

RELATÓRIOS CIENTÍFICOS E TÉCNICOS

SÉRIE DIGITAL

TRACEABILITY AND LABELLING OF SEAFOOD
IN ATLANTIC AREA REGIONS

Rogério Mendes, Andrew Griffiths, Stefano Mariani,
Carmen Sotelo, Amaya Velasco, Catherine Smith,
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and Helena Silva



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ABSTRACT

Project Labelfish – the “Atlantic Network on Genetic Control of Fish and Seafood Labelling and Traceability” is a European project that aims to set up a network of entities with an interest in the use of standardised, innovative analytical techniques to control genetic traceability and labelling of seafood products. Within this project one of the objectives is the analysis of fish traceability and fish labelling in markets of the Atlantic region (Portugal, Spain, France, United Kingdom and Ireland). This report is an overview of the current situation of seafood traceability and fish labelling in the countries of the Atlantic region. Information recorded includes the national and European legislation regulating the seafood chain, fish species identification methods in national legislation, identification of the stakeholders involved, traceability schemes used, transference of information and data elements between stakeholders and finally evaluation of bottlenecks for improved traceability.

Key words: Seafood, traceability, labelling, Euro-Atlantic regions, fish species identification

RESUMO

Título: Rastreabilidade e rotulagem do pescado nas zonas do espaço Euro-Atlântico.

O projecto Labelfish – “Rede Atlântica de controlo genético, rotulagem e rastreabilidade de pescado e marisco” é um projecto Europeu que tem como principal objectivo a criação de uma rede de laboratórios e organismos nacionais de controlo com experiência e interesse na utilização de técnicas de análise harmonizadas para o controle de rastreabilidade genética e para a rotulagem dos produtos do mar vendidos no mercado europeu. Um dos objectivos deste projecto é a análise da rastreabilidade e rotulagem do pescado e marisco nos mercados da região Atlântica (Portugal, Espanha, França, Reino Unido e Irlanda). O presente relatório apresenta uma visão geral da situação da rastreabilidade e rotulagem do pescado nos países da região Atlântica. As informações registadas incluem a legislação nacional e europeia que regulamenta a cadeia de valor do pescado, métodos de identificação de espécies de pescado na legislação nacional, identificação dos intervenientes no sector, sistemas de rastreabilidade utilizados, transferência de dados e informações entre as partes interessadas e finalmente uma avaliação dos constrangimentos existentes, tendo em vista a melhoria dos processos de rastreabilidade.

Palavras-chave: Pescado, rastreabilidade, rotulagem, espaço Euro-Atlântico, identificação de espécies

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TRACEABILITY AND LABELLING OF SEAFOOD IN ATLANTIC AREA REGIONS



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Project Labelfish – the “Atlantic Network on Genetic Control of Fish and Seafood Labelling and Traceability” is a European project that aims to set up a network of entities with an interest in the development of a common strategy and in the use of standardised, innovative analytical techniques to control genetic traceability and labelling of seafood products. Within this project one of the objectives is the analysis of fish traceability and fish labelling in markets of the Atlantic region (Portugal, Spain, France, United Kingdom and Ireland).

This report addresses the former objective and is an overview of the current situation of seafood traceability and fish labelling in the countries of the Atlantic region participating in Labelfish project. Information recorded includes the national and European legislation regulating the seafood chain, fish species identification methods in national legislation, identification of the stakeholders involved, traceability schemes used, transference of information and data elements between stakeholders and finally evaluation of bottlenecks for improved traceability.

RESUMO

O projecto Labelfish – “Rede Atlântica de controlo genético, rotulagem e rastreabilidade de pescado e marisco” é um projecto Europeu que tem como principal objectivo a criação de uma rede de laboratórios e organismos de controlo nacionais com experiência e interesse no desenvolvimento de uma estratégia comum assente na utilização de técnicas de análise harmonizadas para o controle de rastreabilidade genética e para a rotulagem dos produtos do mar que são vendidos no mercado europeu e, em particular, nos respectivos países envolvidos no projecto. Um dos objectivos deste projecto é a análise da rastreabilidade e rotulagem do pescado e marisco nos mercados da região Atlântica (Portugal, Espanha, França, Reino Unido e Irlanda).

O presente relatório aborda o objetivo anterior e é uma visão geral da situação da rastreabilidade e rotulagem de pescado nos países da região Atlântica participantes no projecto Labelfish. As informações registadas incluem a legislação nacional e europeia que regulamenta a cadeia de valor do pescado, métodos de identificação de espécies de pescado na legislação nacional, identificação dos intervenientes no sector, sistemas de rastreabilidade utilizados, transferência de elementos de dados e informações entre as partes interessadas e finalmente uma avaliação dos constrangimentos existentes tendo em vista a melhoria dos processos de rastreabilidade.

1. GENERAL GOALS

Project Labelfish – the “Atlantic Network on Genetic Control of Fish and Seafood Labelling and Traceability” is a European project that aims to set up a network of entities with an interest in the development of a common strategy and in the use of standardised, innovative analytical techniques to control genetic traceability and labelling of seafood products. Within this project one of the objectives is the analysis of fish traceability and fish labelling in markets of the Atlantic region. The general goal of this activity was the analysis of the current situation of traceability and labelling of seafood products sold in the markets of the Atlantic regions of the countries participating in Labelfish (Spain, Portugal, Ireland, France and United Kingdom). The intention was to evaluate the current bottlenecks at regional and national level for an adequate implementation of traceability schemes and the appropriate labelling of European seafood products at transnational level. This analysis will permit to evaluate the experience and results of each competent administration across Atlantic regions in relation with the effective control of seafood labelling.

One of the tasks consisted in the determination of the level of implementation of traceability schemes in the seafood industry. Traceability is defined in EU Regulation 178/2002 as “the ability to trace and follow a food, feed, food-producing animal or substance intended to be, or expected to be incorporated into a food or feed, through every production stage”; it carries a critical importance for the protection of consumers. Traceability, specifically, is a tool for risk management which facilitates the withdrawal of a food in the event of detecting any kind of problem, and allows the consumer to receive specific and exact information about the products at issue. Labelling complements traceability in the sense that it constitutes a crucial tool for better control and tracing.

This report addresses the objective of analyzing the level of implementation of traceability schemes in the seafood industry and is an overview of the current situation of seafood traceability and fish labelling in the countries of the Atlantic region participating in Labelfish project.

2. IMPLEMENTATION OF TRACEABILITY SCHEMES IN THE SEAFOOD INDUSTRY

2.1 OBJECTIVE

The objective is to establish the level of implementation of traceability schemes across the different sectors of the seafood value chain in the countries of the Atlantic region. It will be achieved through direct interviews with a number of significant sectors of the chain (fishing fleet, auctions and fish industry) and in the different Atlantic regions participating in the project. This approach permitted the identification of possible bottlenecks and the proposal of improvements for implementation.

2.2 ACTIVITIES

The activities foreseen in the development of the objective are directed to the characterization of the level of implementation of traceability schemes across the supply chain of seafood products and include:

- Identification of national legislation regulating traceability across the seafood value chain (labelling, commercial names, etc.);
- Inquire about fish species identification methods in national legislation for verification of the established normative;
- Identification of sectors involved (fishing fleet, auctions, fish industry, border control, etc.) in the seafood value chain. Process schematics for comprehension of product flow;
- Interviews with the sectors of the seafood value chain to obtain details regarding traceability schemes. Use of published material for identification of the traceability process was used when it was found representative of the present situation;
- Notation of information transference method regarding history of product between sectors;
- Description of data elements transferred (name of the species, geographic origin, quality, processing parameters, others);
- Evaluation of the capability of sectors to identify and authenticate biological species;
- Identification of possible bottlenecks and suggestions to stakeholders for improved traceability and labelling.

3. NATIONAL LEGISLATION REGULATING THE SEAFOOD CHAIN

3.1 COMMON EUROPEAN REGULATIONS

In the European countries of the Atlantic region (Spain, Portugal, France, United Kingdom and Ireland), country specific national legislation and common European regulations regulate the seafood chain. The European regulations applicable to the labelling and traceability of fishery and aquaculture products are herewith summarized and links presented in Annex I.

- REGULATION (EC) 104/2000** addresses the common organization of the market of fishery and aquaculture products. Article 4 specifies the information which would be provided to final consumers, this information being: 1) commercial

designation of the species; 2) Production method (caught at sea or in inland waters or farmed) and 3) Catch area;

- ii. **DIRECTIVE 2000/13/CE** on the approximation of the laws of the Member States relating to the labelling, presentation and advertising of foodstuffs;
- iii. **WHITE PAPER ON FOOD SAFETY (2000)** sets out the plans for a proactive new food policy: modernizing legislation into a coherent and transparent set of rules, reinforcing controls from the farm to the table and increasing the capability of the scientific advice system, so as to guarantee a high level of human health and consumer protection;
- iv. **COMMISSION REGULATION (EC) 2065/2001** laying down detailed rules for the application of Council Regulation (EC) No 104/2000 as regards informing consumers about fishery and aquaculture products Art. 3, 8, 9;
- v. **REGULATION 178/2002** laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety Art. 18;
- vi. **COUNCIL REGULATION (EC) No 1224/2009** of 20 November 2009. Establishing a Community control system for ensuring compliance with the rules of the common fisheries policy;
- vii. **REGULATION 1169/2011** on the provision of food information to consumers;
- viii. **REGULATION 931/2011** provides clarification for FBOs (Fixed-base operators) producing food of animal origin on the information they are required to keep to demonstrate compliance with the traceability requirements contained in Regulation (EC) No 178/2002 Art. 3;
- ix. **COMMISSION IMPLEMENTING REGULATION 404/2011** laying down detailed rules for the implementation of Council Regulation (EC) No 1224/2009 establishing a Community control system for ensuring compliance with the rules of the Common Fisheries Policy Art. 66, 67, 68;
- x. **COUNCIL REGULATION 2136/89** establishing common rules for the trading of preserved sardines. (Amended in 2003).
- xi. **COUNCIL REGULATION 1536/1992** which approves the common rules for the trading of preserved tuna and bonito.

Of particular relevance to traceability is the **COMMISSION IMPLEMENTING REGULATION 404/2011** which is a piece of legislation belonging to the Common Fishery Policy and specifies how traceability should be controlled along the seafood value chain. In accordance to this regulation some concepts are to be taken into consideration:

- All fishery products must be organized into lots before first sale;
- All fishery and aquaculture products lots must be traceable at all stages of the chain; production, processing and distribution, from the catch or harvest until the final consumer;
- The information linked to the lot must include the product traceability;
- After the first sale, the fishery and aquaculture lots can only be grouped or split if their provenance can be identified to the catch or harvest stage.

Also according to these regulations, the traceability information through the production chain must contain:

- An exact description of the food;
- The volume or quantity of food;
- Name and address of the company/operator from where the food was issued;
- Name and address of the owner of the food, if it is different from the company/operator from where the food was issued;
- Name and address of the company/operator to where the food was issued;
- Name and address of the receiver (owner) if it is different from of the company/operator from where the food was issued;
- Batch identification.

3.2 COUNTRY SPECIFIC NATIONAL LEGISLATION

The country specific national legislation regulating the seafood chain in the European countries involved in Labelfish project follows European regulations. Accordingly the national legislations have been harmonized in function of European directives and are in that respect transversal and relatively similar in content in all European countries.

However, considering the specificity of the different national legislations, the most relevant in terms of application for traceability and labelling of fish products for each Atlantic country are presented below. Copies of all important legislation are available on the Labelfish webpage (www.labelfish.eu).

3.2.1 SPAIN

- Order of October 15, 1985, on the rules for quality of preserved mussels, modified by Order of April 6, 1987;
- Order of October 15, 1985, on the rules for quality of frozen and cooked mussels;

- Royal Decree 1109/1991, general rule for ultra-frozen products for human consumption;
- Royal Decree 1334/1999, general rule for labelling, presentation and publicity of food products, modified by RD 238/2000, RD 1324/2002, RD2220/2004, RD 892/2005, RD 1164/2005, RD 226/2006, RD 36/2008, RD 1245/2008, and RD 890/2011;
- Law 3/2001 of National Marine Fisheries;
- Royal Decree 1380/2002 on the identification of frozen and deep-frozen fishery, aquaculture and shellfish products (amended by RD 1702/2004). The mandatory information in these products includes the species name, area of capture or provenance and method of production;
- Royal Decree 121/2004 on the identification of products proceeding from fishery, aquaculture and shellfish harvesting, fresh, refrigerated or cooked;
- Order PRE/3360/2004 on the complementary information in the labelling of frozen food products presented unpacked;
- Royal Decree 1822/2009 which regulates the first sale of fishing products (amendment in 2013);
- Law 17/2011 of July 5, on Food Security and Nutrition Art 6: traceability: Foods and feeds traded in Spain must be identified to ensure their traceability, by means of the mandatory documentation or information described in current legislation.

