to confidentiality requirements. Data on the structure of aquaculture facilities are estimated from the total production by species and production method by the NeVeVi.

Austria

Statistics Austria collects data and submits them to Eurostat. Data are collected through an annual full census of enterprises. Over the three years since the first survey was launched, response rates have risen from an initial 90% to 99%. Estimations of the unit price of fish for human consumption are made in 5-15% of the cases where prices are unknown due to enterprises directly selling processed fish.

Poland

The Inland Fishing Institute in Olsztyn collects aquaculture production data and submits them to the Ministry of Agriculture and Rural Development, which forwards them to the Central Statistical Office. The aquaculture questionnaire is distributed through websites, information campaigns and mailing lists. Coverage is estimated to be almost complete. The quality of data is influenced by the definitions of production and cultivation methods set out in Regulation (EC) No 762/2008, which differ from Polish practice.

Portugal

The Directorate-General for Natural Resources, Security and Maritime Services (DGRM) submits data to Eurostat. DGRM collects aquaculture data for brackish and marine waters directly and receives data on inland aquaculture from the Institute for the Conservation of Nature and Forests (ICNF). The area, type and environment of aquaculture production units are taken from an administrative register. All other variables are collected through an annual postal questionnaire and, if necessary, personal interviews. The response rate is high for finfish farms, but estimates are needed for on-bottom bivalve production (grooved carpet shell).

Romania

The National Agency for Fisheries and Aquaculture (NAFA) collects data and submits them to Eurostat. All aquaculture units are registered and licensed. Production volumes and values are collected on a monthly basis.

Slovenia

The Ministry of Agriculture, Forestry and Food (MAFF) and the Statistical Office of the Republic of Slovenia (SURS) collect data and submit them to Eurostat. All commercial fish

farmers, including angler organisations which participate as aquaculture producers at the aquaculture fish market, annually fill out online or postal questionnaires. Irretrievable data are imputed based on previous data or on the facilities' capacity. In some cases conversion factors are used to convert from gutted or filleted fish to live weight. Slovenia notes that fish farmers have difficulties with the reliable reporting of fish eggs.

Slovak Republic

The Statistical Office of the Slovak Republic collects data and submits them to Eurostat. Data collection entails a postal census of active licensed aquaculture producers. The coverage of the census is complete and no estimation is performed. Continuous changes make it difficult to quantify the size of facilities/methods.

Finland

In Finland, aquaculture statistics are the responsibility of the Finnish Game and Fisheries Research Institute. The data are collected via statistical questionnaire sent to all production units on the Aquaculture Register. In 2012 and 2013, the response rate went up to 93 % and 90 % (from about 75 % in previous years). Estimates of the remainder are obtained by stratifying the results and applying strata-specific coefficients. Some of the production volume is based on gutted weight converted to live weight using fixed conversion factors. The value of food fish production is calculated from the average producer prices.

Sweden

The National Statistical Institute on behalf of the Swedish Board of Agriculture collects data and submits them to Eurostat. Data are collected through an annual postal census. The non-response rate is low. Any missing values are imputed by using information from previous years.

United Kingdom

Aquaculture statistics are collected separately by each of the regional governments: The Centre for Environment, Fisheries and Aquaculture (CEFAS) in England and Wales; Marine Scotland Science (MSS) in Scotland and the Department for Agriculture and Rural Development (DARD) in Northern Ireland. The UK aggregates are compiled by the Centre for Environment, Fisheries and Aquaculture (CEFAS). Provision of data is reliant on the cooperation of the industry, which is judged as very good. Production volume data are collected with full coverage by annual census of all producers. Unit price data are estimated, based on different sources of expert opinion. A weighted average unit price is submitted (based on total value) where unit prices vary per nation and species. Data collection for capture-based inputs is not yet fully aligned with the requirements of Regulation (EC) No 762/2008.