Regional Legislation: **GALICIA**

- Law 11/2008, of December 3, on Galicia fishing. Title VIII rules commercialization, processing and marketing activities for fish and aquaculture products. It is targeted to an improvement on these issues, highlighting the traceability in fish products as well as the correct identification, implementing new technologies and processing systems.

The Official list of the commercial denominations of fishery and aquaculture products is available at BOE 2013, <http://www.boe.es/boe/dias/2013/02/28/pdfs/BOE-A-2013-2231.pdf>

3.2.2 PORTUGAL

- Decree-Law No 375/1998. Transposes to the internal legal order the directive of the Council no. 95/71/CE, of 22 December, laying down the health conditions for the production and placing on the market of fishery products intended for human consumption. Repeals decree-laws No 283/94, November 11, and May 31, 124/95, and ministerial order No 553/95, June 8;
- Decree-Law No 560/1999. Lays down the rules that must comply with the labelling, presentation and advertising of foodstuffs whether or not prepackaged, from the moment they are supplied to the final consumer, and as those relating to the indication of the lot;
- Decree-Law No 134/2002. Establishes the traceability and control system of customer information requirements to which is bound the retail sale of fishery and aquaculture products;
- Decree-Law No 243/2003. Introduces to Decree-Law No 134/2002 the necessary changes to ensure a greater effectiveness in the control of the fishery and aquaculture products;
- Decree-Law No 111/2006. Transposes into national law the Directive No 2004/41/CE of the European Parliament and of the Council of 21 April, revoking legislation on the hygiene of foodstuffs and on the rules applicable to the production and placing on the market of certain products of animal origin intended for human consumption, and amends directives No 89/662/CEE and 92/118/CEE, of the Council and decision No 95/408/CE of the Council;
- Ministerial Decree No 587/2006. Specifies the list of species and commercial designations authorized in Portugal in relation to the commerce of fishery and aquaculture products.
- Decree-Law No 37/2004 . Establishes the conditions for the marketing of fishery and aquaculture products, frozen and thawed intended for human consumption;

- Decree-Law No 251/199. Lays down the rules applicable to the preparation, packaging and labelling of quick-frozen foodstuffs;
- Decree-Law No 25/2005. Establishes the conditions for the marketing of dried cod.

The list of commercial designations and respective scientific species authorized in Portugal is available at

www.dgrm.min-agricultura.pt/xeo/attachfileu.jsp?look_parentBoui=243776&att_display=n&att_download=y

and the list of commercial designations and respective scientific species authorized only by the autonomous regions is available at

www.dgrm.min-agricultura.pt/xeo/attachfileu.jsp?look_parentBoui=283578&att_display=n&att_download=y

3.2.3 FRANCE

- Decree of 3 November 2011 (NOR AGRM1129337A JO of 24/11/2011) establishing a national register of infringements of the common fisheries policy.
- Decree of 12 April 2013 (JORF No. 0110 of 14/03/2013) laying down measures to control the bluefin tuna (*Thunnus thynnus*) in the multi-annual recovery plan for bluefin tuna in the eastern Atlantic and Mediterranean.
- Decree of 28 January 2013 (JORF No. 0038 of 14/02/2013) determining the minimum size or minimum weight of catch and landing of fish and other marine organisms for commercial fishing.
- Decree No. 89-273 of 26/04/1989 under the decree of January 9, 1852 changed the course of Marine Fisheries regarding the first marketing of products of sea fishing and rules of communication statistical information.
- Circular of 8 September 2000 (JORF No. 222 of 24/09/2000) issued for the general organization of the control of the marine fisheries and the fisheries products. <http://www.boe.es/boe/dias/2001/03/28/pdfs/A11509-11532.pdf>
- Interministerial circular DPMA/SPM/C2005-9617 19/09/2005 issued for the investigation and prosecution of offense involving fishing, catching, holding, marketing, transportation, processing and the retail stage of undersized fish.
- Circular DPMA/SDPM/C2006-9613 of 12/05/2006 on the integration and operational coordination control system applicable to the common fisheries policy and monitoring performance indicators required by the European Commission
- Interministerial circular DPMA/SDPM/C2006-9605 DGAL/SDSSA/C2006-8001 of 13/02/2006 concerning the transport control and marketing of seafood in coastal areas and not coastal.
- Circular DPMA/SDRH/C2011-9627 for the national implementation of control measures for certain species of European Community subjected to multi-year plan: cod (*Gadus morhua*), sole (*Solea solea*), plaice (*Pleuronectes platessa*), hake (*Merluccius merluccius*) and herring (*Clupea harengus*).
- Circular DPMA/SDRH/C2011-9628 from 02/08/2011 for the control of pelagic fisheries in Western Waters: anchovies (*Engraulis encrasicolus*), herring (*Clupea harengus*), mackerel (*Scomber scombrus*), horse mackerel (*Trachurus spp.*) and blue whiting (*Micromesistius poutassou*).

The list of trade names of seafood and freshwater accepted in France, in accordance with Community legislation (Regulation EC No. 2065 - 2001) can be downloaded at the web address below and those set out in decree of 26 June 1996 on scallops.

<http://www.economie.gouv.fr/dgccrf/Listes-des-denominations-commerciales>

Each modification of such lists shall also be notified to the Commission immediately after its adoption.

3.2.4 UNITED KINGDOM

It is important to note that following the establishment of the Scottish Parliament and Welsh Assembly (July 1999), separate Statutory Instruments are now being issued for Scotland and Wales. Northern Ireland also has separate controls. Therefore, regulation is passed independently in England, Scotland, Wales and Northern Ireland.

England

- 1768 - Fish Labelling Regulations 2013;
- 466 - Food (Miscellaneous Amendment and Revocation) (England) Regulations 2013;
- 420 - Fish Labelling (England) Regulations 2010;
- 3392 - Fishery Products (Official Controls Charges) (England) Regulations 2007;
- 2904 - Fishery Products (Official Controls Charges) (England) Regulations 2006;
- 506 - Fish Labelling (Amendment) (England) Regulations 2006;
- 2991 - Fishery Products (Official Controls Charges) (England) Regulations 2005;
- 461 - Fish Labelling (England) Regulations 2003.

Scotland

- 256 - The Fish Labelling (Scotland) Regulations 2013;
- 90 - Fish Labelling (Scotland) Regulations 2010;
- 537 - Fishery Products (Official Controls Charges) (Scotland) Regulations 2007;
- 579 - Fishery Products (Official Controls Charges) (Scotland) Regulations 2006;
- 105 - Fish Labelling (Scotland) Amendment Regulations 2006;
- 597 - Fishery Products (Official Controls Charges) (Scotland) Regulations 2005;
- 438 - Registration of Fish Sellers and Buyers and Designation of Auction Sites (Scotland) Amendment Regulations 2005;
- 286 - Registration of Fish Sellers and Buyers and Designation of Auction Sites (Scotland) Regulations 2005;
- 498 - Sea Fish (Marketing Standards) (Scotland) Regulations 2004;
- 145 - Fish Labelling (Scotland) Regulations 2003.

Wales

- 2139 (W.209) - Fish Labelling (Wales) Regulations 2013;
- 797 (W.78) - Fish Labelling Regulations (Wales) 2010;
- 3462 (W.307) - Fishery Products (Official Controls Charges) (Wales) Regulations;
- 3344 (W.305) - Fishery Products (Official Controls Charges) (Wales) Regulations;
- 1495 (W.145) - Registration of Fish Buyers and Sellers and Designation of Fish Auction Sites (Wales) Regulations 2006;
- 1339 (W.131) - Fish Labelling (Wales) (Amendment) Regulations 2006;
- 3297 (W.255) - Fishery Products (Official Controls Charges) (Wales) Regulations;
- 1635 (W.177) - Fish Labelling (Wales) Regulations 2003.

Northern Ireland

- 219 - Fish Labelling Regulations (Northern Ireland) 2013;
- 54 - Fish Labelling Regulations (Northern Ireland) 2010;
- 497 - Fishery Products (Official Controls Charges) Regulations (Northern Ireland);
- 485 - Fishery Products (Official Controls Charges) Regulations (Northern Ireland);
- 116 - Fish Labelling (Amendment) Regulations (Northern Ireland) 2006;
- 524 - Fishery Products (Official Controls Charges) Regulations (Northern Ireland);
- 419 - Registration of Fish Buyers and Sellers and Designation of Fish Auction Sites Regulations (Northern Ireland) 2005;
- 160 - Fish Labelling Regulations (Northern Ireland) 2003.

Identification of UK Acts concerning seafood labelling and traceability

Food Standards Act 1999 – The establishment of the Food Standards Agency.

The list of UK commercial designations of fish (September 2013) is available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/236702/pb14027-uk-commercial-designation-fish-list.pdf.

3.2.5 IRELAND (ROI)

- S.I. No. 483 of 2002 - European Communities (Labelling, Presentation and Advertising of Foodstuffs) Regulations 2002;
- S.I. No. 320 of 2003 - European Communities (Labelling of Fishery and Aquaculture Products);
- S.I. No. 320 of 2012 - Sea-Fisheries (Community Control System) Regulations 2012;
- S.I. No. 453 of 2012 - Sea-Fisheries (Community Control System) (Amendment) Regulations 2012;
- S.I. No. 184 of 2013 - Sea-Fisheries (Community Control System) (Amendment) Regulations 2013;

The list of ROI commercial designations of species is specified as part of Statutory Instrument No. 320 of 2003, European Communities (Labelling of Fishery and Aquaculture Products) Regulations 2003.

3.3 OVERALL EVALUATION OF LEGISLATION

The content of European regulations and specific national legislation covers most of the needs for the correct labelling and traceability of fishery products. Nevertheless, the need for indication of the commercial designation is limited when the fish is an ingredient of a processed product. In this situation and according to Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers, there is only the need to indicate on the label that the product contains fish. This is where the name of the species is not part of the product trade name, in which case it is mandatory to include the commercial name in the list of ingredients. Criticisms have been raised by consumers regarding this option since with this procedure namely used on canned, processed products and pet

products, the consumer does not have access to information about the species of fish, method of production or capture zone.

**ON CANNED, PROCESSED PRODUCTS AND PET PRODUCTS
REGULATIONS DO NOT CONSIDER MANDATORY, INFORMATION OF
THE FISH SPECIES, PRODUCTION METHOD OR CAPTURE ZONE**

Furthermore the main impacts of EC regulation No. 1224/2009 and EU regulation No 404/2011 for the sector of fish products, based on the Ferlin and Lucas (2012)¹ report, are:

For the fishermen

- The date of capture: as it is difficult, especially for small fishing vessels (fishing near the coast) to separate lots per day of capture, because of the current conservation structures taken on board, the extension provided by the regulation 404/2011 to "capture period" seems to solve this problem since fish captured during the same trip will be labelled together;
- The precise location of capture: if the introduction of electronic logbook allows the automation of this information, it is not the same for the small fishing boats. These may be brought during a tide to fish in 2, see 3 "squares" of the ICES, within the same subzone. The regulation do not impose a distinction at the level of this square for each batch of the same zone, unless specific requirements (minimum size, for example), were implemented at this level. For these types of fisheries, the indication of the ICES sub-area does not seem a problem to the fishermen.

For the fish processors

- Because of the need for the wholesaler to sort lots according to the downstream commercial demand of retailers, the need to complete the lots, etc., it is virtually impossible to identify a lot that would originate from a single ship, zone and capture date. However it would be possible to provide the client with information on all vessels involved in the lot, and the fishing season and the area of origin of components of the lot. This possibility is acceptable under the regulations if the various sources are uniform (type of ship and fishing area (even ICES sub-area) and capture period);
- For some companies, the commercial labelling is often done in advance at the customer's request without knowing the detailed characteristics of the product (capture dates; zone), so the product can be shipped immediately at the end of the sorting and packaging. It is therefore requested to be able to forward this information separately to the client (by internet), within a reasonable time (maximum 6 hours).

¹ Ferlin, P. and Lucas, N., 2012. Rapport mise en place d'un système national de traçabilité des produits de la mer. Conseil général de l'alimentation, de l'agriculture et des espaces ruraux. Ministère de l'Agriculture de l'Alimentation de la Pêche de la Ruralité et de l'Aménagement du territoire. Available at http://agriculture.gouv.fr/IMG/pdf/CGAAER_11105_2012_Rapport_cle0298ff.pdf

For the fish retailers

- The retailers do not have easy access to the information available on quotas (and their management), or even on fishing grounds. They may therefore stand a risk similar to that of sanitary risks (of which they knows better the contours), in terms of seizure of a consignment coming from a closed quota area, or with any other obligation not known downstream of the chain. This will require an adaptation of the transaction agreements with upstream stakeholders to protect the retailers from those risks.
- The inclusion of scientific names on labelling seems unnecessary, very few consumers being able to understand it (nor perhaps some number of retailers!). In any case, it should be simply displayed by the retailer in the form of a table showing the correspondence between the common name displayed on fish product and the scientific name as required by the regulation.

On the side of **intermediaries** such as auctions, these regulations do not seem to raise particular problems, as these institutions are already equipped to manage the correct transfer of all information required.

Apart from the EU regulations, on the 20th of October 2011, the International Organization for Standardization under the TC/ISO 234 "Fisheries and aquaculture" proposed two new ISO standards for improvement of the traceability of products originating from captured finfish and of products originating from farmed finfish:

- **ISO 12875:2011** specifies the information to be recorded in marine-captured finfish supply chains in order to establish the traceability of products originating from captured finfish. It specifies how traded fishery products are to be identified, and the information to be generated and kept on file for those products by each of the food businesses that physically trade them through the distribution chains. It is specific to the distribution for human consumption of marine-captured finfish and their products, from catch through to retailers or caterers.
- **ISO 12877:2011** specifies the information to be recorded in farmed finfish supply chains in order to establish the traceability of products originating from farmed finfish. It specifies how traded fishery products are to be identified, and the information to be generated and kept on file for those products by each of the food businesses that physically trade them through the distribution chains. It is specific to the distribution for human consumption of farmed finfish and their products, from finfish meal, breeding and finfish farming through to retailers or caterers.

These international standards provide a generic basis for traceability and should help to ensure the protection of consumer health and good practice in the trade of fishery

NO REFERENCE METHODOLOGIES ARE DEFINED IN THE EUROPEAN LEGISLATION FOR CONTROL OF THE IDENTIFICATION OF THE FISH SPECIES IN FISHERY AND AQUACULTURE PRODUCTS

products. Its inclusion in the member states national legislation systems would eliminate the need for additional protocols, especially for exported products (Ferlin and Lucas, 2012).

4. FISH SPECIES IDENTIFICATION METHODS IN NATIONAL LEGISLATION

Identifying the correct fish species in fishery and aquaculture products is a fundamental aspect in the control of traceability and compliance with European Union regulations. The specific methods used to guarantee this identification are of significant relevance. Because the performance of the various methods available for fish species identification (e.g. IEF of proteins, DNA analysis) is considerably different with regard to the diversity of products in the market (e.g. fresh, heat processed), it would be desirable to have a reference method in the current legislation that could be used in case of dispute. It has not been the practice of the European Union to indicate in specific legislation the exact methodology that is accepted for reference control analysis.

In this regard, and as was previously referred to, it was transposed to the specific national legislation of the European countries of the Atlantic area all the pertinent European regulations on the subject, either about the rules that must be followed regarding the labelling, presentation and advertising of foodstuffs, the regulations concerning the organization of the market of fishery and aquaculture products or regarding the traceability and control of information to consumers about fishery and aquaculture products. Nevertheless and similar to what is the present situation in the case of the European regulations, no specific reference methodologies are defined in the national legislation of the European countries of the Atlantic area for the identification of the fish species in fishery and aquaculture products.

It is important to note that whilst generally considered outside of regulations concerning traceability, Regulation (EC) No 1224/2009 in article 13 makes a relevant demand regarding fisheries enforcement in terms of traceability tools; that it is mandatory for member states to explore genetic tools for fisheries enforcement purposes before June 2013.

5. STAKEHOLDERS INVOLVED IN THE SEAFOOD VALUE CHAIN

The European seafood value chain is very complex and it splits globally and nationally between different type of stakeholders such as fisherman, fish producers, auctions, markets, fish processors, retailers and government agencies. The recently published “Without a Trace II” report (Boyle, 2012)² provides an excellent summary of traceability in the global seafood value chain, including a simplified overview of the participants in the supply chain (see Figure 1).

For a better understanding of the European seafood sector and the relationship between the different stakeholders in countries of the Atlantic region participating in this project these are summarized below.

5.1 IRELAND

Fishing Fleet and Fisheries Imports

There were 4,984 fishermen and 1,716 fish farmers in Ireland in 2012. There are currently 2,152 fishing vessels registered on the Irish Fishing Boat Register³. Of these 541 are >10m in length and 1,611 are <10m.

The Bord Iascaigh Mhara (BIM; the Irish State agency with responsibility for developing the Irish Sea Fishing and Aquaculture industries) document entitled Irish Seafood Industry: Fish Facts 2012⁴, states that the Irish Seafood trade was estimated at approximately €822 million with €493 million made up of exports. Overall, almost 116,000 tonnes of seafood (excluding fishmeal and oil) were imported in 2012 with a value of €203 million. Blue whiting accounted for the majority of the imports at just over 65,000 tonnes with all but 1 ton supplied by Norway. The second highest imported species was salmon with 2012 imports totaling just over 17,000 tonnes. The single largest European Union supplier of salmon was Great Britain.

Fish Processors

The Irish seafood industry employed 2,860 people in the processing sector in 2012. There are currently 137 fish processors in Ireland. These processors are mainly clustered in Cork, Donegal, Dublin and Galway (www.bim.ie). In 2013 there was an €8 million investment in seafood processing firms with 25 companies from all over the country benefiting from grant aid and private sector investment (<http://www.agriland.ie/news/e8m-investment-in-seafood-processing-firms>).

² Boyle, M.D. 2012b. Without a Trace II: An Updated Summary of Traceability Efforts in the Seafood Industry. FishWise. www.fishwise.org/services/traceability-support

³ Updated on 10/01/2014. Downloaded on 17.07.2014 from <http://www.agriculture.gov.ie/fisheries/seafisheriesadministration/seafisheriesadministration/seafishingsfleetregister/>

⁴ Bord Iascaigh Mhara, 2013. Irish Seafood Industry: Fish Facts 2012. Downloaded on 17.07.2014 from <http://www.bim.ie/media/bim/content/downloads/Irish%20Seafood%202012.pdf>

Key:

-  Subsistence Fishing/Farming
-  Wild Capture Fisheries
-  Aquaculture
-  Recreational Fishing
-  Processing and Distribution

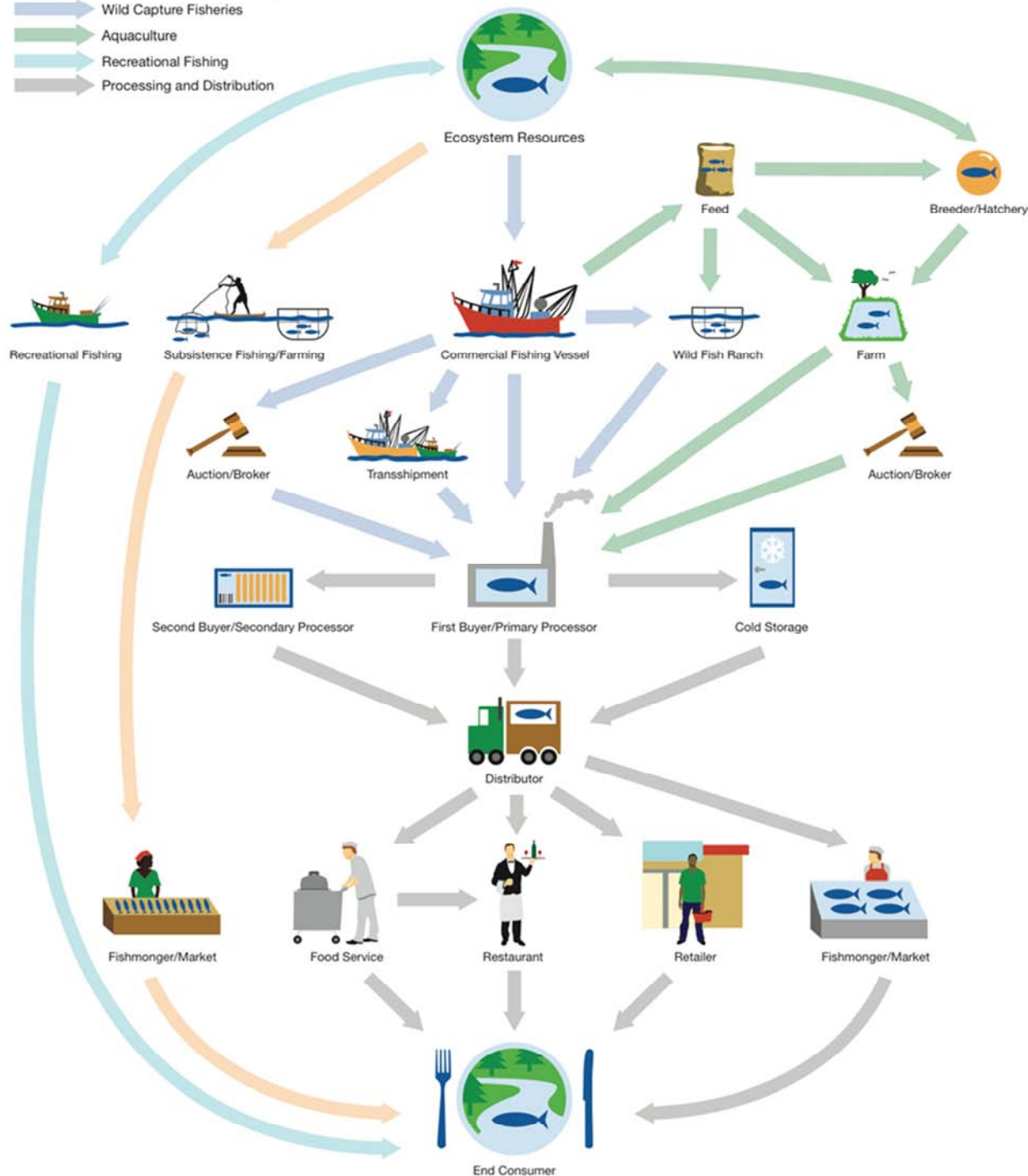


Figure 1 - Simplified seafood supply chain (taken from Boyle, M.D., 2012. Without a Trace II. FishWise. www.fishwise.org/services/traceability-support)

Fish Retailers

Data from BIM shows that in 2012 Irish consumers spent approximately €193 million on 18.3 million kg of fish. This shows a 5.2% increase on spend and a 7% increase in volume purchased compared to 2011 (McCarthy, 2013⁵). A study carried out by The Nielsen Company in 2013⁶ also found that when it comes to fresh fish and seafood, 64% of consumers buy from the supermarket, followed by 17% buying from fishmongers and 16% buying from convenience stores.

In terms of frozen fish sales during 2012, Private Label and Donegal Catch were the brands with the largest market share. The retailers with the largest market share in this category are Tesco and Dunnes Stores. It is worth noting that Aldi have the largest increase (30%) year-on-year in the frozen fish category from 2011 to 2012 (more details are available given by McCarthy, 2013⁵).

Consumers

According to FAO figures, in 2007 the average annual fish consumption in Ireland was 21.4kg/capita. The BIM describe fresh fish as the most expensive type of protein in Ireland, valued at €12.73/kg. Frozen fish is the fourth most expensive with a value of €8.37/kg (Bord Iascaigh Mhara, 2013⁴; McCarthy, 2013⁵).

The Nielsen Group published a report (The Nielsen Company, 2013⁶) on consumer behavior concerning fresh foods within the ROI in 2013, concluding that Irish consumers shop for fresh fish and seafood 1.6 times per week. Profiling of seafood shoppers has shown that “empty nesters” i.e. parents whose children have grown up and left home, contribute most to the sales of fish. Fresh fish is most popular with this group, whereas frozen fish does better with family groups.