EEA Countries

Iceland

Since the start of 2015 the Icelandic Food and Veterinary Authority has been collecting aquaculture production data and Statistics Iceland submits the data to Eurostat. Data are collected annually through an online questionnaire. No sampling techniques are employed. Iceland has a particular problem with data on the structure of the aquaculture sector, which were not available before the reference year 2013 and have thus been estimated retrospectively for 2011 based on

total production. Also, non-response has been an issue in recent years. It is hoped that this can be solved with the new legislation, alongside inspections of aquaculture facilities.

Norway

The Directorate of Fisheries collects data and submits them to Eurostat. All commercial and research aquaculture producers are required to submit their data using a paper questionnaire. Missing production values are imputed on the basis of the previous year's prices. The burden of complying with Regulation (EC) No 762/2008 is minimal, since the Norwegian authorities already collect the data for other purposes.

2.3 Data quality

The majority of data providers report comprehensive coverage of the industry and good data quality. A few countries do not detail the quality of data in their reports (e.g. Romania, Latvia). Some other countries highlight specific issues with data quality. Croatia mentions a lack of response for the shellfish sector. Portugal reports a low and unreliable response rate for bottom bivalve production. Issues of missing data and some instances of low quality are mentioned by Ireland and Iceland as well. Ireland notes that the rate of success in terms of percentage response and quality of the data provided or estimated depends on the goodwill of the industry. This is likely to be generally true, although many countries experience good cooperation with the industry. Concerns are raised by Spain and the UK with regard to inputs to capture-based aquaculture, for which data may only be partially available. All countries that have expressed concerns about the availability or quality of some of their data are prepared to work continuously on improvements.

Overall, at the aggregate level, the consistency between years of aquaculture production for human consumption data appears to be very good. At species level, overall consistency of the data also seems good. Rarely do countries show sudden drops or increases in a certain species' production. Obvious cases of poor data quality are rare. Missing data, meaning incomplete time series, are fairly frequent. This may partly be explained by transitional arrangements in place until 2011 and partly by reporting of genera or groups of species instead of details at the species level. In some cases, however, a revision would clearly be useful. Moreover, aquaculture producers in many countries seem to experiment with new species in very small quantities. The use of these data is open to debate.

Data on the production of fish eggs for human consumption show very good consistency between years at species and country level. Some time series are still short, due to derogations in place from 2008 to 2010.

Data on the input to capture-based aquaculture are deemed to be of rather low quality. The data for almost all species and in all countries fluctuate greatly. Despite variations in these data being partly explained by variations in the natural abundance of seed taken from the wild, the large year-to-year differences do not seem to be fully justified. Many data are missing as well, and some time series are too short to carry out an analysis of the consistency of data. Further guidelines and definitions of the data expected under this item may help to improve data quality.

Incomplete and highly fluctuating data are likewise very common in all producing countries for the number of eggs produced in hatcheries at the species level. As far as juveniles are concerned,

data fluctuate greatly for some species and countries and are incomplete for others. The time series for a number of countries is too short for further analysis.

3. USE OF THE DATA (DATA DISSEMINATION)

The Member States' reports are made available through Eurostat's dissemination database at <http://ec.europa.eu/eurostat/data/database>. Data are also published in Eurostat statistical books, most recently '*Agriculture, forestry and fishery statistics, 2014 edition*' (ISBN 978-92-79-43201-9). Data collected through the Regulation are essential for informed, evidence-based policy making at both national and EU level. Information about the production levels and trends in aquaculture is growing in relevance, in a renewed effort to develop the sector sustainably within the Common Fisheries Policy. Quantitative data are particularly important in relation to drawing up multiannual national plans for the development of sustainable aquaculture. Data published through the Regulation provide policy makers, industry and civil society with an accepted set of reference figures that help to inform the debate on the future of aquaculture production.