According to the Bord Bia (the Irish Food Board; <http://www.bordbia.ie/industryservices/information/alerts/Pages/Irishconsumersspending5moreonfish.aspx?year=2013&wk=7>) in 2012 in the fresh fish category, salmon had the majority of market share at 50%. This was followed by cod (9%) and prawns (8%). Between 2011 and 2012 haddock saw the largest market share increase (44%), followed by mackerel (27%) and salmon (22%).

5.2 FRANCE

Fishing fleet and fisheries imports

According to the FranceAgrimer (French National Establishment of Products from Agriculture and the Sea) April 2013 edition of the annual report for fishing and

⁵ McCarthy, C., 2013. How is the Irish Fish Market Performing? Downloaded on 17.07.2014 from <http://www.bim.ie/media/bim/content/downloads/Irish%20Retail%20Seafood%20Sales%20-%20Data%20to%2023rd%20December%202012.pdf>

⁶ The Nielsen Company, 2013. Ireland Fresh Report. Downloaded on 17.07.2014 from http://www.nielsen.com/content/dam/corporate/ie/Reports/2013/Nielsen_Ireland_Fresh_report_April%202013.pdf

aquaculture industries in France (FranceAgrimer, 2013⁷), in 2011 it was estimated there were 22,000 fishermen in France; 7,741 of these fishermen were on boats fishing less than 24 hours per leg. In 2012, the fishing industry had 7,157 fishing vessels (4,758 in metropolitan France and 2,579 in French Overseas Departments). In metropolitan France (France in Europe), of the 4,758 vessels, 2,818 fishing boats were < 10 meters in length and 39 were > 40 meters.

A total of 667,000 tonnes of seafood were produced and sold in France: 310,000 tonnes of fresh fish, 154,000 of frozen fish, 153,000 of shellfish and 50,000 of farmed fish. In terms of trade, France imported 1,106,000 tonnes (net weight) of fish and exported 351,000 tonnes. France is a net importer of fish, with imports exceeding exports, with a negative exchange balance of €3,350 million. By species, imports into France were highest (in value) for salmon (€832 million), shrimp (€655 million), tuna (€528 million), cod (€349 million) and scallops (€250 million).

Fish processors

In France in 2011, there were 306 primary processing units with 4,584 employees and 300 processing units (whose main activities are fish processing) with a total number of 15,897 employees. The highest concentration of processors was in Brittany (25%), in Boulogne sur Mer area (14%) and on the Atlantic coast (13%) with 30% of the revenue for Brittany processors, 26% for the Atlantic coast processing units and 10% for the fish processors in the Boulogne sur Mer area. The revenue by type of food products was 24% for surimi, caviar and “charcuterie de la mer”, 22% for smoked salmon and salted-marinated products, 17% for first level processed fish products (fillets, frozen fish), 15% for canned and soup products, 15% for ready to cook products, 6% for shrimps and 1% for others (algae, by-products and others).

Fish retailers

In France, the distribution of seafood is mainly done through three distribution channels: the supermarkets and hypermarkets, and fixed and itinerant fishmongers (markets). In 2012, fresh seafood products were mainly sold in supermarkets (70%), by fishmongers on markets (15%) and in fishmonger shops (10%). Frozen seafood products were sold mainly in the supermarkets (55%), in the freezer centers and home-delivery (30%) and in hard discount shops (12%). In France in 2011, there were 2,926 fishmongers with a revenue of € 1,135 million and a total number of 7,475 employees. The highest concentration of fishmongers was in Paris and its region, the South of France and Brittany.

Consumers

According to the FranceAgrimer 2013 report, in 2011 the average annual fish consumption in France was 36 kg/capita (54% wild fish, 23% farmed shellfish and crustaceans, 13% farmed fish, and 10% wild shellfish, crustaceans and cephalopods). In

⁷ FranceAgrimer, 2013. Les filières pêche et aquaculture en France. Édition avril 2013. Downloaded on 17.07.2014 from

<http://www.franceagrimer.fr/content/download/23161/191433/file/broch+p%C3%A0che+A4+frDEF.pdf>.

2012, French consumers spent € 7,043 million on seafood products (34% on fresh products, 31% on refrigerated processed food products, 21% on frozen seafood products and 14% on canned products).

5.3 PORTUGAL

Fishing fleet

In terms of the fishing industry stakeholders, according to Portuguese National Statistics Institute, in 2011, there were 8,380 fishing vessels in the Portuguese fleet with a total of 101,574 GT and 371,578 kW. Since 2009 a decrease of between 1% and 2% has been registered in the number and size of fishing vessels. This decrease is mainly due to the re-structuring of the fish sector following the Common Fisheries Policy (CFP). Most of the vessels, 90% of which are less than 12 m long, fish close to the main harbors. There are 45 home-harbors in Portugal (32 continental, 11 in Azores and 2 in Madeira archipelagos).

In 2011, approximately 21,000 fishing licenses were given, about 900 less than in 2010. The main type of licensed fishing gears are hooks, nets and traps which corresponds to the large number of smaller fishing boats (traditional fishing). The long-distance fishing fleet was only responsible for approximately 20% of the fish landings records (216,425 tonnes) in 2011. Species like cod, hake and tuna corresponded to approximately 7,000 tonnes, 2,300 tonnes and 14,217 tonnes respectively of the fishing fleet landings in Portuguese harbors.

Auctions (first sale)

The first sale of fish in Portugal is made at auctions managed in a monopoly regime by Docapesca Portos e Lotas, S.A. Docapesca. Portos e Lotas, S.A. is a state-owned company under the Ministry of Agriculture and Sea which, in accordance with the Decree-law 107/90 of 27 March, organizes and provides the first sale of fish and supports the fishing and fishing ports sector. Docapesca's mission is to organize and promote the first sale of all landed fish and fish products in Portuguese harbors, or entering Portugal from other European countries through land transportation. It also ensures the necessary infrastructures for the support of this activity: the production of ice, storage or others. The fish and other fishery products are previously organized by the producer according to the regulations and their size/classification before entering the auction site. Docapesca launches the auctions on mainland Portugal, in 21 major locations spread out along the north, center and south Atlantic coast. Thirty smaller selling points also exist near artisanal fish landing sites.

Nowadays Docapesca has the capacity of promoting online auctions for fresh fish, alternative to the traditional physical presence auction, which enables direct participation of the buyers in real time and from anywhere with internet access. It allows simultaneous purchase in any of the Docapesca fish auctions linked to the online system using the same sales panel as the one that is installed in the auction facilities, with the possibility of viewing and buying at two auctions at the same time. Docapesca

has been implementing the online actions for aquaculture and frozen fish products since 2013. Recently the company has implemented the possibility for retailers and wholesalers to use a tag marker – proof of purchase auction (CCL) - for the fish, stating it was purchased at an auction, thus contributing to its traceability from source to the final consumer. CCL also specifies where the fish was caught and the gear used. Consumers therefore have all the information they need to make an informed and responsible purchase.



Figure 2 - EXAMPLE OF CCL TAG

From the point of view of operational conditions Docapesca has implemented a HACCP control plan for the main auction sites and established good practices for food quality and safety in its premises. All establishments are subject to a veterinary number and adequate control. In 2012, within the auctions, 120,428 ton of fresh fish were traded, which corresponds to €201.747 million.

Wholesale markets (second sale)

In the next level of the supply chain and after having been processed through the monopoly state channels of Docapesca, fishery products can be sold in a second sale at Marl, S.A.. Marl, S.A. – wholesale market for Lisbon area – opened in July 2000. This is the big supplier market for many large and small retailers. With regards to fish and fish products this wholesale market has many facilities, complementary activities, services and about 120 direct customers. It is the only authorized market for second sale of fish and fishery products and has its own veterinary number and sanitary license. From the point of view of sanitary conditions it has a strong impact on the quality of the products available to the retail customers. Further than this specific point of sale, seafood is available in the whole country at innumerable local markets, fishmongers, super and supermarkets.

Fish processing industry

The fish processing industry has steadily increased in recent years mainly due to the change in eating habits, the improved distribution network and cold facilities network which allow distribution of products across the country. Approximately 228 establishments are authorized for processing fish products. In the past, the canning industry was the main activity within this sector which absorbed the surplus production of sardines or produced convenient packaging for tuna species. Today, and after being thoroughly re-structured, only 20 industrial units continue to operate on

canning, mainly for sardines, tuna and mackerel. The processing plants which freeze or use modified atmosphere packaging of fish products have achieved a greater market share and are now a major part of the processing industry.

One of the main characteristics of the processing sector is its direct interaction with the commercial fishing industry, since it absorbs an important part of the raw material of national origin. Imported frozen fish, as a raw material which incorporates added value after processing, has also acquired certain significance in the trade balance of fishery products. Each industrial unit has its own veterinary control number, is inspected on a regular basis by a veterinary office and may have their own quality control lab or use other authorized laboratories for quality control purposes.

The processing degree used in each fish product greatly depends on the habits of consumers. So in Portugal, hake is mainly sold in frozen (either whole, filleted or in portions). Tuna is still presented in cans, though it is becoming more frequent that some fresh or frozen pieces may appear in big retail markets or supermarkets. Cod is traditionally marketed in dry-salted form, but now several other forms of presentation are becoming popular (frozen, unsalted).

5.4 SPAIN

Fishing fleet

According to MAGRAMA data (Ministry of Agriculture, Food and Environment) there were 10,116 fishing vessels in the Spanish fleet (384,796 GT and 1,185,861 kW), 47% of them belong to the Galician fleet. This shows an overall decrease since 2006. In 2011, 859,891 tonnes of fish for human consumption (fresh, frozen and others) were landed in Spanish harbors. Some of the most captured species by the Spanish fleet are sardines, tuna, anchovies, cod, monkfish and hake (MAAMA, 2012⁸)

Auctions (first sale)

Along the Spanish coast there are 185 authorized fish auctions, 124 of which are located in the Atlantic Area, including Canary Islands (MMAMRM, 2011⁹).

According to the Spanish Law 3/2001 of National Marine Fisheries, the first sale of fresh fishery products will be performed through auctions in the harbors. Nevertheless, the autonomous regions are will be allowed to authorize first sale centers, such as molluscs dispatch and purification centers, located within or outside of the harbor facility, without prejudice of the Port Authority competences about the location of those centers. Also, regulative exceptions can be established about the auction sales for fish captured

⁸ Ministerio de Agricultura, Alimentación y Medio Ambiente, 2012. Downloaded on 07.07.2014 from http://www.magrama.gob.es/es/estadistica/temas/estadisticas-pesqueras/2012_05_Peso_zona_CEIUAPA_tcm7-194502.pdf

⁹ Ministerio de Medio Ambiente y Medio Rural y Marino, 2011. Downloaded on 07.07.2014 from http://www.magrama.gob.es/es/pesca/temas/comercializacion-y-mercados-de-los-productos-de-la-pesca/lonjas_tcm7-7053.pdf

with certain types of fishing gear. Auctions present a high disparity regarding types of labels, and only a few incorporate barcode systems.

Wholesale markets (second sale)

Second sale Mercas Network is constituted by 23 food unities, which make a total surface of about 7,000,000 m². One of these unities is Mercamadrid, which holds the fish wholesale market of Mercamadrid. This is one of the leading markets in Europe in the trading of fish and aquaculture products, and it is a reference in prices and trends, with a covered area of 33,000 m² and a total annual fish trade of 132,000 tonnes, meaning a value of €1 billion. There are 156 posts where wholesalers offer a wide range of fresh and frozen products to retailers (traditional retailers, HORECA, and distributors).

Fish processing industry

Canning industry

Galicia is the leading autonomous region regarding seafood product transformation and preservation. It is the main producer of canned seafood, representing 84% of the value of total Spanish production. It is also the main exporter of seafood products (30% of the total volume in Spain).

Frozen fish industry

There are 113 factories in Galicia, dedicated to freezing the fish before their commercialization. Galicia is also responsible for more than 37% of the total Spanish frozen fish exports. and in 2009 sales totaled 185,000 tonnes of frozen fish. Statistics on the Spanish production of seafood in 2010, 2011 and 2012 have been collected by MAAMA, 2012¹⁰.

Retailers

TRADITIONAL RETAILERS

The traditional retailers (fishmongers and local fish stores) can purchase from the wholesale unit, but the distribution network from wholesalers to retailers has increased during the last years.

HORECA CHANNEL

Horeca is the acronym for Hosteleria, Restauracion y Cafes (hotels, restaurants and cafeterias), and refers to all aspects related to the commercial distribution to this category of client, including machinery, supplies and raw food materials.

ORGANIZED DISTRIBUTOR

There are differences between national and regional distribution. National distributors don't trade in Mercas Network, for they have centralized supply channels to increase the control and reduce costs. Instead, regional distributors purchase from wholesalers and demand correctly labelled and traceable products.

¹⁰ Ministerio de Agricultura, Alimentación y Medio Ambiente, 2012. Downloaded on 07.07.2014 from http://www.magrama.gob.es/es/estadistica/temas/estadisticas-pesqueras/2012_01_Productos_tcm7-195313.pdf.

Fishing Fleet & Fisheries Imports

The Marine Management Organisation is duty bound to publish annual statistics on the structure and activity of the UK fishing industry and the supplies, overseas trade and marketing of fisheries products. These are presented in the UK Sea Fisheries Statistics (MMO, 2012)¹¹. In 2013, it was estimated there were approximately 12,150 fishermen in the UK. The fishing industry had 6,399 fishing vessels (5,036 were < 10metres in length and 1,363 were > 10 meters). It is important to note that whilst the majority of the UK's fishing fleet consist of vessels under 10m in length, they account for only 8% of the fleet's capacity. Conversely, vessels over 18m account for just 8% of the total number of registered vessels but for 79% of the total capacity. In terms of trade, the UK landed 624,000 tonnes of finfish and shellfish, imported 739,000 tonnes (for a value of around € 3,120 million) and exported 453,000 tonnes. Thus, the UK is a net importer of fish. By weight, finfish accounted for 75% of fish imports, shellfish (mollusks and crustaceans) accounted for 13% and fish products (e.g. meals or flours) accounted for 12%. By species, imports into the UK were highest for cod (116,000 tonnes), tuna (97,000 tonnes), shrimps and prawns (85,000 tonnes), salmon (73,000 tonnes) and haddock (44,000 tonnes).

Fish processors

Information regarding the UK seafood processing industry has been regularly gathered since 1986, and the most up to date information was collected in 2012 by SEAFISH¹². This includes the presentation of a detailed census, including the financial worth of the industry to the UK economy. It was estimated that there were 325 sea fish processing units in the UK, predominantly processing mixed species, with the highest concentrations of processors in the regions of Grampian (Scotland) and Humberside (Northern England).

Fish Retailers

In 2012 consumers in the UK purchased 357,000 tonnes of seafood products worth approximately £3.0 billion (around €3.6 billion). Supermarkets dominate the seafood retail market with over 87% share of the total spend. In surveys conducted in the 2011-2012 period, the five dominant retailers were Tesco (approximately 27% of the total spend on fish), Sainsbury (approximately 19%), Asda (approximately 13%) Morrisons (approximately 13%) and Waitrose (approximately 8%, source: Neilsen & SEAFISH; <http://www.seafish.org/research--economics/market-insight/market-summary#retail-sector>).

¹¹ Marine Management Organisation, 2012. The 2012 report on the UK commercial fishing industry Downloaded on 26.06.2014 from [https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/358342/UK Sea Fisheries Statistics 2013 online version.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/358342/UK_Sea_Fisheries_Statistics_2013_online_version.pdf).

¹² Seafish, 2012. 2012 Survey of the UK Seafood Processing Industry. Downloaded on 17.07.2014 from http://www.seafish.org/media/Publications/2012_Survey_of_the_UK_Seafood_Processing_Industry.pdf.

Independent fishmongers in the UK are represented by the National Federation of Fishmongers, who represents approximately 50% of independent fishmongers. The last research into independent seafood market was conducted by SEAFISH in 2005¹³. In this report it is estimated that the independent sector was worth £236 million (around €286.6 million) and covered about 12% of the total seafood market, rising to a 21% share of the total chilled market.

Consumers

Fish consumption has increased steadily since the 1970s, although there has been a significant downwards trend since 2008. Chilled seafood accounts for 56% of the market by value, frozen 27%, ambient (tinned, etc.) 18%. Overall, the most popular species of seafood in retail is salmon, followed closely by tuna, cod, haddock and warm-water prawns then cold-water prawns. It is estimated that the average person per week consumes approximately 150 grams of fish and spends approximately £1.20 on fish a week. This data comes from the Department for Environment, Food and Rural Affairs "Family Food 2011" report that provides statistics on food purchases by type of food, based on surveys conducted in 2011 (DEFRA, 2011)¹⁴.

6. TRACEABILITY SCHEMES IN THE SEAFOOD CHAIN

European companies involved in the seafood supply chain follow the general rules of upstream and downstream traceability of the products.

The main concern of the upstream operation area of traceability involves the control of the supply of the raw materials. In this area the supplier of the raw materials, the date of reception, the lot and quantity, the identification of the raw materials and other details including, method of processing, type of packaging, analytical controls, etc. are recorded. In terms of associated documentation, either of a digital or documentary nature, accompanying commercial documents and records of receipt are involved.

The main concern of the downstream traceability of the products from the fishery and aquaculture producers is the exit of products from the industrial premises, i.e. following distribution. In this case it is mandatory to know to whom the products are sent. of the details required include the name of the client, date of dispatch/delivery, name of products, lot number, quantity and release documentation. Associated documentation filed at the companies is composed of commercial documents, particularly invoices, delivery notes and outward registers of products.

The following information is recorded in relation to both upstream and downstream traceability of products:

- name and address of the suppliers

¹³ Seafish, 2005. Market insight, Key Features. Independent Fishmongers Study. Downloaded on 17.07.2014 from http://www.seafish.org/media/Publications/KeyFeature_Fishmongerstudy.pdf.

¹⁴ Department for Environment, Food & Rural Affairs, 2011. Annual report on household purchases of food and drink. Downloaded on 17.07.2014 from <https://www.gov.uk/government/publications/family-food-2011>.

- name and address of the clients
- nature of the products supplied/delivered
- date of the transaction
- quantity
- indication of the lot
- detailed description of the products

In **Portugal** and as a general comment regarding the labelling and traceability schemes in the Portuguese seafood value chain, it is clear that being able to verify the origin of the fish sold is one of the main concerns for most retailers that adopted policies of responsible fish trading. Several retail companies have instituted as common practice the exclusion of suppliers that work with ship-owners or ships listed in official blacklists. These retailers require the guarantee of the legality of the fish they sell and want to check each year the fulfillment of these criteria. To operationalize this requirement the major groups are opening fish platforms in the main Portuguese fishing ports, thus allowing them a significant increase in the control of the origin of the fish.

Overall, and looking at results from former years (2008) when none of the major food chains responsible for selling more than 70% of the fish in the country had a policy of buying and selling of sustainable fish, it can be concluded that in the Portuguese supermarkets there has been a general increase of the quality of the labelling and traceability schemes. Nevertheless there are some cases in which there is still a considerable effort to ensure that the traceability of products is truly effective.

In the **UK** and **Ireland** regardless of the size of business, all information gathered by direct interview suggests full compliance with the expectations of EC regulations on traceability. In several interviews the concept of “one step forward and one step back”, i.e. ensuring supplier details are retained for forward and backward traceability, was raised by those interviewed. This is fully in tune with the ethos of the EU regulations on traceability.

All the interviewees described detailed internal traceability systems within their companies. In the case of the large **UK** and **Irish** processors, attendance at the interview provided the opportunity to inspect traceability systems employed in their large processing plants. These were characterized by a mixture of IT and paper traceability systems, with information often physically retained on labels throughout processing, backed up by supporting data retained electronically. Interestingly, the large processors interviewed had more sophisticated IT or barcoding systems in development (due to be deployed very soon after the visit), in order to reduce manual recording of traceability data. It is also worth highlighting within the context of this project, that one of the large processors (Youngs) retained its own in house laboratory facilities for checking species authenticity, including DNA based methods. It was noted by interviewers that Rockabill Shellfish Ltd. (Skibbereen), one of the largest whitefish processors in Ireland, had a very strong interest in the work of the Labelfish project and indeed the whole area of seafood traceability, devoting nearly a full day to discussions on the topic following the

structured interview. In attendance at this discussion were the factory quality control manager, the senior export sales executive, and the processing plant manager.

Traceability information in the **UK** and **Ireland** was generally retained by the companies throughout processing. It is also important to note that even where barcoding systems for tracing goods were not employed internally, they were more often associated with out-going traceability (particularly of packaged goods on the way to retailers).

Traceability in the supermarkets in the **UK** was addressed by the Greenpeace 2005¹⁵ report “A Recipe for Change – supermarkets responds to the challenge of sourcing sustainable seafood”. This report summarizes the policies of all the major supermarkets towards the sustainable sourcing of seafood. It is clear in the conclusion of this report that traceability remains a key element in sourcing sustainable seafood. In the report, worthy of reference, is that Greenpeace highlighted Marks & Spencer and Waitrose for their commitments to full traceability and the importance of provenance information in sourcing their seafood.

Also in 2011 the Marine Conservation Society undertook a similar supermarket survey for the sustainability of seafood in the **UK**. On this occasion Marks & Spencer, Waitrose & Sainsbury’s were highlighted for their commitment to sustainable seafood, under which traceability, labelling and consumer information formed an explicit part of the assessment procedure. However, in terms of the specific labelling and consumer information Morrisons and the Cooperative supermarkets scored most highly. The results of the Marine Conservation Society supermarket survey are summarized at the following URL;

[http://www.mcsuk.org/what we do/Fishing%20for%20our%20future/Supermarket%20survey/Supermarket%20-%20statistics](http://www.mcsuk.org/what_we_do/Fishing%20for%20our%20future/Supermarket%20survey/Supermarket%20-%20statistics)

In **Ireland** the supermarket chain SuperValu is the first Irish chain of stores to adopt the new Responsible Irish Fish (RIF) label. Also of note is that one of the processors interviewed under the current work in the ROI, Rockabill Shellfish Ltd., are also subscribed to this labelling scheme expressing their commitment to traceability. This scheme is being developed to encourage and reward responsible fishing by Irish vessels. The aims of RIF are to help vessel owners achieve certification for their products, to develop a brand which allows Irish fishermen to differentiate their products in the market place and to promote Irish fish caught in a responsible manner. Donegal Catch has become the first branded company to implement the RIF programme and has 5 frozen and 3 chilled products under the scheme. Each product bearing the RIF label is fully traceable back to an Irish vessel.

In **France** according to the French seafood and aquaculture cluster presentation (AQUIMER, 2013)¹⁶, traceability is well controlled inside companies, but the data

¹⁵ Greenpeace, 2005. A Recipe for Change. Supermarkets repond to the challenge of sourcing sustainable seafood Downloaded on 17.07.2014 from <http://www.greenpeace.org.uk/media/reports/a-recipe-for-change>.

¹⁶ Aquimer, 2013. TRASEAPILOT : Développement d’une base d’échanges de données commune à toute la

exchanges between companies are not adapted to the international market. These data exchanges are mainly based on: paper (88%), EDI (Electronic Data Interchange) (12%) and basic software (11%). The consequences for companies are the increase of commercial disputes, bad management of food sanitary alarms, and no interoperability between companies.

AQUIMER has already led various programs, including TIC PME 2010 (benchmarking of the traceability in the seafood sector, software or software solutions developed by each company, and realization of a data exchange demonstrator), DEMATFLUX (normalization of data exchanges in ebXML (UN/CEFACT) and drafting of the reference frames of use of these standards), TRASEANET CENTER (technical and economic validation for the installation of a data exchange platform common to all participants in the seafood sector). This national cluster is leading the TRASEAPILOT program which consists of implementing and deploying the results of DEMATFLUX and TRASEANET CENTER programs. The TRASEAPILOT system will be accessible to all seafood companies for: (i) identifying and following-up the batches throughout the sector; (ii) checking physical flows and controlling the correspondence with data processing flows, and (iii) resolving commercial disputes between customers and suppliers.