4. COST-EFFECTIVENESS

The cost-effectiveness of aquaculture data collection under Regulation (EC) No 762/2008 was assessed through the methodological country reports for 2013 with reference to the years 2009-2013. Twenty-seven countries replied to the questions on cost-effectiveness. With regard to the production cost in monetary terms, six countries reported a low cost, three countries low-medium, twelve countries medium, one country medium-high and two countries a high cost. The vast majority of countries also cover national needs with the aquaculture data compiled for Regulation (EC) No 762/2008. Altogether, 20 countries exceed 50 % coverage, with 15 countries going beyond 80 % and seven countries reaching between 95 % and 100 %. Seven countries did not answer the question.

A number of countries have suggested improvements aiming to reduce the burden of Regulation (EC) No 762/2008, particularly for improving the cooperation with other stakeholders in the field to standardise data submission requirements, concerning primarily the FAO and the Data Collection Framework Regulation (EC) No 199/2008. Austria wants to separate details on the cultivation methods from the species and to limit the collection of detailed data to major production units, whereas small units would report total production only.

From the country reports it appears that about half of the countries collect data directly from the facilities at production unit level while the others have the company managers fill out the questionnaires for all of their facilities. Collecting data at the level of the enterprise facilitates collecting data under the Data Collection Framework Regulation (EC) No 199/2008⁵ at the same time, although only Bulgaria, Cyprus, Finland, Lithuania and Spain reportedly do so. The idea of covering both regulations with one data collection exercise may be worth investigating further to reduce the overall burden at Member State level.

5 CONCLUSIONS

From analysis of the data which have been collected under Regulation (EC) No 762/2008, data quality appears to be quite high for aquaculture production for human consumption (including eggs) at the aggregate level and for the major species, although for some countries individual

⁵ Council Regulation (EC) No 199/2008 of 25 February 2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy — OJ L 60, 5.3.2008, p. 1–12.

species' time series are incomplete and revisions may be useful. Data on the input to capture-based aquaculture and the production of eggs from hatcheries and nurseries are of rather poor quality. Better consistency is shown for the number of juveniles, although the definition of juveniles in the Regulation lacks precision.

Many countries judge the quality of national aquaculture data provided to Eurostat as high. Others do not explicitly rate the quality of their data, but do not mention any shortcomings. Only some acknowledge shortcomings due either to difficulties within the country or to ambiguities found in the Regulation. In a few instances the Regulation is seen as diverging from the nature of the business.

Relatively little estimation is involved in the production of aquaculture figures. The large majority of Member States have an annual census with complete coverage of commercial production. Non-response rates are generally low, except for some specific cases. It has been acknowledged though that the quality and completeness of data depend strongly on the goodwill of the industry.

As regards cost-effectiveness, for the reference year 2013 only four countries (Germany, Ireland, Greece and Poland) claimed a high burden imposed by Regulation (EC) No 762/2008 in terms of time needed to collect, process and submit the data, and two countries (Denmark and Germany) judged the production cost as high in monetary terms. By contrast, seven countries deemed the burden to be low in terms of both time and cost. These estimations do not correlate with the production volume of the Member States. National needs are covered to a considerable extent by the vast majority of countries collecting aquaculture data under Regulation (EC) No 762/2008.

6 RECOMMENDATIONS

The European Commission strives for continuous improvement of the quality of European statistics. At the same time, reducing the burden on Member States is an essential principle. To this end, a review of Regulation (EC) No 762/2008 may be envisaged, drawing on lessons learned from the years of data collection, taking into account data needs of the revised Common Fisheries Policy and aligning with the Data Collection Framework Multiannual Programme. In particular, a solution to the high quantity of confidential data should be found, allowing the production and use of harmonised aquaculture data at the European level. Synergies with the Coordinating Working Party on Fisheries Statistics standard aquaculture questionnaire will be exploited.

At Member State level the burden of aquaculture data collection may be reduced by switching from paper to (partly pre-filled) online questionnaires and automatising part of the validation process. Bulgaria has successfully introduced new data collection forms covering both the statistical data requirements of Regulation (EC) No 762/2008 and the socio-economic aquaculture data requirements stemming from the Data Collection Framework Regulation (EC) No 199/2008.