A report of WP2 of the TTQ program (Training for Traceability and Quality in the capture fishery industry of Europe), written by Jean-Pierre Boude, Stéphane Gouin and Gervais Folliard, was published in 2006 (Agrocampus, 2006)¹⁷ on the observation of practices of fishing stakeholders regarding the traceability of products and identification of training needs.

This survey was carried out on the artisanal fishery for fresh fish (not on the industrial fishery less involved in all the traceability scheme (consult simplified scheme of Boyle 2012 above)). In general the notion of traceability is understood by the majority of the stakeholders, but there is sometimes confusion between the traceability concept and the quality concept (HACCP).

Also in **France** and regarding the fishermen, many believe that traceability is a requirement that must be observed downstream and think that fishmongers are in the center of traceability concerns, as each batch is split and then re-grouped with others. In addition, few of them are concerned with traceability (and aware of interests that traceability could bring to them). Furthermore, even if the concept of traceability is understood by the fishermen, some of them do not see the purpose.

The French fishermen for artisanal fisheries generally do not target only one species. The traceability systems on board are generally poorly developed in the small ships. However, although the European log book was not, at first, a tool for traceability, it provides a good base of information on the name of the species caught, quantities, day and fishing area. In general, when fish are transported to the auction, fishermen receive a form for landing and/or for auction.

filière des produits aquatiques par Catherine Beutin – Pôle de Compétitivité AQUIMER. Downloaded on 17.07.2014 from <http://labelfish.eu/>.

¹⁷ Agrocampus, 2006. TTQ, Training for Traceability and Quality in the capture fish industry of Europe Rapport WP2. Downloaded on 17.07.2014 from <http://halieutique.agrocampus-ouest.fr/pdf/911.pdf>.

The first processors are all aware of the lack of coordination between them, but few make an effort to overcome this problem. Given that products with differing levels of traceability information are sold in the same market at the same price, the implementation of a traceability system is considered unprofitable. In fact it also depends on the size of the company. For the small processors, a traceability system is often a constraint, and for the large processors it is a market opportunity.

Internal traceability is present in all the companies surveyed in France. It has been found that even if the upstream traceability is often guaranteed downstream traceability is less evident. The investigation revealed that the main issue of traceability systems is focused around the lot number. Many wholesalers think that the designation of production areas defined by the law (e.g; Atlantic North-East) is too vague, and some of them suggest the need for designations of regional areas in response to the desires of consumers.

For the distributors in **France**, the source of supply is identified by the invoices. Score sheets allow the company to know if the products have been delivered. These sheets are filed daily by the carrier logistics when a delivery has been received and archived in the office. For wholesale trade, the suppliers indicate the legally required information on products (trade name and scientific species, origin) as well as packaging, size and use-by-date. The information recorded when receiving a delivery is the name or the supplier and the date of receipt of supply. They are then reused to allocate a number of internal batch that identifies the goods. They are recorded by a computer program. For each movement of goods or lots in the company, an identification number is entered and the new coordinates are recorded.

For the retailers, various documents (delivery notes, invoices etc.) are kept by the hypermarkets and supermarkets (GMS). The fish counter keeps track of the products sold by monitoring the labels of the boxes. This archiving then allows the GMS to justify the source of their raw materials during a sanitary check. Labels are sorted per day. They are differentiated according to the product (fresh fish or shellfish).

Regarding the fishmongers, in **France** they generally trust their suppliers. As the products do not undergo any treatment at that stage, the traceability system is the same as that of the previous level. Fishmongers keep only the order forms and delivery dockets.

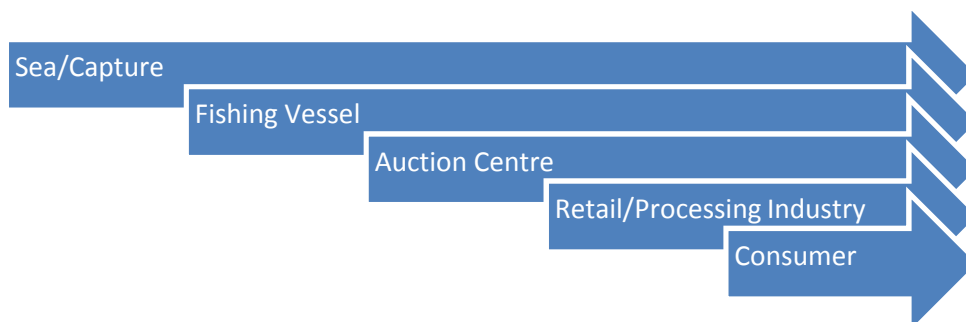
According to a Greenpeace 2011 study, an average of 35% of products in the major supermarkets in **Spain** complied with traceability criteria. (<http://www.greenpeace.org/espana/es/Trabajamos-en/Defensa-de-los-oceanos/Consumo-y-supermercados/Ranking-de-supermercados-2011/>). According to this organization, taking into consideration the low value of compliance, all supermarkets need to improve their policies regarding the purchase of fishery products. The major chain of supermarkets in Spain, Mercadona, has implemented its own system for information, control and documentation, both for its own internal and also supplier processes. In line with the current legislation, they have also implemented a system for Hazard Analysis and Critical Control Points in all stores of the company. This further optimizes the traceability and guarantees food security.

The rest of the main supermarkets in **Spain** have implemented their traceability systems through the services of Trace One. **Trace One** is a European software company offering e-collaborative solutions for managing consumer goods products for retailers and manufacturers. They support the development of private label products and national brands. Trace One's e-collaborative support quality control and food safety by means of a database that holds all the information included in the technical sheets of the products. Therefore, this database allows these establishments to share the data with suppliers.

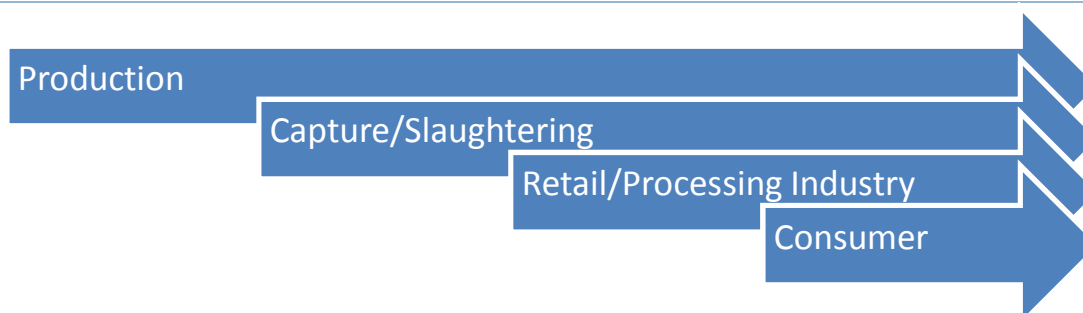
7. TRANSFERENCE OF INFORMATION BETWEEN STAKEHOLDERS

In general, fishery and aquaculture products move along the European supply chain according to the following schematics:

FISHERIES



AQUACULTURE



Traded products are organized in lots which are comprised of a certain quantity of products of the same species that were subjected to the same treatment and that are coming from the same fishing grounds, the same fishing vessel or the same production unit in the case of aquaculture. According to regulations governing traceability and control of fishery products, all European operators involved in the trade of fishery products must keep updated records, either paper or electronic, for incoming and outgoing lots. These records are kept for 3 months for fresh or refrigerated live products and 24 months for other products. However, products sold directly to the final consumer, are exempt from the sales register requirement.

In relation to fishery products the European supply chain starts immediately after capture with the separation of the different species in the fishing vessels or in the auctions premises as observed in the artisanal coastal fishing sector. After separation by species and having as reference the criteria of classification of each lot as regulated by the Council Regulation (EC) No 2406/96 of 26 November 1996 laying down common marketing standards for certain fishery products, the products are classified into categories using criteria such as size (weight or size in the case of certain mollusks and crustaceans) and degree of freshness (extra, A or B, variable according to the species). Classification of products is made by organoleptic tests which are carried out by a trained inspector belonging to the trading organization. Different lots are compiled based on a number of criteria e.g. a certain amount of product of the same species originated from the same fishing vessel and capture zone, homogenous in relation to size and freshness state. At the same time, the storage containers are also identified with the respective information corresponding to each lot.

The different lots of fishery products are then made available to the official buyers for the first sale, using an auction system (e.g. Docapesca, S.A. in Portugal) with descendent price offer. Other systems like an online sale system (digital interactive auction) that can be used by registered buyers for the purchase of fishery products (<http://www.docapesca.pt/pt/leiloes-online/pe-scado-do-mar.html>) have been introduced in some countries (e.g. Portugal). Following the sale process the fishery products are delivered to the buyers with the respective transportation documentation or the commercial invoice, in which are included the name of the fishing vessel, the number of the lot and correspondent quantity, the name of the species, the size and freshness category, fishing area and date of capture.

With regard to aquaculture, and if we look at its definition in a more consensual approach, such as the rearing activity of aquatic organisms controlled by man, unlike for fishery products, the products of this activity are subject to an extreme control which results in a whole set of identification and records carried out along the production chain. These records are made based on the lot, which will match the fish of the same species at the same stage of production (eggs, juveniles, adults and breeding), confined to the same area (e.g. tank) and of uniform size. The records are based on a set of information that comprehends the amount and type of food supplied, mortality rates and their causes, dimensions of fish, prophylactic measures (vaccinations), medication administered, water temperature, etc., which are translated in a programmable and traceable production, where each fish has an "ID", involving also information about who were the parents, where they came from, what was their lifecycle and what they ate.

When intended for the processing industry the fishery and aquaculture products at the time of entry into the factory can be identified with a new lot number (entrance lot), which is recorded and properly referenced to the lot number corresponding to the initial auction or the one assigned in aquaculture. After fish processing, the lot is assigned a new number, corresponding to the production lot of the specific production day, which will appear on the packaging of the products and to which the fish processing industry will associate their sales. After dispatch of the products, if any public health risk associated to them is identified, the processor, through registrations,

is able to identify the supplier of the respective products, which, acting in the same way, is able to identify the fishing boat which has caught the fish or, in the case of a product of aquaculture, the tank or cage from which they came and the processing conditions.

In accordance with Regulation (EC) No 2065/2001, which lays down the detailed rules for the application of Council Regulation (EC) No 104/2000 as regards informing consumers about fishery and aquaculture products at all stages of marketing of the species concerned, the information regarding the commercial name, the scientific name of the species, the production method (caught at sea, caught in freshwater or aquaculture) and capture area must appear on the label or packaging of the product or on the accompanying commercial document of the product, including the invoice. Information transferred between the fish industry operators is also provided to the consumer (as exemplified in figure 3). However, these requirements do not apply to small quantities (less than 10 kg and a value less than €20) of products supplied directly to consumers, or by fishermen or aquaculture producers.



Figure 3- Example of label of north Atlantic cod fillets.

In respect to the species caught at sea, the production method can be omitted in the sale to the final consumer whenever this is inferable from the name under which the product is sold (e.g. North Atlantic Cod or frozen at sea). With regards to the capture area, the mention of one of the zones mentioned in Annex III of Regulation (EC) No 2065/2001 is mandatory. On the other hand aquaculture products must submit the name of the Member State or of the third country of culture in which the final phase of development of the fish took place.

8. DATA ELEMENTS TRANSFERRED BETWEEN STAKEHOLDERS

8.1 B2B EXCHANGE OF INFORMATION

In the Europe Union business to business transference of information between stakeholders is regulated by the Commission Regulation (CE) No 2065/2001, which also guarantees traceability and control trade in the fisheries sector. According to this regulation all operators involved in the seafood supply chain must keep an updated documentary or electronic record system of all transactions based on the product lot.

In the case of products from within the European Union and for products from third-countries not included in article 3 of Regulation (EC) No. 2406/96 from the European Council, exchanged information between operators involves the capture or production zone, first producer, fishing boat or shipping center, permit number, name and address of producer, commercial name and scientific name, net weight, production method, presentation or processing method.

Transference of information between European stakeholders occurs at different levels and in a systematic form it includes:

From first sale to wholesale (origin traceability)

- Supplier
- Product information (name, presentation, size)
- Date of capture
- Area of capture
- Method of production
- Number of original lot

In addition, commercial data can also be transferred. There are different options for the transference on this information:

- Delivery note and/or invoice: includes data of all the products in the delivery, traceability data and administrative data.
- Traceability document: data of all the products in the delivery and traceability data.
- Product label: data of the products contained in the box/pallet and traceability data. It can include a barcode with all the information (see project GS1).

From wholesale to retailer

The same documentation that in the first sale is valid for the transference of information is also used in this step (delivery note, traceability document or product label).

Depending on if the product has been manipulated or not, the data transferred are:

- Without any manipulation: the same label as in the first sale, but with the name of the wholesaler instead of the supplier.
- Manipulated: repackaged, eviscerated, filleted or processed in some way. There are two main options:

- Without mixing: this is the best option. Only the information associated to the product and its presentation must be changed.
- Mixed: with products with different characteristics (different batches, dates, methods of production, etc), a new batch must be defined. In case of incidents, several origin batches would be affected.

From retailer to consumer

There are different types of retailers according the consumer:

- Retailers that sell only to the final consumer: need upstream traceability system.
- Retailers that sell only to the final consumer, but can process the product: internal and upstream traceability systems.
- Retailers that sell to the final consumer and to other companies: need internal and downstream traceability.

Exchanged information further includes the freshness category, date of classification and shipping date in the case of products from third countries included in article 3 of Regulation (EC) No. 2406/96 from the European Council.

All this information must be available to the consumers, as shown in figures 4 and 5, however, in the case of the last supplier the indication of the scientific name is facultative. Whenever the amounts of fishery products traded either by fishermen or aquaculture producers are lower than 10 kg or €20 the previous requirements do not

Capture or production zone:		First producer or shipping centre: Nº of permit: Name: Address:	
Commercial name: Scientific name:			
Net weight:	Production method:	Presentation or treatment method:	

Figure 4 - Example of correct label for products from European Union and for products from third countries not included in article 3 of Regulation (EC) No. 2406/96 from the European Council.

apply.

Capture or production zone:	Country of origin:	Size:	Freshness category:	E A B
Commercial name: Scientific name:				
Net weight:	Production method:	Presentation or treatment method:	First producer: Name and Address:	Date of classification: Shipping date:

Figure 5 - Example of correct label for products from third countries included in article 3 of Regulation (EC) No. 2406/96 from the European Council.

Apart from the data elements previously identified and exchanged in the seafood supply chain other information is presented to the legal national authorities, namely the ones that are concerned with the use of the European community catch certificate and the TRACES system. These cases are further detailed in this section.

In general in the seafood supply chain no exchange was identified between stakeholders other than the mandatory information regulated by national and European legislation.

At the point of sale the transference of data is synthetized in Table 1.

Table 1 - Transference of data in the point of sale.

Minimum mandatory data	Alive, fresh, refrigerated or cooked		Frozen and deep-frozen	
	On a label in the package, table or annex documentation	On a label, table or placard for bulk sale (final consumer)	On a label in the package or annex documentation	On a label, table or placard for retail without packaging
Commercial name	•	•	•	•
Area of capture	•	•	•	•
Method of production (extractive fishing, aquaculture...)	•	•	•	•
Presentation	•	•		•

	eviscerated, filleted, cooked, with or without head, defrosted, other		whole, filleted, other	
Scientific name	•		•	
Net weight (packaged products)	•		•	
Identification of first issuer	•			
Denomination				•

8.2 NEW EU STANDARDS FOR CONSUMER INFORMATION

Recently the European Commission has proposed new guidelines on labelling for fish and aquaculture products in the EU to help consumers make informed decisions on the food they eat. On June 18 2013, the Fisheries Committee in the European Parliament approved the final version of the new regulation on the Common Market Organisation of fishery and aquaculture products (CMO). The CMO reform document will be submitted to the EU Council by early October and comes into effect at the beginning of 2014. The CMO manages the extensive EU fisheries market which includes the responsibility of setting standards for the provision of consumer information. The text of the reformed CMO, to be operational from 1 January 2014 has new consumer information requirements that will apply specifically from 13 December 2014 (Chapter IV and Article 52). Seafood products included in the scope of the regulation include fish, crustaceans, molluscs and seaweeds marketed in the EU sold to the final consumer or to a mass caterer.

Considering the present text of the proposal for the new CMO, the following will apply:

- The scientific name of the seafood species and the fishing gear category used to capture wild fish will become mandatory label information. This will be mandatory in addition to the current requirements to list the seafood species' commercial name, production method and area caught or farmed (Figure 6).
- For those fish caught at sea within the Northeast Atlantic, the Mediterranean and Black Seas, information on fishing area will have to extend further than the current requirements to just list the FAO area. The specific zone (as the sub-area or division of FAO area) from which the fish was caught must be stated, expressed in an understandable way for consumers or in the form of an easily comprehensible map depicting the particular area. However, only FAO areas (without the accompanying simple explanation) will need to be listed for fish caught outside of these areas.
- As for commodities produced through aquaculture, products will have to list the country in which a seafood product grew to more than half its final weight, stayed for more than half its rearing period or, for shellfish, spent the last six months of the cultivating or rearing process.
- Although gear categories will have to be labelled for fish caught at sea, an equivalent requirement relating to production methods is not necessary for farmed products.

- Operators will be allowed to list more specific catch and production areas, but this is not a mandatory requirement.
- The mandatory information (scientific name, commercial name, production or catch area, production method and gear type) for seafood products that are not pre-packaged may be provided on posters or billboards near the merchandise.
- In the case of seafood products that are all one species, but caught with different fishing methods, the packaging will have to list all the methods used to catch them. However, if the fish included in a product come from different areas, each area will not have to be listed; only the location that is most representative is required. The product, though, still must indicate that it contains a batch of fish from different areas.
- The CMO reform document emphasizes that voluntary information must be clear and unambiguous. Other and more detailed information can be listed pertaining to fishing gears, environmental information, production techniques, ethical or social information and production practices. However, no voluntary information is allowed to be communicated that cannot be verified.
- A labelling component that provides for the possible creation of a Union-wide ecolabel scheme for fisheries products is also included (article 42a). According to article 42a of the CMO reform document after consulting Member States and stakeholders, the Commission shall, by 1st January 2015, submit to the European







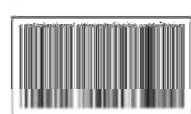


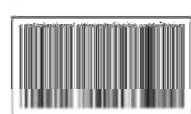




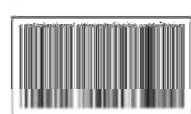
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Figure 6 - Example of new label to be used by the fish industry in the European market in fishery and aquaculture products after December 2014.

Parliament and to the Council a feasibility report on options for an ecolabel scheme for fisheries and aquaculture products, in particular on establishing such a scheme Union-wide and on setting minimum requirements for the use by Member States of an EU Ecolabel.

8.3 IMPORTED FISHERY PRODUCTS: THE EUROPEAN COMMUNITY CATCH CERTIFICATE

In terms of the information exchanged between stakeholders, in the case of imported fishery products, the data present in the European Community Catch Certificate (ECCC) also needs to be considered. The ECCC is the result of the application of Regulation (EC) No. 1005/2008 of September 29 2008, establishing a Community system to prevent, deter and eliminate illegal, unreported and unregulated fishing (IUU Regulation) and Regulation (EC) No. 1010/2009 of October 22 2009, laying down rules for the application of Council Regulation (EC) No. 1005/2008 of September 29. The mentioned Community legislation entered into force new obligations of control and certification of catches of fishery products, from January 1 2010. Thus, in order to ensure that catches were carried out in accordance with the laws, regulations or international conservation and management measures in respect of fisheries, the fish and the products of sea-fishing which fall under Chapter 03 and Tariff headings 1604 and 1605 of the Combined Nomenclature established by Council Regulation (EEC) No 2658/87 of 23 July 1987 on the tariff and statistical nomenclature and on the Common Customs Tariff, when "imported" in the community, are subject to the rules of presentation of the catch certificates.

This, however, does not apply to freshwater fishing products, aquaculture products obtained from fry or larvae, live ornamental fish, oysters, scallops and mussels, mentioned in Annex I of Regulation (EC) No. 1005/2008.

The ECCC is the document containing the relevant information for the product, including the corresponding tariff item validated by the public authority of the flag state of the catching vessel or vessels, provided with powers to certify the accuracy of the information entered in the document. These certificates shall be numbered, dated, properly filled in and validated by the competent entity assigned by the authorities of the country of the ship's flag of capture. They must correspond to all the goods presented for "import" or the total amount of fish used in the transformation of the quantities exported to the community, in the case of "indirect importation" of fishery products processed in a third country.

The model of ECCC used in Europe for most common captured fish species is presented in Figure 7. In the case of fish species subject to a certification scheme of regional organization of fisheries management a specific document is needed. As an example it is shown in Figure 8 the ICCAT bluefin tuna catch document for the specific case of bluefin tuna.

The main information recorded in the ECCC, as shown in Figures 7 and 8, includes:

- (a) Vessel identification;
- (b) Name of the designated port of destination and the purposes of the call, landing, transshipment or access to services;
- (c) Fishing authorisation or, where appropriate, authorization to support fishing operations or to transship fishery products;

- (d) Dates of the fishing trip;
- (e) Estimated date and time of arrival at port;
- (f) The quantities of each species retained on board or, where appropriate, a negative report;
- (g) The zone or zones where the catch was made or where transshipment took place, whether in Community waters, in zones under the jurisdiction or sovereignty of a third country or on the high seas;
- (h) The quantities for each species to be landed or transshipped.

In an overall assessment the European Community Catch Certificate has a significant role in deterring trade with the Community in fishery products stemming from IUU fishing. In order to make this prohibition effective and ensure that all traded fishery products imported into or exported from the Community have been harvested in compliance with international conservation and management measures and, where appropriate, other relevant rules applying to the fishing vessel concerned. Nevertheless and though important information is exchanged, no data is transferred with this system that allows the traceability of the products in relation to, for example, the fishing stocks or capture/production methods and processing methods.

NO INFORMATION IS TRANSFERRED IN THE EUROPEAN COMMUNITY CATCH CERTIFICATE ALLOWING THE TRACEABILITY OF THE PRODUCTS IN RELATION TO THE FISHING STOCKS OR CAPTURE/PRODUCTION METHODS

EUROPEAN COMMUNITY CATCH CERTIFICATE							
Document number			Validating Authority				
1. Name		Address			Tel. Fax		
2. Fishing Vessel Name		Flag - Gross Tonnage and Registration Number		Call Sign	IMO/LLP/ID Number (if issued)		
Fishing license No. - Valid to		Insurance No. Trawler No. Telephone No. E-mail address (if issued)					
3. Description of Product		Type of processing authorized on board:		4. Reference of applicable conservation and management measures			
Species	Product code	Catch weight and date	Estimated live weight (kg)	Estimated weight in ice landed (kg)	Verified Weight Landed (kg) where appropriate		
5. Name of master of fishing vessel - Signature - Seal:							
6. Declaration of Transhipment at Sea			Signature and Date	Transhipment Date/area/Position	Estimated weight (kg)		
Master of Fishing Vessel		Signat ure	Vessel Name	Call Sign	IMO/LLP/ID Number (if issued)		
7. Transhipment authorization within a port area:							
Name	Authority	Signature	ADM No.	Tel.	Port of Landing	Date of Landing	Seal (if appropriate)
8. Name and address of Exporter		Signature		Date		Seal	
9. Flag State Authority Validation:							
Name/Title		Signature		Date		Seal (if appropriate)	
10. Transport details - See Appendix F							
III. Importer Declaration:							
Name and address of Importer		Signature		Date		Seal	
Documents under Article 14(1), (2) of Regulation (EC) n° .../...		Reference n°					
13. Import control Authority		Place		Importation authorized*	Importation suspended*	Verification requested - date	
Customs declaration (if issued)		Number		Date		Place	

* Tick as appropriate.

Figure 7 - European Community catch certificate, In: Regulation (CE) 1010/2009 of the European Commission.

ICCAT BLUEFIN TUNA CATCH DOCUMENT		DOCUMENTO ICCAT DE CAPTURAS DE ATUM RABILHO		1 N.º	
2 CATCH / CAPTURAS	VESSEL/TRAP NAVIO/ARMAÇÃO	NAME/NOME	FLAG/PAÍS DE BANDEIRA	ICCAT Record No./Nº de Registro ICCAT	
	CATCH CAPTURAS	DATE DATA	AREA	GEAR ARTE	
3 GOVT VALIDATIO VALIDAÇÃO GOV	NAME OF AUTHORITY/NOME DA AUTORIDADE	TITLE/TÍTULO	DATE DATA	SEAL/SELLO	
	SIGNATURE/ASSINATURA				
3 TOWING VESSEL NAVIO AUXILIAR	NAME/NOME	FLAG/PAÍS DE BANDEIRA	ICCAT Record No./Nº de Registro	TOWING CAGE JAUJA	NUMBER/NÚMERO
4 TRANSSHIPMENT/ TRANSBORDO	CARRIER VESSEL NAVIO TRANSPORTE	NAME/NOME	FLAG/PAÍS DE BANDEIRA	PORT/PORTO	COUNTRY/PAÍS
	PRODUCT/PRODUTO (CIRCLE/ASSINALE)	DATE DATA	ICCAT Record No./Nº de Registro	LOCATION/LOCALIZAÇÃO	DATE DATA
5 FARMING/ENJAULAMENTO	FARMING FACILITY ESTABELECIMENTO	NAME/NOME	FLAG/PAÍS DE BANDEIRA	LOCATION/LOCALIZAÇÃO	ICCAT Record No./Nº de Registro ICCAT
	CAGE/JAUJA	DATE DATA	CAGE NO JAUJA N.º	NAT SAMPLING PROGRAM/ PROGRAMA NACIONAL DE ANÁLISES	<input type="checkbox"/> Y/ S <input type="checkbox"/> N
6 HARVEST CAPTURAS	FISH PEIXE	NO FISH	TOTAL WT PESO TOTAL (Kg)	AVG WT PESO MÉDIO (Kg)	
	GOVT VALIDATIO VALIDAÇÃO GOV	NAME OF AUTHORITY/NOME DA AUTORIDADE	TITLE/TÍTULO	DATE DATA	SEAL/SELLO
7 TRADE/COMERCIALIZAÇÃO	EXPORTER/SELLER EXPORTADOR VENDEDOR	PT OF DEPARTURE/PORTO DE PARTIDA	COMPANY/COMPANHIA	ADDRESS/MORADA	DATE DATA
	IMPORTER/BUYER IMPORTADOR	PT OF DESTINATION/PORTO DE DESTINO	COMPANY/COMPANHIA	ADDRESS/MORADA	DATE DATA

(1) RD = Round (Inteiro); GG=Gilled & Gutted (Eviscerado s/ guelras); DR=Dressed (Eviscerado, s/ guelras e sem cauda); FL=Fillet (Filetado); OT=Other (Outros processamentos); F=Fresh (Fresco); FR=Frozen (Congelado).

Figure 8 - ICCAT bluefin tuna catch document for the specific case of bluefin tuna.

8.4 THE TRACES SYSTEM

In terms of transference of information, the trade of food products between the different European countries and the European Commission is processed through TRACES, or “Trade Control and Expert System”. This is a web-based veterinarian certification tool used by the European Union for controlling the import and export of live animals and animal products within and outside of its borders. This system was first mentioned in the decision of the Commission 2003/623/CE of 19 August 2003. Its internet-based network falls under the responsibility of the European Commission and is composed of veterinary authorities of member states and participating non-EU countries. Through it, central and local authorities, border inspection posts and economics operators are linked.

Though decision 2004/292/CE mandates member states and economic operators to use the electronic certification system TRACES since 31 December 2004, at present, the legal basis for exchange of goods or live animals among non-EU countries and the EU is still using a paper certificate supported by TRACES. In operation TRACES sends an electronic message from the departure point to the transfer point and the arrival point to notify that a consignment is arriving. Similarly, every concerned point sends a message to other points which enables a well-developed follow up of the consignment (goods or animals) movement. Economic operators are able to start the process electronically by filling in the first part of the mandatory certificates for importing goods and animals into the EU.

TRACES provide electronic and printable veterinary and sanitary certificates which are mandatory with consignments during import and movement in the EU. These certificates follow both live animals and animal products as they travel to and through the EU.

Traceability is the core element of the system. TRACES keep track of every importation or movement in the EU of animals or animal products which allows tracing instantaneously throughout the journey in case of a serious problem. More precisely data about rejected consignments, and especially the reasons of rejection, are kept for the same purpose.

Regarding the information of the traded products, in section 12 of “The Common Veterinary Entry Document” (CVED) used in TRACES the nature of the goods is requested, namely the indication of the species of the animal or product, the treatment undergone by the products and the number and type of packages that comprise the load, e.g. 50 boxes of 2 kg, or the number of containers. The statement of the transport temperature is also requested in the same section.

Furthermore in section 13 of the CVED it is also requested as a minimum the first four digits of the relevant Combined Nomenclature (CN) code established pursuant to Council Regulation (EEC) No 2658/87 as last amended. These codes are also listed in Commission Decision 2002/349/EC (and are equivalent to the Harmonized Commodity Description and Coding System [HS] headings). In the case of fishery products only, whenever there is one certificate with one consignment having contents with more than

one commodity code, the additional codes may be annotated onto the CVED as appropriate.

8.5 OVERAL EVALUATION

The TRACES platform constitutes a key element of how the European Union facilitates trade and improves health protection for the consumer. However, though being an excellent information exchange platform, it is basically focused on guaranteeing the safety of the products. As such no information is transferred within this system that allows the traceability of the products in relation to, for example, the geographic origin in terms of fishing grounds or production area of products, fishing stocks or capture/production methods and processing parameters.

9. BOTTLENECKS AND SUGGESTIONS FOR IMPROVED TRACEABILITY

Currently, traceability in the European fishing industry presents some constraints with regard to its application or scope. This is mainly because there is a great amount of data within some supply chains of products frozen at sea, local small-scale fishing, coastal fishing and the processing industries, which are not fully "taken advantage of" by virtue of not having implemented any standardized system that allows quick and efficient traceability of all the data throughout the chain. Current regulations seek to ensure that at each stage of production, processing and transport of fish throughout the supply chain appropriate measures are taken to keep the product fit for human consumption in accordance with the highest quality standards. However, there is still a significant inability to screen the fishery products throughout the supply chain consistently, due to fragmented and uncoordinated methodologies, where the transfer of information is limited. To this reality contribute the huge volumes of fish processed from a wide diversity of origins and involving an extensive range of species, whose control is carried out on land and not at sea, contrary to what applies to aquaculture products.

Traceability is usually limited in the fishing industry in its application or framework. That is, although traceability exists within some areas, like aquaculture, production of frozen seafood products at sea, local small-scale fishing, coastal or deep-sea fishing and secondary processors (receivers of raw materials), most of the data are still on paper and there is no standardized system implemented that allows efficient and fast traceability in the supply chain. Although the information exists, there is currently an incapacity to properly and constantly screen all the fish throughout the supply chain. In some links of the supply chain local measures aimed at achieving a limited traceability were implemented, but these involve a fragmented methodology and are uncoordinated

NO INFORMATION IS TRANSFERRED ALLOWING THE TRACEABILITY OF THE PRODUCTS IN RELATION TO THE FISHING STOCKS OF ORIGIN OF THE PRODUCTS, OR CAPTURE/PRODUCTION METHODS

and inconsistent.

To start to tackle this problem in December 2000 the European Commission funded the Tracefish Project, under the thematic program "Quality of life and management of living resources". This Concerted Action was intended to give uniformity to the processing methodology of all fish products intended for human consumption within the European Union. The project bases its development on the fact that in the face of increasing demands of buyers and consumers it is no longer practical or safe to only provide information via a paper document. Therefore the key to the effective functioning of the traceability system was foreseen to be based on the label of each unit of goods sold with a unique identifier and the transmission or extraction of all relevant information by electronic means. The basis of the operation was to ensure a pragmatic approach. Participation is voluntary, although there are obvious commercial pressures and benefits. In terms of improved labelling the examples in Figure 9, referring to Atlantic cod and bacalao (*Gadus morhua*), already show a good level of detail. There is information about common and scientific name (eg. Atlantic cod or bacalao, *Gadus morhua*), FAO catch area (Atlantic, Northeast), catch method (trawl or purse seine) and production/capture type (wild or aquaculture). In the examples given, particularly the one referring to wild caught cod, the label would be improved if only one catch method was mentioned and if that method was more specific (explaining the kind of trawling that was used). The Fish stock origin is also missing.

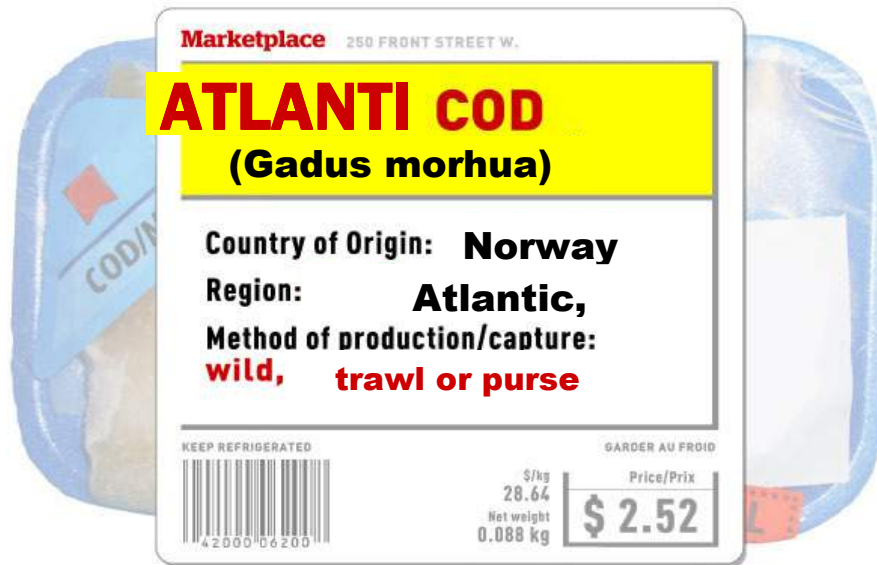
Other related bottlenecks affecting traceability include:

- The non-existence of standardized methodologies implemented for species identification of seafood products.
- The non-existence in the national legislation of any sampling methods for seafood products at the point of sale.

Although in the medium term the installation of traceability systems facilitates logistics and commodity management, the implementation from capture requires cost and effort at all levels of the value chain that many stakeholders cannot afford (printers, suitable label materials, change of working habits, etc.). Furthermore it is expected that non-EU vessels do not want join this tendency because these are not affected by legal mandates. As a consequence of the different systems the frozen fish industry, processing companies and market should adapt to both trends.

TRACEABILITY CAN BE IMPROVED BY INCORPORATING INFORMATION ON THE PRECISE CATCH METHOD USED AND FISH STOCK ORIGIN ON THE LABEL

Figure 2 - Example of labels found in the EUROPEAN market in Fresh fishery and aquaculture products.



PRODUCTO		BACALAO		PESO	EXPEDIDOR	
NOMBRE CIENTÍFICO		GADUS MORHUA		3 Kg.	LA PESCA	
PAÍS DE ORIGEN	CALIBRE	FRESCURA	E (A) B	DOMICILIO		
ESPAÑA	4			C/ DEL PESCADO		
	OBTENCIÓN	ACUICULTURA		FECHA	R.S.L. 83632	
				ABR. 2013	PRESENTACIÓN	
				C/c		
PRECIO						
42,00 €				14,00 €/Kg.		

Figure 9 - Example of labels found in the European market in fresh fishery and aquaculture products.

ANNEX 1: European Legislation (traceability)

- I. Regulation 104/2000
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2000:017:0022:0052:EN:PDF>
- II. Directive 2000/13/EC
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2000:109:0029:0042:EN:PDF>
- III. White paper on Food Safety (2000)
http://ec.europa.eu/dgs/health_consumer/library/pub/pub06_en.pdf
- IV. Commission regulation 2065/2001
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2001:278:0006:0008:EN:PDF>
- V. Regulation 178/2002
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:031:0001:0024:EN:PDF>
- VI. Council Regulation 1224/2009
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:343:0001:0050:EN:PDF>
- VII. Regulation 1169/2011
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0018:0063:EN:PDF>
- VIII. Regulation 931/2011
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:242:0002:0003:EN:PDF>
- IX. Commission implementing regulation 404/2011
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:112:0001:0153:EN:PDF>
- X. Council Regulation 2136/89
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1989:212:0079:0081:EN:PDF>
- XI. Council Regulation 1536/92
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1992:163:0001:0004:EN:PDF>

